

TEST NUMBER V-20060
REVISION NO. 025
EFFECTIVITY AS-509 & SUBS
RELEASE DATE JANUARY 7, 1971



**JOHN F. KENNEDY
SPACE CENTER**

**RELEASED
FOR AS 509**

**LAUNCH VEHICLE OPERATIONS FOR
SUPPORT OF SPACE VEHICLE
COUNTDOWN DEMONSTRATION TEST
AND LAUNCH COUNTDOWN**

(COMPLETE REVISION)

VOLUME III OF III



**Prepared For
LAUNCH VEHICLE OPERATIONS**

**Prepared By
THE BOEING COMPANY
ATLANTIC TEST CENTER
SATURN V-LAUNCH OPERATIONS**

**THIS TCP CONTAINS
HAZARDOUS OPERATIONS**

THIS REVISION 025 COMPLETELY REPLACES THE
REVISION 024 RELEASE AND INCORPORATES THE
FOLLOWING PCR'S:

XB-242-21
XB-236-22
XB-240-23
B-299-24
B-300-25
B-302-26
XB-239-27

TCP NO V-20060
REVISION 025
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VOLUME III OF III

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HAZARDOUS OPERATIONS**

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A. INTRODUCTION

1. THIS VOLUME CONTAINS TIME SEQUENCED OPERATIONS REQUIRED TO RETURN THE LAUNCH VEHICLE TO COUNTDOWN CONFIGURATION IN THE EVENT THE PRIMARY LAUNCH WINDOW COUNTDOWN IS PREMATURELY TERMINATED OR TO SECURE THE LV FOR A ONE MONTH LATER LAUNCH ATTEMPT.

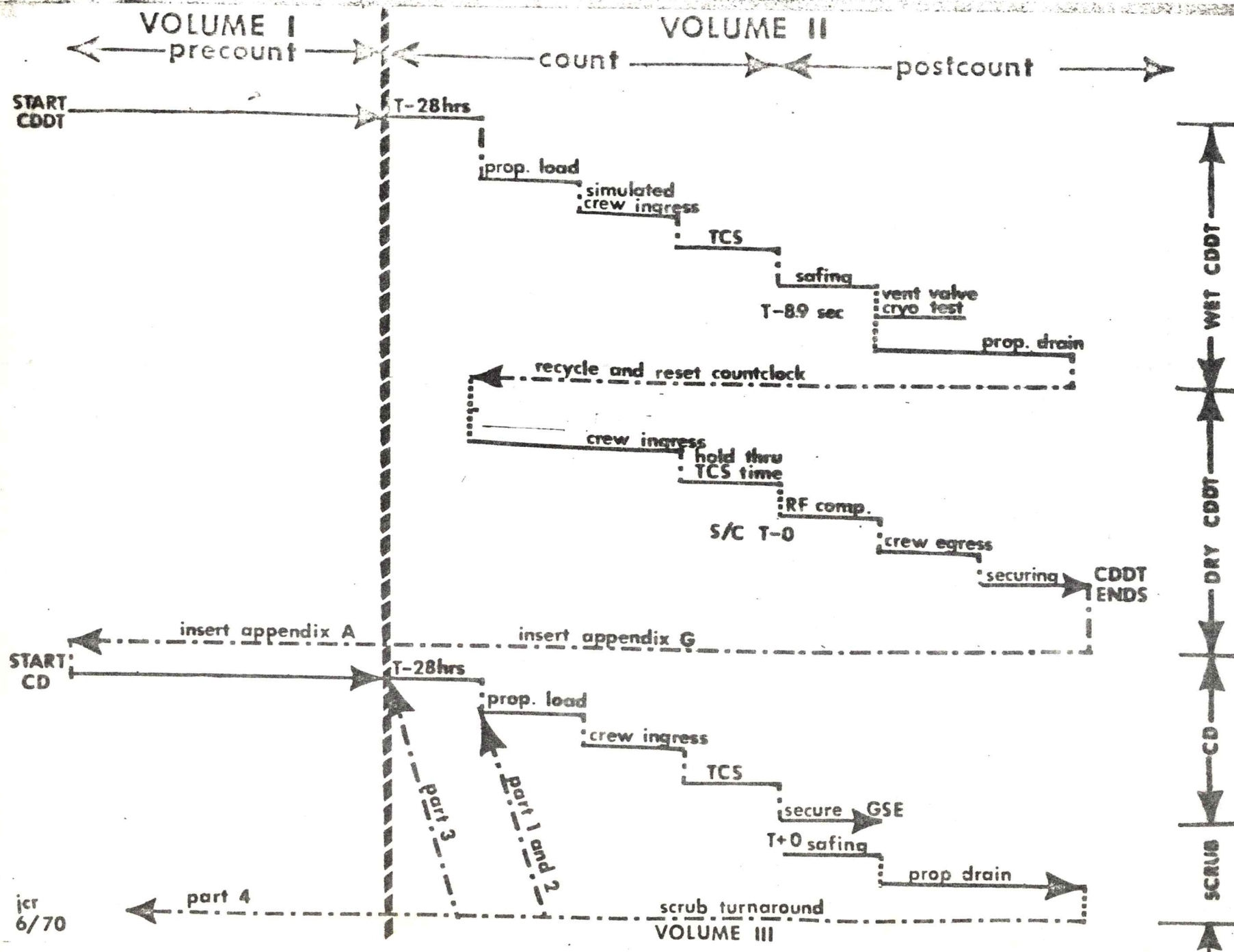
B. INTEGRATED TCP INTERFACE

1. SPECIFIC SEQUENCES IDENTIFIED IN THIS TCP WITH THE SYMBOL TCP1 (TEST & CHECKOUT PROCEDURE INTERFACE) HAVE BEEN COORDINATED WITH OTHER ORGANIZATIONS WHOSE CORRESPONDING TCP'S ARE USED DURING THIS TEST. IT IS THE RESPONSIBILITY OF THE ORGANIZATION INITIATING A CHANGE TO A TCP1 SEQUENCE TO INSURE THAT COORDINATION WITH AFFECTED ORGANIZATIONS IS ACCOMPLISHED THROUGH THE INTEGRATION SUPPORT CONTRACTOR. PROBLEMS RESULTING FROM THE COORDINATION WILL BE RESOLVED BY LV-OMO-1 PRIOR TO THE DLO PRE-TEST BRIEFING, AND LV-OMO-3 FROM THE TIME OF DLO PRE-TEST BRIEFING THROUGH COMPLETION OF THE TEST.

C. SAFETY

1. THE LAUNCH VEHICLE COUNTDOWN DEMONSTRATION AND COUNTDOWN OPERATIONS ARE CONSIDERED TO BE HAZARDOUS FOR THE FOLLOWING REASONS:
 - (A) SPACECRAFT HYPERGOLICS WILL BE ON BOARD,
 - (B) RP-1 WILL BE ON BOARD,
 - (C) SPACE VEHICLE ORDNANCE WILL BE INSTALLED AND CONNECTED,
 - (D) SPACE VEHICLE PROPELLANT TANKS AND GAS STORAGE SPHERES WILL BE PRESSURIZED,
 - (E) HAZARDOUS ENVIRONMENTAL CONDITIONS MAY BE ENCOUNTERED (INERT ATMOSPHERES, WORK AT HEIGHTS, RADIATION AND ENGINE GIMBALLING),
 - (F) HEAVY EQUIPMENT MOVEMENTS WILL BE REQUIRED,
 - (G) SPACE VEHICLE CRYOGENIC LIQUIDS (LOX, LH2 & SHE) WILL BE LOADED,
 - (H) THE FLIGHT CREW WILL INGRESS AND THE HATCH WILL BE CLOSED,
 - (I) THE SPACE VEHICLE WILL BE LAUNCHED (CD ONLY),

CDDT & COUNTDOWN PROCEDURE EXPLANATION



REQUIRED SUBTASK DOCUMENTATION

THE TEST AND CHECKOUT PROCEDURES REFERENCED IN THIS DOCUMENT ARE TABULATED BELOW. THE REVISION LEVEL SHOWN IS THE ONE TO BE USED DURING THE LAUNCH VEHICLE COUNTDOWN DEMONSTRATION AND COUNTDOWN. CORRECTIONS AND CHANGES MUST BE PROCESSED IN ACCORDANCE WITH T1-2-17.

S-IC STAGE & GSE SUBTASKS

TCP NO.	REV	TITLE
V-21008	006	ELECT CONNECTION OF S-IC PD ERM DETS (HAZARDOUS)
V-21009	005	ELECT CONNECTION OF S-IC PD S&A UNITS (HAZARDOUS)
V-21012	006	ELECT CONNECTION OF S-IC RR ERM DETS (HAZARDOUS)
V-21014	005	ELECT INSTL & REMOVAL OF HV IGNITERS (HAZARDOUS)
V-21015	008	FLIGHT BATTERY ACTIVATION AND CHECKOUT (HAZARDOUS)
V-21035	005	PREPS OF S-IC ESE TO SUPPORT LAUNCH CD
V-21036	002	S-IC STAGE ESE POST LAUNCH CHECK LIST
V-21038	006	S-IC POWER ON (COMMON STARTING CONFIGURATION)
V-21097	004	S-IC POWER OFF
V-21194	006	LSE POWER ON & OFF REMOTE CONTROL (LCC)
V-21204	004	INSTALLATION OF S-IC FLIGHT BATTERIES (HAZARDOUS)
V-21321	005	ELEC INSTALLATION OF S-IC HDA ORD (HAZARDOUS)
V-21439	002	EMERGENCY BACKUP BATTERY OPERATIONAL TEST
V-24010	007	S-IC INTERNAL WORK PLATFORM REMOVAL (HAZARDOUS)
V-24011	005	S-IC BULKHEAD PROTECTION EQUIPMENT REMOVAL (HAZARDOUS)
V-24025	003	S-IC GROUND HYD SUP & C/O UNIT SETUP (HAZARDOUS)
V-24320	002	S-IC FORWARD UMBILICAL RECONNECTION
V-24327	005	S-IC STAGE PNEU SYS CDDT AND LAUNCH PREP (HAZARDOUS)
V-25034	003	LH2 STORAGE TANK FILL AND DRAIN (HAZARDOUS)
V-25155	006	PTCS PREPS FOR PROPELLANT LOADING OPS
V-25329	001	LX STORAGE AREA TANK FILLING/PAD A (HAZARDOUS)
V-25331	HAZIC	LX TANK SAMPLING/PAD A (HAZARDOUS)
V-26222	005	SOP FOR THE PNEU DIST SYS (HAZARDOUS)
V-26247	003	ENVIRONMENTAL CONTROL SYSTEM DAILY OPS (HAZARDOUS)
V-26476	001	HDA CDDT PIN PREPS (HAZARDOUS)
V-27087	002	HGD SYSTEM OPERATING PROCEDURE (HAZARDOUS)
V-27093	005	S-IC LOX/FUEL LIQUID LEVEL & LOADING ELECTRONICS TESTS
V-27098	006	VEH MEAS STATION GSE PREPS
V-27153	007	S-IC STAGE MEASURING SCAN TEST MT01
V-27175	006	LCC MEAS STA OPERATION, CAL & MAINT
V-28186	003	S-IC STAGE AND GSE TM SUPPORT
V-29003	003	S-IC STAGE ORD INST AT PAD (HAZARDOUS)
V-29005	004	F-1 ENGINE ORDNANCE INSTALLATION (HAZARDOUS)
V-31031	003	IWS ELECTRICAL POWER PREPARATION
V-31045	004	SA/TS/LX/ELEC SUPPORT FOR CDDT & LAUNCH
V-31047	003	S-IC STAGE UMBILICAL CABLE PROCEDURE
V-33030	004	S-IC FLIGHT CONTROL SYSTEMS PREPARATIONS
V-34012	004	S-IC STAGE PROP SYS PREPS (HAZARDOUS)
V-35004	003	LH2 SYSTEM PREP FOR VEHICLE LOADING
V-35005	003	LH2 SYSTEM SECURING AFTER LOADING (HAZARDOUS)
V-36032	002	S-IC IFT SERV ARM LOCAL CONTROL OPERATION (HAZARDOUS)
V-36039	005	TSW SYS PREPS & OPS FOR S/V CDDT & CD (HAZARDOUS)
V-36043	004	SMOPS LAUNCH CONFIGURATION PREPS (HAZARDOUS)
V-36064	004	PNEU DIST SYS LAUNCH PREPS
V-36069	004	HDA & S/A CONTROL SW SUPPORT OPERATION (HAZARDOUS)
V-36070	004	PLATFORMS AND TRANSPORTER LAUNCH PREPS (HAZARDOUS)
V-36074	001	ECS PROP LOAD SUPPORT OPS (HAZARDOUS)
V-36077	004	S-IC INTERTANK S/A SUPPORT OPS CDDT & LAUNCH (HAZARDOUS)
V-36078	003	S-IC FWD S/A OPS CDDT & LAUNCH (HAZARDOUS)
V-36079	004	HYD DISTRIBUTION SYS PREPS FOR COUNTDOWN
V-36080	004	S-IC INTERMEDIATE S/A SUPPORT OPS CDDT & CD (HAZARDOUS)
V-36081	003	S-IC FWD S/A SUPPORT OPS CDDT & LAUNCH (HAZARDOUS)
V-36082	003	S-IVB AFT S/A SUPPORT OPS CDDT & LAUNCH (HAZARDOUS)
V-36083	003	S-IVB FWD S/A SUPPORT OPS CDDT & LAUNCH (HAZARDOUS)
V-36084	003	SM S/A SUPPORT OPS CDDT & LAUNCH (HAZARDOUS)
V-36085	004	CM ACCESS ARM SUPPORT OPS CDDT & LAUNCH (HAZARDOUS)
V-36086	004	DRRS SUPPORT OPS CDDT & LAUNCH (HAZARDOUS)
V-36112	003	Q-BALL COVER REMOVAL SYS CDDT & LAUNCH PREPS (HAZARDOUS)
V-36113	001	INDUSTRIAL WATER SYSTEM LAUNCH PREPS (HAZARDOUS)
V-37038	002	HAZARDOUS GAS DETECTION SYSTEM MAINT PROC (HAZARDOUS)
V-38000	006	DRSCS-PAD, STAGE AND VEHICLE SUPPORT

S-II STAGE SUBTASKS

TCP NO.	REV	TITLE
V-21101	006	B012 FLT BATT ACT FOR S-II STAGE (HAZARDOUS)
V-21103	004	B011 S-II STAGE POWER APPLICATION
V-21111	005	B013 S-II FLIGHT STAGE BATTERY INSTALLATION
V-21249	005	B016 S-II BATTERY REMOVAL
V-21253	008	G060 S-II FINAL ELECTRICAL CHECKS
V-21348	005	H017 - PROP UTILIZATION COMP PRESSURIZATION
V-21438	002	B022 FINAL STAGE ELECTRICAL CHECKS
V-24116	003	J001 PROPELLANT FEED, RECIRCULATION LINES, AND LH2 TANK VENT LINES VACUUM CHECK
V-25151	006	H013 PROP UTILIZATION CAL AND FUNC TEST
V-26008	004	G042 REMOVAL AND STORAGE OF S-II STAGE ACCESS EQUIPMENT AND PLATFORMS
V-26489	BASIC	G138 S-II ACCESS KIT INSTALLATION
V-27154	001	G031 LCC RECORDER, FUNC SETUP & VERIFICATION (HAZARDOUS)
V-27163	002	G032 MEASUREMENT STATION CHECKOUT/TEST
V-27208	002	X044 S-II FINAL AIRBORNE MEASUREMENTS CLOSOUT
V-27218	BASIC	G137 S-II GSE ENGINEERING WALKDOWN OF ML INSTR
V-28135	001	G050 PCM - TM CHECKOUT EQUIP TEST
V-28143	007	H021 S-II STAGE RF & TM CLOSOUT FOR LAUNCH
V-28144	004	R014 S-II TM OPERATIONAL READINESS CHECK
V-28181	BASIC	G125 FM/FM TM C/O EQUIP TEST (STAGE MODULE)
V-29023	003	Z006 S-II ERM DETONATOR INST (HAZARDOUS)
V-29024	002	K008 S-II S&A DEVICE INSTL AND ELEC FUNC C/O (HAZARDOUS)
V-29038	004	S009 S-IC/S-II, S-II/S-II AND S-II/S-IVB PULSE SENSOR REMOVAL
V-30029	007	H020 S-II STAGE & GSE PREPS FOR S/V CDDT & CD (HAZARDOUS)
V-34014	005	E023 - PROPULSION SYS LAUNCH PAD TEST OPS (HAZARDOUS)

S-IVB STAGE SUBTASKS

TCP NO.	REV	TITLE
V-21005	005	PROPELLANT UTILIZATION SUBSYSTEM TEST
V-21322	004	FLIGHT BATTERY ACTIVATION, 1A68316 FWD NO, 2 (HAZARDOUS)
V-21323	004	FLIGHT BATTERY ACTIVATION, 1A68317 AFT NO, 2 (HAZARDOUS)
V-21324	004	FLIGHT BATTERY ACTIVATION, 1A59741 (HAZARDOUS)
V-30539	006	S-IVB SUPPORT AND PREPS FOR CDDT & CD (HAZARDOUS)

INSTRUMENT UNIT SUBTASKS

TCP NO.	REV	TITLE
V-21223	018	IU POWER APPLICATION/REMOVAL
V-21254	012	IU BATT ACTIVATION, MON & DISCHARGE PROC (HAZARDOUS)
V-26178	009	IU EQUIPMENT PRESSURIZATION (HAZARDOUS)
V-31062	010	IBM SUPPLEMENTAL TO S/V CDDT AND CD (HAZARDOUS)
V-34046	006	IU ACCESS DOOR INSTALLATION AND REMOVAL
V-34047	010	IU HEAVY COMPONENT INSTALLATION & REMOVAL
V-36038	007	IU PNEUMATIC CONSOLE SET UP

INTEGRATED PROCEDURES

TCP NO.	REV	TITLE
V-20056	008	SATURN V LAUNCH VEHICLE EMERGENCY PROCEDURE (HAZARDOUS)
V-35014	011	LV AUTO AND MAN LOX/LH2 LOAD & DRAIN OPS (HAZARDOUS)
V-35015	009	VEHICLE LOX/LH2 TANK AND FACIL LH2 SYS PURGE (HAZARDOUS)

LV PROCEDURES

TCP NO.	REV	TITLE
V-28070	005	S-IC TELEMETRY, MOBILE LAUNCHER GSE READINESS

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TEST NO. V-20060, VOL III
VEHICLE AS-509

REVISION 025

LIST OF EFFECTIVE PAGES

THIS IS REVISION 025 OF THIS PROCEDURE, IT CONTAINS 159 PAGES AS
FOLLOWS;

PAGE NO, -----	REVISION -----
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COVER	025
1- 159	025

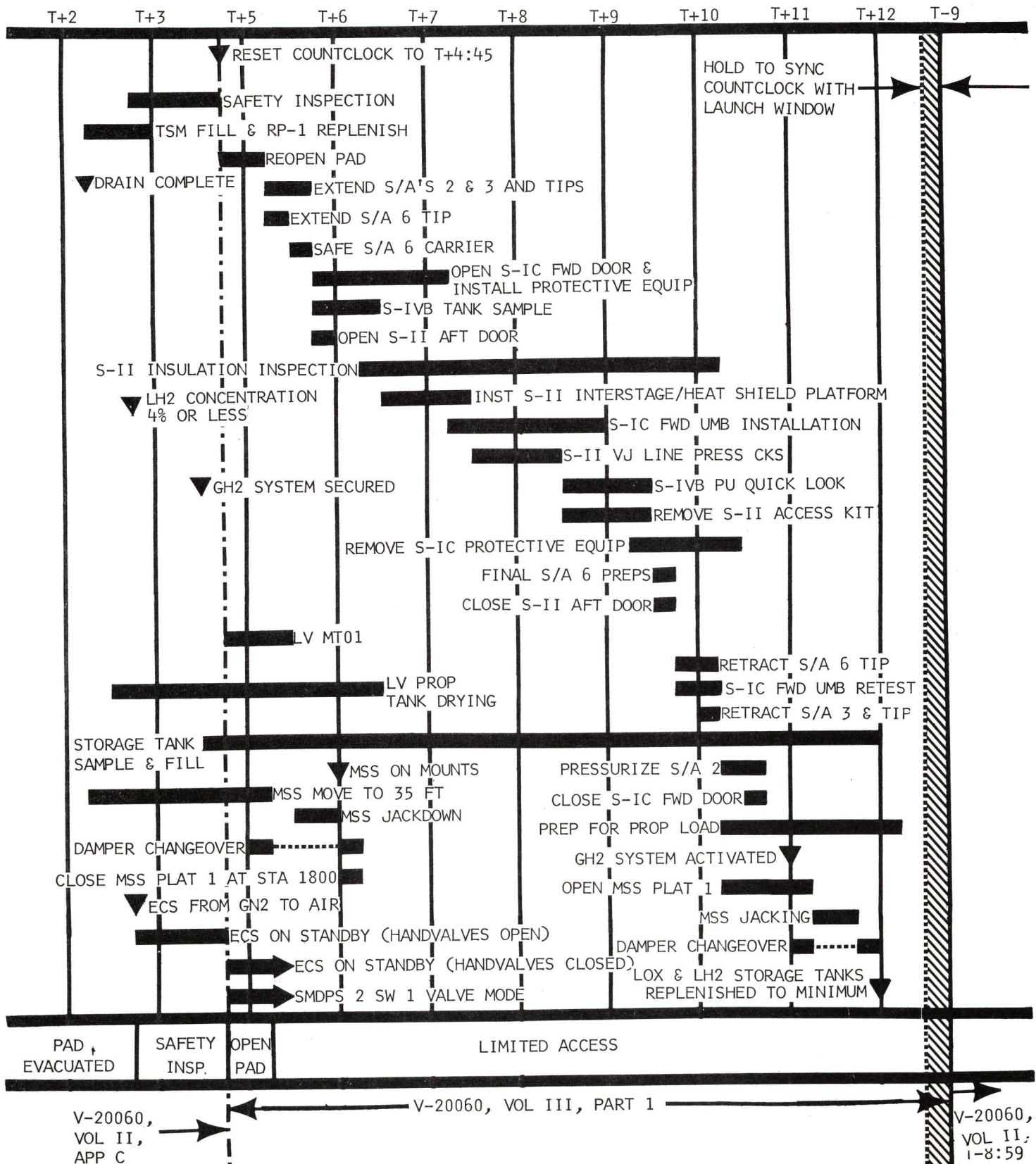
REVISION RECORD PAGE

PAGES AFFECTED

REV,	REVISED	ADDED	DELETED	REASON/SUPPORTING DOCUMENT
BASIC				RELEASED FOR AS-504, 2/14/69,
001				PRERELEASE FOR AS-505, 3/4/69,
002				RELEASED FOR AS-505, 4/11/69,
003				RELEASED FOR AS-505, 5/6/69,
004 - 007				NOT USED
008				RELEASED FOR AS-506, 6/6/69,
009 - 012				NOT USED
013				RELEASED FOR AS-507, 10/16/69,
014				NOT USED
015				PARTIAL REV FOR AS-507, 10/31/69
016				NOT USED
017				RELEASED FOR AS-508, 2/20/70,
018				NOT USED
019				PARTIAL REV FOR AS-508, 3/26/70
020-022				NOT USED
023	ALL			INCORPORATED PCR'S N-171-1, XB-202-2, N-182-3 & XB-212-4 PRERELEASE FOR AS-509, 11/2/70
024	ALL			INCORPORATED PCR'S N-180-5, Q-9-6, N-190-7, N-191-8, N-192-9, B-279-10, B-280-11, B-281-12, B-282-13, B-283-14, B-284-15, D-78-16, I-148-17, I-149-18, XB-224-19 & XB-232-20, RELEASED FOR AS-509, 12/03/70,
025	ALL			INCORPORATED XB-242-21, XB-236-22 XB-240-23, B-299-24, B-300-25, B-302-26 & XB-239-27, RELEASED FOR AS-509, 1/8/71,

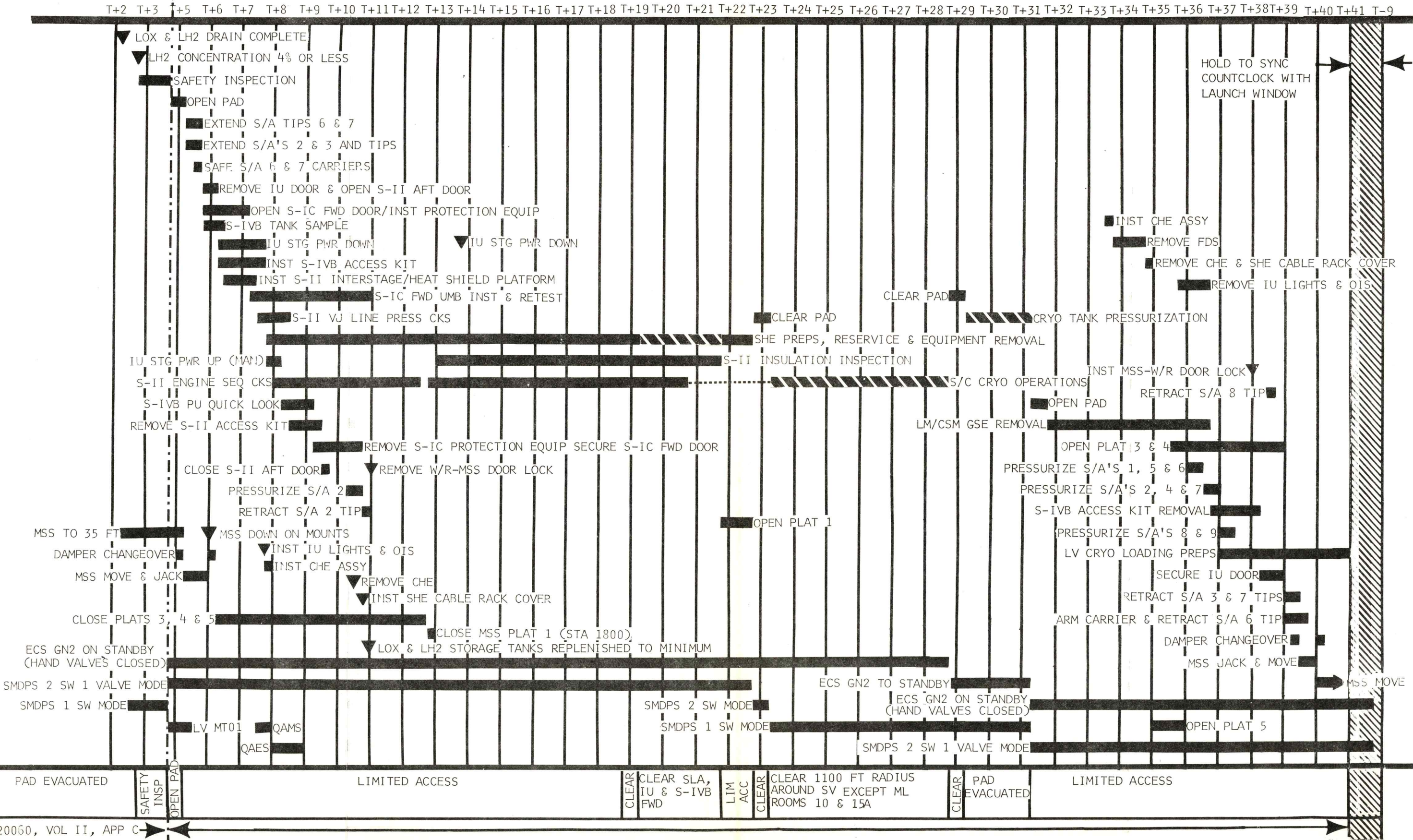
PART 1

LV 24 HR SCRUB TURNAROUND

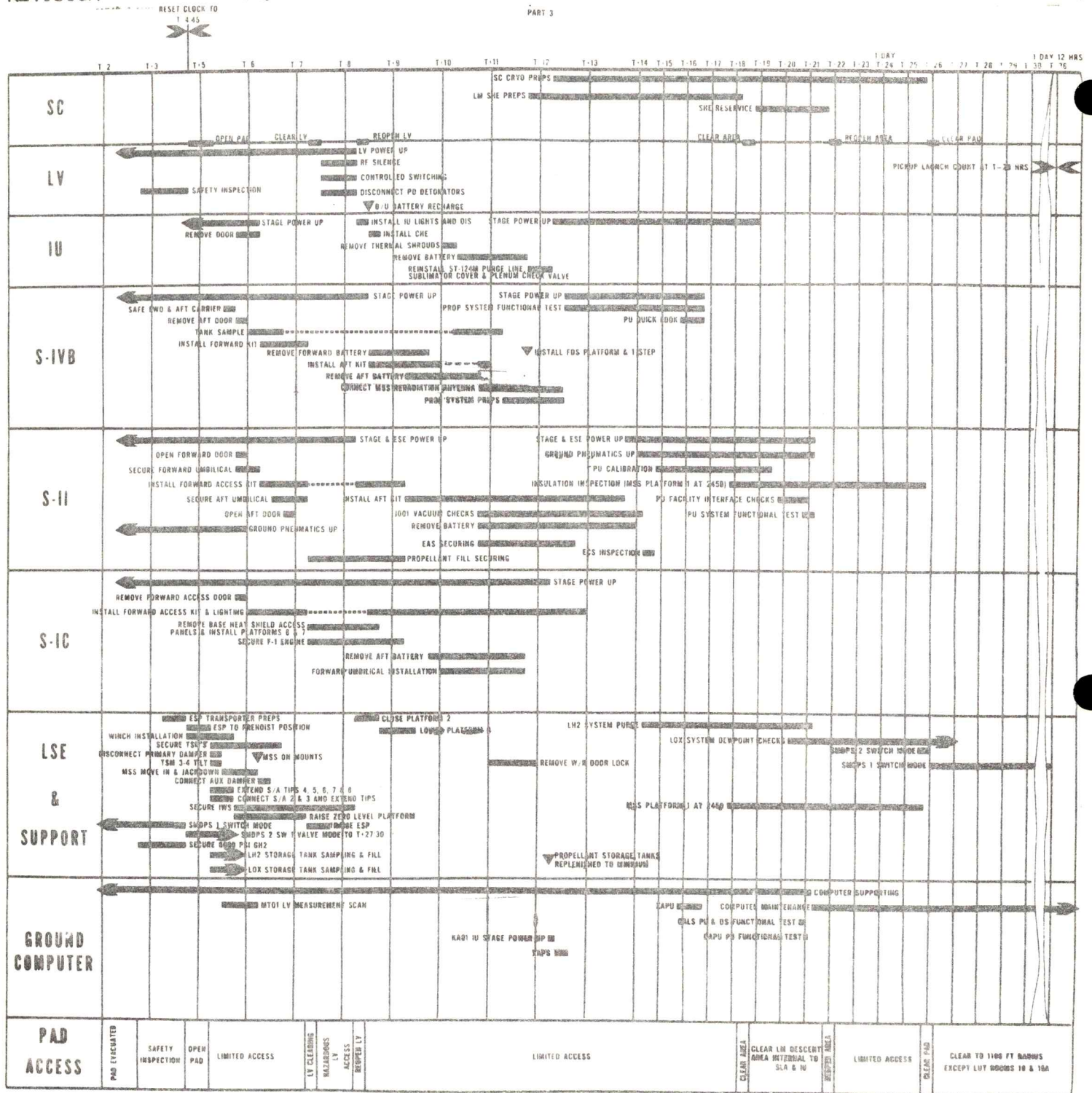


PART 2
LV 2 DAY SCRUB TURNAROUND

RESET COUNTCLOCK TO T+4:45

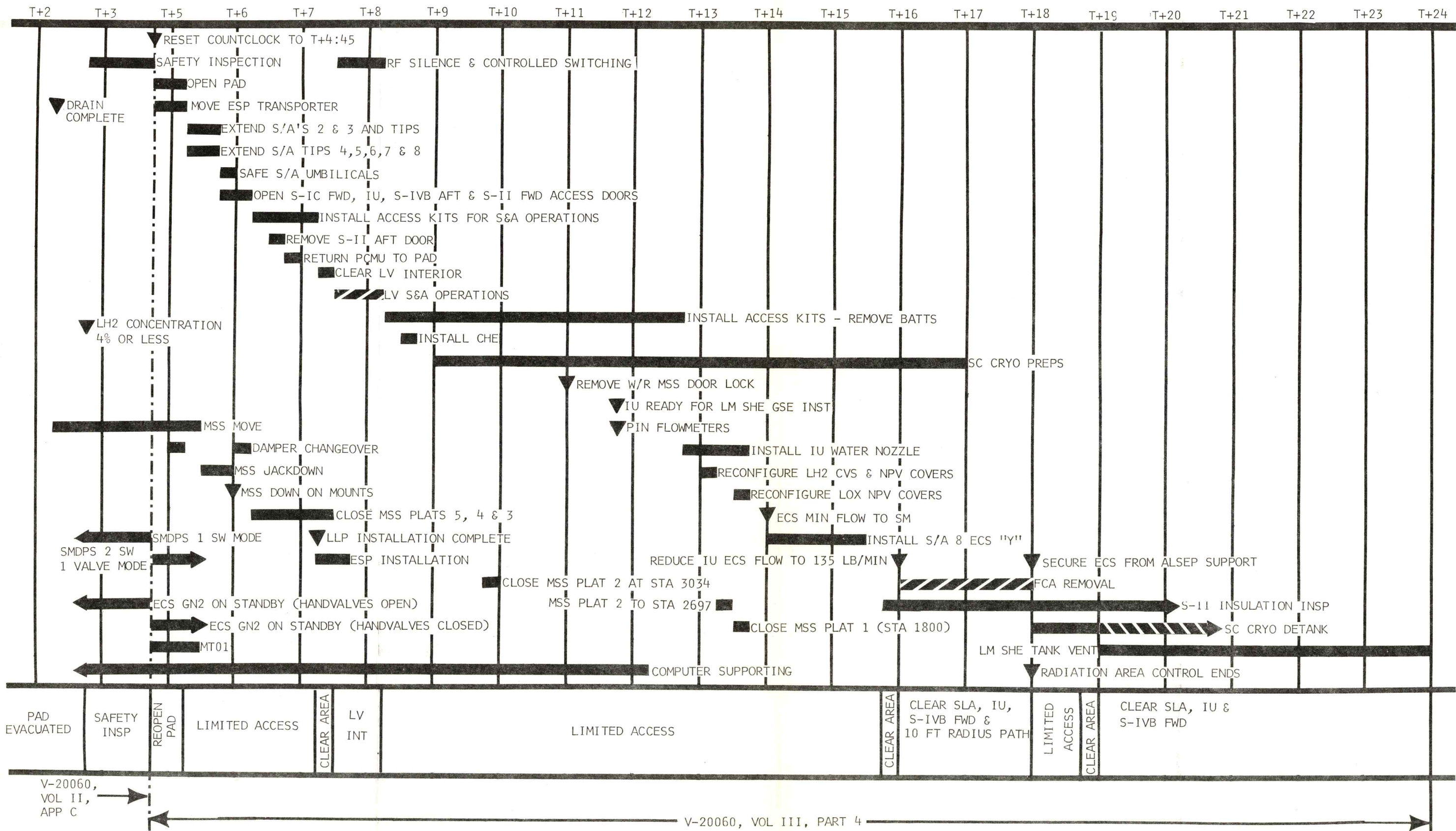


LV 3 DAY SCRUB TURNAROUND



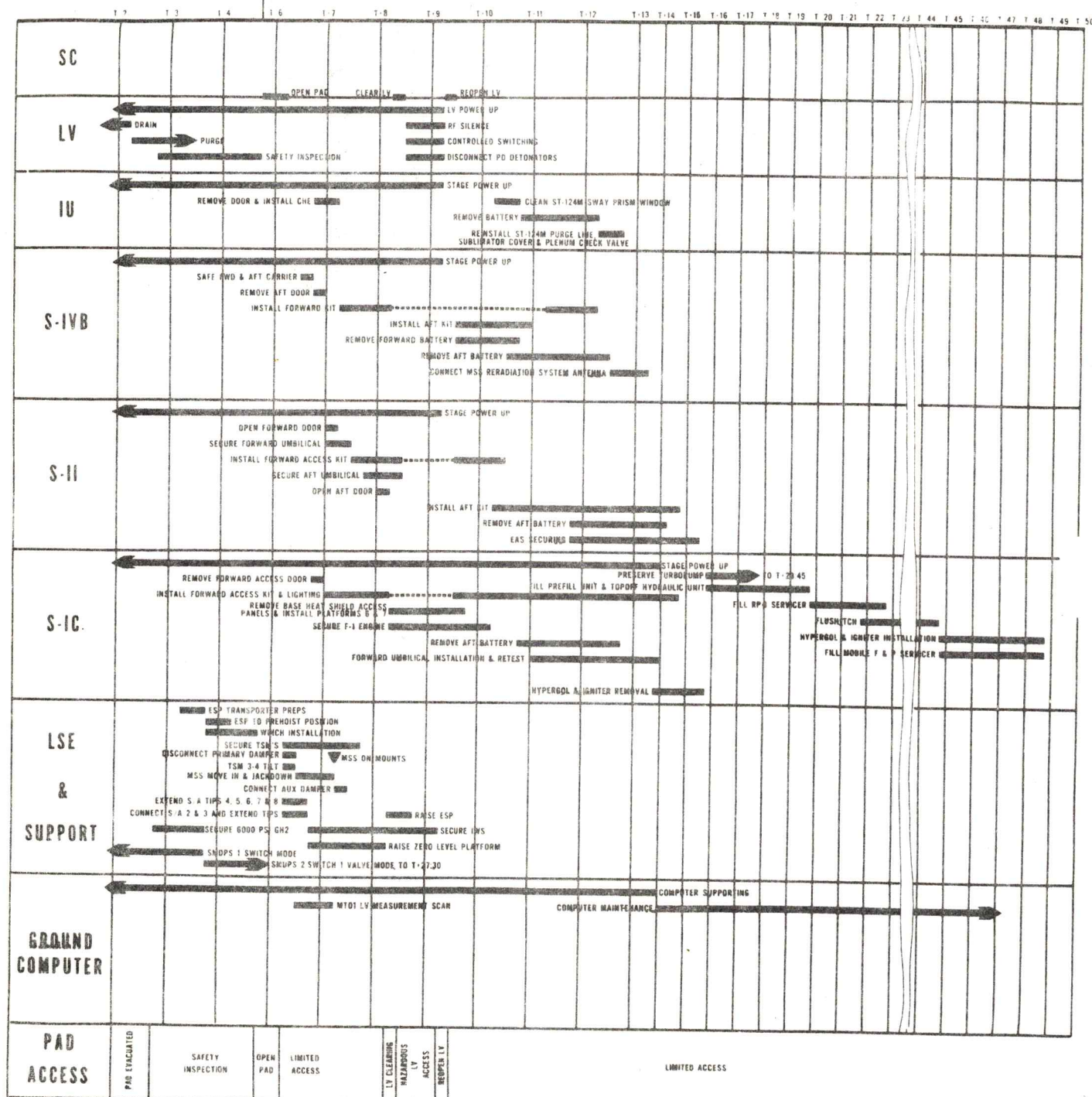
PART 4

INITIAL 24 HOUR LV SCRUB/RECYCLE OPERATIONS FOR 28 DAY TURNAROUND



POSTIGNITION SCRUB

RESET CLOCK
 TO T-5:45



LAUNCH PAD ACCESS CONTROL

DUE TO HAZARDS WHICH EXIST DURING THIS TEST, CONTROL OF PERSONNEL IN THE PAD AREA IS MANDATORY, THE FOLLOWING IS A SUMMARY OF SYSTEMS SAFETY ITEMS RELATING TO THE LAUNCH VEHICLE PORTION OF THE COUNTDOWN,

DEFINITION:

LAUNCH PAD:

THE AREA WITHIN THE SECURITY FENCE SURROUNDING THE LAUNCH SITE,

WARNING LIGHTS:

RED:

PAD CLOSED

CONDITION 1

THIS CONDITION EXISTS DURING EXTREMELY HAZARDOUS OPERATIONS, ACCESS TO THE PAD AREA DURING THIS PERIOD OF TIME SHALL BE PROHIBITED OR SHALL BE RIGIDLY CONTROLLED BY THE TEST SUPERVISOR AND SAFETY, ACCESS SHALL BE BY SPECIAL PERMISSION ONLY AND SAID NAME(S) SHALL BE ON AN ACCESS LIST;

FLASHING AMBER:

HAZARDOUS ACCESS

CONDITION 2

THIS CONDITION EXISTS DURING HAZARDOUS OPERATIONS ON THE PAD WHEN ONLY SPECIFIED TASKS MAY BE WORKED;

AMBER:

LIMITED ACCESS CONDITION 3

THIS CONDITION EXISTS DURING HAZARDOUS OPERATIONS IN THE PAD AREA WHEN ACCESS TO THE IMMEDIATE AREA NEEDS TO BE CONTROLLED; PERSONNEL ENTERING THE PAD AND/OR CONTROLLED ACCESS AREA MUST OBSERVE THE PRECAUTIONS ESTABLISHED FOR THE AREA,

GREEN:

PAD OPEN

CONDITION 4

THIS CONDITION EXISTS WHEN THE PAD AREA IS OPEN FOR NORMAL WORK, PAD ACCESS BADGES WILL BE REQUIRED AND PAD SECURITY WILL BE IN EFFECT,

CONTROLLED AREA RESTRICTIONS

PART 2 (2 DAY SCRUB TURNAROUND)

1. T+19:15 HRS TO T+21:45 HRS: THE LM DESCENT AREA INTERNAL TO SLA, IU AND S-IVB FORWARD AREAS WILL BE CLEARED FOR LM SHE VENT AND SHE RESERVICING,
2. T+23:15 HRS TO T+28:45 HRS: A RADIUS OF 1100 FEET AROUND THE SPACE VEHICLE (EXCEPT ML ROOMS 10 AND 15A) WILL BE CLEARED FOR CSM CRYO RESERVICING, XB=236-22
3. T+29:15 HRS TO T+31:15: THE PAD WILL BE CLEARED TO PERIMETER FENCE FOR CSM CRYO TANK PRESSURIZATION, XB=236-22

PART 3 (3 DAY SCRUB TURNAROUND)

1. T+7:30 HRS TO T+8:15 HRS: THE INTERIOR OF THE LAUNCH VEHICLE WILL BE CLEARED FOR DISCONNECTION OF PD DETONATORS,
2. T+18:45 HRS TO T+21:45 HRS: THE LM DESCENT AREA INTERNAL TO THE SLA, IU AND S-IVB FORWARD AREAS WILL BE CLEARED FOR LM SHE VENT AND SHE RESERVICING,
3. T+1 DAY 2:15 HRS TO T+1 DAY 10 HRS: A RADIUS OF 1100 FEET AROUND THE SPACE VEHICLE (EXCEPT ML ROOMS 10 AND 15A) WILL BE CLEARED FOR CSM CRYO RESERVICING,
4. T+1 DAY 10:30 HRS TO T+1 DAY 12 HRS: THE PAD WILL BE CLEARED TO PERIMETER FENCE FOR CSM CRYO TANK PRESSURIZATION,

PART 4 (SCRUB FOR 28 DAY TURNAROUND)

1. T+4:45 HRS TO T+18 HRS: ALSEP FCA RADIATION AREA CONTROL IN EFFECT
2. T+7:30 HRS TO T+8:15 HRS: THE INTERIOR OF THE SV (EXCEPT FOR CSM & S-IC BOATTAIL) WILL BE CLEARED FOR DISCONNECTION OF PD DETONATORS,
3. T+16 HRS TO T+18 HRS: THE SLA, IU, S-IVB FWD, S/A 7 AND A 10 FT PATHWAY DOWN THE MSS TO THE PAD APRON WILL BE CLEARED FOR ALSEP FCA REMOVAL
4. T+19 HRS TO T+24 HRS: THE AREA INTERNAL TO THE SLA, IU & S-IVB FWD WILL BE CLEARED FOR LM SHE VENT,

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
3 HRS 45: 0"					PART 1 ----- LV 24 HR SCRUB TO LAUNCH TURNAROUND ----- CONDITIONS: * S/A 2 HAS RETRACTED (T-16,2 SEC) * IGNITION HAS NOT OCCURRED (T-8,9 SEC) * LV DRAIN COMPLETE PER VOL II APP C * CSM HE VENTING NOT REQUIRED * SC CRYO RESERVICE NOT REQUIRED * ALL S/V ORDNANCE TO REMAIN CONNECTED * CSM FUEL CELLS TO REMAIN ACTIVATED * LV FLIGHT BATT REPLACEMENT NOT REQD * S-IVB ECS CHECKS NOT REQUIRED * ALSEP FCA REMOVAL NOT REQUIRED * IU ECS FLOW STAYS AT 200 LB/MIN * BACKUP DTS SUPPORTING ECS/ALSEP OPS * CCF SUPPORTING ECS/ALSEP OPS	
	111	1	CLTC	CVTS	LV IS STARTING TURNAROUND OPERATIONS, RESET COUNT CLOCK TO T+4 HRS 45 MIN AND CONTINUE COUNTING UP, REQUEST RANGE CLEARANCE FOR S-11 TM LINKS BF-1 & BF-2 (241,5 MHZ AND 234,0 MHZ),	TCPI

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
4 HRS 45:00						
188		1	CVTS	PA	THE CONTROL AREA IS OPEN FOR NORMAL WORK, RADIATION AREA CONTROL REMAINS IN EFFECT,	TCPI
121		2	CLTC	C1TC C2TC C4TC CUTC	START RECYCLE OPERATIONS,	
111		3	CVTS	CLTC	CHANGE SMDPS FROM 1 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE,	TCPI
121		4	CLTC	C1TC	CHANGE SMDPS FROM 1 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE,	
181		5	C1TC	CPDC	CHANGE SMDPS FROM 1 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE,	
181		6	C1TC	CECS	REPORT WHEN CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	
		6-1			*****WARNING***** * * ECS IS TO BE CONFIGURED * * FOR GN2 STANDBY WITH * * HANDVALVES CLOSED * * WHILE ALSEP IS * * INSTALLED IN VEHICLE, * * FOR FCA EMERGENCY, THE * * HANDVALVES WILL NOT BE * * OPENED UNTIL DIRECTED * * BY CVTS, * * *****	
181		7	CECS	C1TC	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	
		7-1			*****WARNING***** * * END OF ECS INERT * * ATMOSPHERE HAZARD, * * RESUME PREVIOUS HAZARD * * LEVEL, * * *****	

LV CDDT & CD, VOL III
 DATE: JANUARY 6, 1971
 REVISION 025

APOLLO/SATURN LAUNCH OPERATIONS

5251:60
 PAGE 17
 TEST NO. V-20060, PART 1
 VEHICLE AS-509

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
4 HRS 45: 0"						
121		8	C1TC	CLTC	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	
111		9	CLTC	CVTS	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	TCPI
121		10	CLTC	CLQS	START/VERIFY START OF LV-QAL INSPECTION OF MSS PLATFORMS 1 & 2 PER LV-QAL ICL-5 FOR MSS MOVE,	
261		11	CLTC	BOSC	VERIFY READY TO SUPPORT ESP TRANSPORTER MOVE,	TCPI
121		12	CLTC	C1TC	VERIFY ESP/LLP TRANSPORTER PREPS COMPLETE AND MOVE TRANSPORTER TO SERVICE POSITION,	
181		13	C1TC	CPDC	VERIFY ESP/LLP TRANSPORTER PREPS COMPLETE AND MOVE TRANSPORTER TO SERVICE POSITION PER V-36070, REPORT WHEN COMPLETE,	
261		14	CLTC	BOSC	REQUEST BCPN SWITCH TO CH 161 TO SUPPORT GH2 SYSTEM SECURING,	TCPI
161		15	C4TC	BOPN	START GH2 SYSTEM SECURING, REPORT WHEN READY TO SUPPORT S-IVB HEX GH2 INTERFACE PURGE,	TCPI
161		16	C4TC	C4PS	START HEX GH2 INTERFACE PURGE PER V-30539, SECT V,	XB- 240-23
181		17	C1TC	C1IP	CONFIGURE MEASUREMENT PANEL FOR MT01, REPORT WHEN COMPLETE,	TCPI XB- 240-23
						B- 300-25

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 4 HRS 45' 0"						
	161	18	C4TC	C4PS	VERIFY GH2 SYSTEM SECURED PER V-30539, SECT V,	
	151	19	CUTC	CUIP	MEASUREMENT TRANSFER AUTO, S-II BURN TEST & S-IVB COAST TEST - AUTO, (60X-607A6 - CCIS PANEL),	
	151	20	CUTC	BGCC	VERIFY/MOUNT MT01 TAPE,	
	121	21	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR MT01 (LV MEAS SCAN),	
	121	22	CLTC	C4IP	PRELAUNCH CHECKOUT GROUP - ON,	
	121	23	CLTC	CLIK	ISSUE S-IVB ALL RACS RUN,	
	121	24	CLTC	C2NP	RACS POWER - ON,	
	121	25	CLTC	B2TM	VERIFY ICE SETUP PER V-28181 (G125)	
	121	26	CLTC	BTMC	VERIFY READY TO SUPPORT TM TAPE RECORDING OF BF1 AND BF2,	
	121	27	CLTC	C2IP	RF COUPLER TO ANTENNA,	
	121	28	CLTC	BTMC	TM TAPE RECORDING ON,	
	121	29	CLTC	C2IP	FREQ MEAS CAL SWITCH ON,	
	121	30	CLTC	C2IP	F1, F2 TRANSMITTERS ON,	
	121	31	CLTC	CLIK	COMMAND RACS S-II ALL - ALL RUN,	
	188	32	CLTC	ALL	STAGE MEASUREMENTS WILL BE INTERRUPTED DURING MT01,	
	121	33	CLTC	CLIK	REQUEST & EXECUTE MT01 (LV MEAS SCAN),	
		33-1			DELETED	

B-
300-25

B-
300-25

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 4 HRS 45:00"		171	34	C2TC	C2PV CONTINUE PURGE VACUUM OPERATION PER V-26276 (G058);	
		181	35	C1TC	CCLH START LH2 STORAGE TANK SAMPLING AND FILL PER V-25034;	
		181	36	C1TC	CCLU START LOX STORAGE TANK SAMPLING AND FILL PER V-25329 AND V-25331;	
		181	37	C1TC	C1PE SECURE S-IC HYDRAULICS AFTER ENGINE WARMUP IS COMPLETE PER V-34012;	
		38		C2TC 02SE 02AM 02FM	*****WARNING***** * THE S-II FWD & AFT * * UMBILICALS ARE TO * * REMAIN ARMED THROUGH * * LAUNCH, NO PERSONNEL * * WILL BE ALLOWED ON THE * * TIPS OF S/AIS 4 & 5 OR * * ON THE S/A 3 UPPER TIP, * * *****	
* 5 HRS 01:00"		1			NOTE ----- FOR NEXT 15 MINUTES CSAD REQUIRES CONTROL OF TV CAMERAS 37 & 39	
		121	2	CLQS	CLTC LV-QAL INSPECTION OF MSS PLATFORMS 1 & 2 PER LV-QAL ICL-5 IS COMPLETE;	
		111	3	CLTC	CVTS VERIFY PREVAILING WINDS DO NOT EXCEED REDLINE VALUES FOR FREE STANDING S/V	TCP1
		3-1			NOTE ----- REDLINE WINDSPEED IS 39 KNOTS PEAK WINDS AT 530 FT ABOVE GROUND LEVEL. IF HIGHER WINDS PREDICTED, DAMPER SWITCHOVER MAY PROCEED ONLY IF BENDING MOMENT ASSESSMENT INDICATES SATISFACTORY CONDITIONS. (LO DIRECTOR'S CONCURRENCE WITH ASSESSMENT IS REQUIRED)	XB-239-27

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 5 HRS 01 00						
	121	4	CVTS	CLTC	CLEAR TO DISCONNECT AND RETRACT PRIMARY DAMPER,	TCPI
	161	5	C4TC	S4MM	VERIFY MSS PLATFORM MONITORS ON STATION,	
	121	6	CLTC	C1TC	DISCONNECT PRIMARY DAMPER & RETRACT TSM 3-4 TOWER,	
		7			*****WARNING***** * * THE FOLLOWING STEP IS * * HAZARDOUS DUE TO ARM * * MOTION, * * *****	
	181	8	C1TC	CSAD	DISCONNECT PRIMARY DAMPER PER V-36086, REPORT WHEN COMPLETE,	
	181	9	C1TC	LTSM	START TSM 3-4 PROTECTIVE TOWER RETRACTION PER V-36039, REPORT WHEN COMPLETE,	
* 5 HRS 151 00						
	181	1	C1TC	LTSM	VERIFY TSM 3-4 PROTECTIVE TOWER RETRACTED TO CLEAR MSS	
	181	2	C1TC	CSAD	VERIFY PRIMARY DAMPER RETRACTED AND LATCHED,	
	121	3	C1TC	CLTC	PRIMARY DAMPER IS DISCONNECTED & TSM TOWER RETRACTED,	
	181	4	C1TC	CPDC	DEACTIVATE THE FACILITY AIR STANDBY PANEL PER V-26222, REPORT WHEN COMPLETE,	
		5			*****WARNING***** * * THE FACILITY AIR SYSTEM * * HAS BEEN PURGED OF GN2 * * AND IS BACK IN NORMAL * * CONFIGURATION, RESUME * * PREVIOUS HAZARD LEVEL, * * *****	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 5 HRS 151 0"						
		171	6	C2PV	C2TC MSS PLATFORM 1 OBSERVERS ON STATION FOR MSS MOVE TO VEHICLE AND PLATFORM CLOSING	
		111	7	CLTC	CVTS REQUEST PEHE PERFORM SNIFFER CHECKS IN S-II APT & S-IC FWD AREAS WHEN ACCESS DOORS ARE OPENED,	TCP!
		121	8	CLTC	C2TC C4TC CUTC VERIFY READY FOR MSS MATE,	
		111	9	CLTC	CVTS PRIMARY DAMPER IS DISCONNECTED AND TSM TOWER RETRACTED, READY FOR MSS MATE,	TCP!
		121	10	CLTC	C1TC EXTEND S/AIS 2 & 3 AND EXTEND S/A TIPS 2, 3 (LOWER ONLY) & 6,	
		181	11	C1TC	CSAC EXTEND S/AIS 2 & 3 AND ALSO EXTEND TIPS 2, 3 (LOWER ONLY) & 6,	
		12			*****WARNING***** * * THE FOLLOWING STEP IS * * HAZARDOUS DUE TO ARM * * MOTION * * *****	
		181	13	CSAC	CSA2 CSA3 CSA6 EXTEND ARMS & ARM TIPS (S/A 3 - LOWER TIP ONLY) AND SECURE ARMS,	
		181	14	C1TC	LAS1 HDA EXPLOSIVE RELEASE #1 & #2 POWER MODULES OFF, REPORT WHEN COMPLETE,	
		181	15	C1TC	CHDA VERIFY HDA SECONDARY RELEASE POWER SUPPLY #1 AND #2 AVAILABLE OFF	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 5 HRS 30:00						
121		1	CVTS	CLTC	MSS IS OVER MOUNTS; REPORT WHEN TSM 3-4 TOWER IS ERECTED AND MSS CAN BE LOWERED.	TCP1
121		2	CLTC	C1TC	ERECT TSM 3-4 TOWER, REPORT WHEN COMPLETE.	
181		3	C1TC	LTSM	ERECT TSM 3-4 TOWER PER V-36039, REPORT WHEN ERECTED.	
111		4	CLTC	CVTS	TSM 3-4 TOWER ERECTED AND CLEAR FOR LOWERING MSS ON MOUNTS; NOTIFY CLTC IF MSS MUST BE REPOSITIONED PRIOR TO LOWERING.	TCP1
121		5	CLIK	CLTC	LV MT01 IS COMPLETE.	
121		6	CLTC	C1TC C2TC C4TC CUTC	MT01 IS COMPLETE.	
181		7	C1TC	C1IP	MT01 IS COMPLETE; CONFIGURE MEASUREMENT PANEL FOR NORMAL OPERATIONS.	B- 300-25
121		8	CLTC	BTMC	IM TAPE RECORDING OFF.	
121		9	CLTC	C2NP	RACS POWER OFF.	
121		10	CLTC	C2IP	F1, F2 TRANSMITTERS OFF.	
121		11	CLTC	C2IP	RF COUPLER TO AUTO.	
121		12	CLTC	C2IP	FREQ MEAS CAL SWITCH OFF.	
151		13	CUTC	CUIP	MEASUREMENT TRANSFER - OFF, S-II BURN TEST & S-IVB COAST TEST - OFF, (60X-607A6 - CCIS PANEL).	
181		14	C1TC	OSAC	VERIFY S/A 6 TIP EXTENDED.	
121		15	C1TC	CLTC	S/A 6 TIP HAS BEEN EXTENDED.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 5 HRS 30' 0"						
	121	16	CLTC	C4TC	S/A 6 TIP IS EXTENDED, CLEAR FOR CARRIER SECURING,	
	161	17	C4TC	S4MA	SAFE AFT CARRIER PER V-30539, SECT V, REPORT WHEN COMPLETE,	
	161	18	C4TC	C4IP	PRELAUNCH CHECKOUT GROUP OFF	
	111	19	CLTC	CVTS	RANGE CLEARANCE FOR S-II TM NO LONGER REQUIRED,	TCPI
* 5 HRS 45' 0"						
	181	1	C1TC	CSAC	VERIFY S/A 2 & 3 EXTENDED AND S/A 2 & 3 (LOWER ONLY) TIPS EXTENDED,	
	121	2	C1TC	CLTC	S/A 2 & 3 (LOWER ONLY) TIPS HAVE BEEN EXTENDED,	
	121	3	CLTC	C1TC	CLEAR FOR OPENING S-IC FWD ACCESS DOOR,	
	121	4	CLTC	C2TC	S/A 3 LOWER TIP CLEAR FOR OPENING OF S-II AFT ACCESS DOOR,	
	171	5	C2TC	U2SE U2SI	S/A 3 LOWER TIP IS EXTENDED, U2SI OPEN S-II AFT ACCESS DOOR, U2SY START SNIFFER CHECKS WHEN DOOR IS OPEN,	
	181	6	C1TC	C1PE	START REMOVAL OF S-IC FWD ACCESS DOOR, START SNIFFER CHECKS WHEN DOOR IS OPEN, REPORT WHEN COMPLETE,	
	181	7	C1TC	C1PE	START S-IC FWD UMBILICAL RECONNECT PER V-24320,	
	121	8	CLTC	C4TC	START S-IVB TANK SAMPLING,	
	161	9	C4TC	S4PC C4PS	START S-IVB TANK SAMPLING PER V-30539, SECT V,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
6 HRS 01 00	121	1	CVTS	CLTC	MSS IS ON MOUNTS READY FOR AUX DAMPER CONNECTION;	TCPI
		1-1			NOTE ---- FOR THE NEXT 15 MINUTES CSAD REQUIRES CONTROL OF CAMERA 37,	
	121	2	CLTC	C1TC	CONNECT AUX DAMPER;	
	181	3	C1TC	CSAD	CONNECT AUX DAMPER PER V-36086, REPORT WHEN COMPLETE;	
	121	4	O2TC	CLTC	REQUEST MSS PLATFORM 1 BE POSITIONED AT LV STA 1800 FOR S-II INSULATION INSPECTION;	
	111	5	CLTC	CVTS	REQUEST MSS PLATFORM 1 BE POSITIONED AT LV STA 1800 FOR S-II INSULATION INSPECTION;	TCPI
	181	6	C1TC	C1PE	VERIFY S-1C FWD ACCESS DOOR REMOVAL AND SNIFFER CHECKS ARE COMPLETE;	
	111	7	CLTC	CVTS	VERIFY CPSS HAS APPROVED LV ACCESS THROUGH S/A 2 (S-1C FWD)	TCPI
	121	8	C1TC	CLTC	S-1C FWD ACCESS DOOR IS OPEN AND SNIFFER CHECKS HAVE BEEN ACCOMPLISHED;	
	181	9	C1TC	C1PE	START FORWARD SKIRT WORK PLATFORM INSTALLATION AND LOX TANK BULKHEAD COVER INSTALLATION AS REQUIRED TO SUPPORT SCRUB OPERATIONS;	
6 HRS 101 00	111	1	CLTC	CVTS	VERIFY CPSS HAS APPROVED LV ACCESS THROUGH S/A 3 DOOR; (S-II AFT);	TCPI

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 6 HRS 10' 0"						
	171	2	U2SE	C2TC	S-II AFT ACCESS DOOR IS OPEN AND SNIFFER CHECKS HAVE BEEN ACCOMPLISHED,	
	121	3	C2TC	CLTC	S-II AFT ACCESS DOOR IS OPEN AND SNIFFER CHECKS HAVE BEEN ACCOMPLISHED,	
* 6 HRS 15' 0"						
	121	1	CVTS	CLTC	MSS PLATFORM 1 IS AVAILABLE FOR JOINT ACCESS	TCPI
		1-1		CLTC	*** NOTE SUPPORT WILL BE INSTALLING ANNULUS RINGS AND HANDRAILS IN CONJUNCTION WITH S-II INSULATION INSPECTION,	
	121	2	CLTC	C2TC	MSS PLATFORM 1 IS AVAILABLE FOR S-II STAGE INSULATION INSPECTION,	
	171	3	C2TC	C2PV	START S-II INSULATION INSPECTION UTILIZING MSS PLATFORM 1	
	121	4	CVTS	CLTC	STANDBY FOR OIS TRANSFER FROM CRAWLER TRANSPORTER TO PAD,	TCPI
	121	5	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR OIS CONNECT TO PAD,	
	121	6	C1TC	CLTC	AUX DAMPER IS CONNECTED,	
	111	7	CLTC	CVTS	AUX DAMPER IS CONNECTED,	TCPI
	181	8	C1TC	CSAC	SECURE THE Q-BALL COVER RETRACT SYSTEM PER THE WET CDDT SECURING STEPS IN V-36112, REPORT WHEN COMPLETE,	
		8-1			NOTE ----- IF IT IS REQUIRED TO CLOSE MSS PLATFORM 5 AT ANY TIME, CSAC WILL HAVE TO DISCONNECT THE Q-BALL COVER RETRACT CABLE PER V-36112,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
6 HRS 15: 0"	261	9	C2TC	BOSC	S-II WILL BE READY FOR LH TANK H2 CONTENT GHE SAMPLES (2 EACH) ON S/A 5 AND LUT 180 FT LEVEL AND A7-71 LH HEAT EXCHANGER H2 CONTENT GHE SAMPLES (2 EACH) ON LUT 180 FT LEVEL IN 30 MINUTES (LVN-8, LVN-15),	TCPI XB- 240-23
6 HRS 30: 0"	171	1	C2TC	U2SI	START INSTALLATION OF AFT ACCESS KIT PER V-26489 (G138) AS REQUIRED FOR VACUUM JACKETED LINE PRESSURE CHECKS,	
	121	2	CVTS	CLTC	MSS OIS CONNECTED TO PAD,	TCPI
7 HRS 15: 0"	181	1	C1TC	C1PE	VERIFY S-1C BULKHEAD PROTECTIVE EQUIPMENT INSTALLATION IS COMPLETE,	
	181	2	C1TC	C1PE	VERIFY COMPLETION OF FORWARD ACCESS KIT INSTALLATION REQUIRED TO SUPPORT SCRUB OPERATIONS,	
	171	3	C2TC	C2SP	START A7-71 VACUUM CHECK PER V-30029 (M020) TASK 53, REPORT WHEN COMPLETE,	
	171	4	C2TC	C2GP	START CLOSEOUT OF LUT LEVEL 180 PER V-30029 (M020) TASK 64,	
	171	5	C2TC	C2GP	START FINAL GROUND PNEUMATICS SYSTEM INSPECTION AND WALKAROUND PER V-30029 (M020) TASK 31, REPORT WHEN COMPLETE,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 7 HRS 30' 0"						
	171	1	U2SI	C2TC	AFT ACCESS KIT INSTALLATION COMPLETE.	
	171	2	C2TC	U2J2	START VACUUM JACKETED LINE PRESSURE CHECKS PER V-24116 (J001).	
* 7 HRS 45' 0"						
	161	1	C4TC	C4PU	PU OVEN AND INVERTER POWER ON THEN AUTO.	
	161	2	C4TC	C4PS	VERIFY S-IVB TANK SAMPLING IS COMPLETE.	
	171	3	C2SP	C2TC	A7-71 VACUUM CHECKS ARE COMPLETE.	
* 8 HRS 30' 0"						
	171	1	U2J2	C2TC	VACUUM JACKETED LINE PRESSURE CHECKS COMPLETE.	
	121	2	C2TC	CLTC	VACUUM JACKETED LINE PRESSURE CHECKS COMPLETE.	
	171	3	C2TC	U2SI	START REMOVAL OF AFT ACCESS KIT PER V-26008 (G042).	
	161	4	C4TC	C4ES	START S-IVB PU QUICK LOOKS.	
	161	5	C4ES	C4NK	REQUEST & EXECUTE XAPU.	
	181	6	C1TC	BRFS	DRSCS LCC & ML GSE POWER-ON	
* 8 HRS 55' 0"						
	121	1	CVTS	CLTC	GMIL BRINGING UP S/V S-BAND & UHF CARRIERS FOR ON STATION CALIBRATION FOLLOWED BY MCC COMMAND VALIDATION AND AIR/GROUND VALIDATION TESTING. VERIFY COMMAND DECODERS ARE OFF.	TCPI

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 9 HRS 01 00	181	1	C1TC	C1NE C1PE	VERIFY S-1C FORWARD UMBILICAL INSTALLATION COMPLETE,	
	261	2	CLTC	BOSC	ACTIVATE 6000 PSI GH2 SUPPLY,	TCPI
+ 9 HRS 15 00	181	1	C1TC	C1PE	REMOVE PORTION OF FORWARD ACCESS KIT INSTALLED TO SUPPORT SCRUB OPERATIONS,	
+ 9 HRS 30 00	161	1	C4TC	C4ES	VERIFY S-1VB PU QUICK LOOK COMPLETE,	
	121	2	C4TC	CLTC	XAPU (S-1VB PU CHECKS) COMPLETE,	
	161	3	C4TC	S4MA	START AFT CARRIER MECH PREPS PER V-30539, SECT N,	
		4			DELETED	B- 300-25
		5			DELETED	B- 300-25
		6			DELETED	B- 300-25
		7			DELETED	B- 300-25
	171	8	U2SI	C2TC	REMOVAL OF AFT ACCESS KIT COMPLETE,	
	171	9	C2TC	U2SE	VERIFY AFT INTERSTAGE READY FOR CLOSEOUT	
	171	10	C2TC	U2SI	SECURE S-11 AFT DOOR,	
	181	11	C1TC	BRFS	START DRSCS GSE PREPS PER V-38000 SECT 14, REPORT WHEN COMPLETE,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
9 HRS 45: 0"						
121		1	CVTS	CLTC	MSS PLATFORM OBSERVERS ARE TO REPORT TO PVTs AT THE BASE OF THE MSS LOW RISE ELEVATOR FOR BRIEFING IN 45 MINUTES,	TCPI
		1-1		CLTC	*** NOTE THE POSITION OF PLATFORM 1 WILL DETERMINE WHICH STAGE (S-1C OR S-1I) PROVIDES OBSERVERS,	
121		2	CLTC	C1TC C2TC C4TC CUTC	MSS PLATFORM OBSERVERS ARE TO REPORT TO PVTs AT THE BASE OF THE MSS LOW RISE ELEVATOR FOR BRIEFING IN 45 MINUTES,	
161		3	C4TC	S4MA	VERIFY READY TO RETRACT S/A 6 TIP,	
121		4	C4TC	C1TC	READY FOR S/A 6 TIP RETRACTION,	
181		5	C1TC	CSAC	RETRACT EXTENSION PLATFORM AND CLOSE SAFETY GATE FOR S/A 6,	
118		6	CSAC	CSA6	START FINAL TOWER PREPS PER V-36082,	
		7			DELETED	B- 300-25
		8			DELETED	B- 300-25
		9			DELETED	B- 300-25
		10			DELETED	B- 300-25
171		11	U2S1	C2TC	S-1I AFT DOOR SECURED,	
171		12	C2TC	U2SE	VERIFY READY FOR S/A 3 RETRACTION,	
121		13	C2TC	C1TC	READY FOR S/A 3 RETRACTION,	
		14			*****WARNING***** * * THE FOLLOWING STEP IS * * HAZARDOUS DUE TO ARM * * MOTION, * * *****	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 9 HRS 45' 0"	181	15	C1TC	CSAC	COMPLETE S/A 3 FINAL PREPS AND RETRACT ARM PER V-36032,	
	181	16	C1TC	B1RE	START DRSCS RF AND AUDIO LINE RETEST PER V-21035, REPORT WHEN COMPLETE,	B- 299-24
* 10 HRS 0' 0"	171	1	C2TC	C2PV	START CLOSEOUT OF MSS PLATFORM 1, REPORT WHEN COMPLETE,	
	171	1	C2PV	C2TC	INSULATION INSPECTION AND MSS PLATFORM CLOSEOUT IS COMPLETE,	
* 10 HRS 15' 0"	121	2	C2TC	CLTC	MSS PLATFORM 1 CLOSED OUT	
	111	3	CLTC	CVTS	MSS PLATFORM 1 AVAILABLE FOR OPENING,	TCPI
	121	4	CVTS	CLTC	STARTING MSS OIS TRANSFER FROM PAD HARDLINE TO CRAWLER TRANSPORTER UHF, CRAWLER TRANSPORTER OIS CHANNEL ASSIGNMENTS ARE IN EFFECT,	TCPI
	181	5	C1TC	CSAC	VERIFY S/A 3 RETRACTION COMPLETE,	
	181	6	C1TC	CSAC	PRESSURIZE S/A 2,	
		7			*****WARNING***** * * THE FOLLOWING STEP IS * * HAZARDOUS DUE TO HIGH * * PRESSURE PNEUMATIC AND * * HYDRAULIC UTILIZATION, * * *****	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
*10 HRS 15' 0"						
181		8	CSAC	CSA2	PRESSURIZE S/A 2 PER V-36078,	
171		9	C2TC	C2SP	START ULLAGE PRESSURE SWITCH (CALIPS) VERIFICATION PER V-30029 (M020) TASK 86 AFTER FORWARD AND AFT ACCESS DOORS ARE SECURED, REPORT WHEN COMPLETE,	
*10 HRS 30' 0"						
181		1	C1TC	C1PE	VERIFY FORWARD SKIRT BULKHEAD PROTECTION AND INTERNAL ACCESS EQUIPMENT REMOVED,	
181		2	C1TC	C1PE C1NE	VERIFY S-1C FORWARD SKIRT AREA READY FOR FINAL CLOSURE,	
121		3	CVTS	CLTC	MSS OIS TRANSFER FROM PAD TO CRAWLER TRANSPORTER IS COMPLETE,	TCPI
121		4	C4TC	CLTC	KSC SYSTEMS SAFETY SUPPORT WILL BE REQUIRED IN 30 MINUTES ON LUT LEVEL 240 FOR GH2 SNIFFER CHECKS,	
111		5	CLTC	CVTS	KSC SYSTEMS SAFETY SUPPORT WILL BE REQUIRED IN 30 MINUTES ON LUT LEVEL 240 FOR GH2 SNIFFER CHECKS,	TCPI
181		6	C1TC	C1PE	INSTALL AND SECURE S-1C FWD ACCESS DOOR, REMOVE BLOCKS FROM FORWARD CARRIER, REPORT WHEN COMPLETE,	
181		7	C1TC	BRFS	VERIFY READY FOR RANGE SUPPORT OF DRSCS PREPS	
121		8	C1TC	CLTC	READY FOR RANGE SUPPORT OF DRSCS PREPS	
111		9	CLTC	CVTS	REQUEST RANGE SUPPORT DRSCS PREPS ON CH 137 PER V-38000	TCPI
121		10	CVTS	CLTC	A HOLD OF 12 HRS --MINUTES WILL START AT T+ 12 HRS 30 MINUTES WITH THE CLOCK RESET AND HOLDING AT T-9 HRS,	TCPI

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
*10 HRS 30' 0"		10-1		CLTC	*** NOTE CVTS WILL NOTIFY CLTC OF CHANGE IN HOLD TIME IN EXCESS OF 15 MINUTES DURATION,	
	121	11	CLTC	C1TC C2TC C4TC CUTC	A HOLD OF -HRS --MINUTES WILL START AT T+ 12 HRS 30 MINUTES WITH THE CLOCK RESET AND HOLDING AT T-9 HRS,	TCPI
*10 HRS 45' 0"						
	171	1	C2TC	C2PV	VERIFY MSS PLATFORM OBSERVERS ON STATION FOR PLATFORM OPENING AND MSS MOVE FROM VEHICLE,	
	121	2	CLTC	C1TC C2TC C4TC CUTC	VERIFY LV OBSERVERS ARE ON STATION FOR MSS MOVE,	
	121	3	CVTS	CLTC	VERIFY READY FOR MSS POWER TRANSFER FROM PAD TO CRAWLER TRANSPORTER,	TCPI
	181	4	C1TC	C1PE	VERIFY READY FOR S/A 2 TIP RETRACTION,	
	181	5	C1TC	CSAC	RETRACT S/A 2 TIP AND CLOSE SAFETY GATE,	
		6			*****WARNING***** * * THE FOLLOWING STEP IS * * HAZARDOUS DUE TO ARM * * MOTION, * * *****	
	118	7	CSAC	CSA2	START FINAL TOWER PREPS PER V-36078,	
	121	8	CLTC	CLQS	START/VERIFY START OF LV-QAL INSPECTION OF MSS PLATFORMS 1 & 2 PER LV-QAL ICL-5 FOR MSS MOVE,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
*10 HRS 45' 0"	121	9	C1TC	CSAC	VERIFY OR PERFORM THE OPERATING STEPS (WET CDDT ONLY) PER V-33112 AS REQUIRED TO SUPPORT MSS MOVE, REPORT WHEN COMPLETE.	
*11 HRS 0' 0"	161	1	CSAC	C1TC	S/A 2 TIP RETRACTED AND SECURED FOR LAUNCH.	
	171	2	C2GP	C2TC	CLOSEOUT OF LUT LEVEL 180 PER V-30029 (M020) TASK 64 IS COMPLETE.	
	171	3	C2SP	C2TC	ULLAGE PRESSURE SWITCH (CALIPS) CHECKOUT IS COMPLETE.	
	121	4	BOSC	CLTC	6000 PSI GH2 SUPPLY ACTIVATED.	TCPI
	121	5	CLTC	C2TC C4TC	6000 PSI GH2 SUPPLY ACTIVATED.	
	171	6	C2TC	C2GP	START GH2 PREPS PER V-30029 (M020) TASK 27, REPORT WHEN COMPLETE.	
	161	7	C4TC	C4PS	START GH2 PREPS PER V-30539, SECT K,	
	161	8	C4TC	S4SY	STANDBY ON LUT 240 FT LEVEL TO PERFORM GH2 SNIFFER CHECKS.	
*11 HRS 5' 0"		1			NOTE ----- FOR THE NEXT 15 MINUTES CSAD REQUIRES CONTROL OF TV CAMERA 37.	
	121	2	CVTS	CLTC	CLEAR TO DISCONNECT AUX DAMPER	TCPI
	121	3	CLTC	C1TC	DISCONNECT AUX DAMPER.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
11 HRS 51 0"	181	4	C1TC	CSAC	DISCONNECT AUX DAMPER, REPORT WHEN COMPLETE,	
	118	5	CSAC	CSAD	DISCONNECT AUX DAMPER PER V-36086, REPORT WHEN COMPLETE,	
11 HRS 151 0"	121	1	CVTS	CLTC	MSS PLATFORM 1 IS OPEN AND SECURE,	TCPI
	121	2	C1TC	CLTC	AUX DAMPER DISCONNECT COMPLETE,	
	121	3	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR MSS JACKING,	
	121	4	CLQS	CLTC	LV-QAL INSPECTION OF MSS PLATFORMS 1 & 2 PER LV-QAL ICL-5 IS COMPLETE,	
	111	5	CLTC	CVTS	LV-QAL INSPECTION OF MSS PLATFORMS 1 & 2 PER LV-QAL ICL-5 IS COMPLETE, AUX DAMPER IS DISCONNECTED AND LV READY FOR MSS JACKING BUT NOT FOR MOVE,	TCPI
	181	6	C1TC	CTS1	START TSM 3-4 PROTECTIVE HOOD TOWER RETRACTION PER V-36039 AFTER MSS JACKING HAS PROVIDED ADEQUATE CLEARANCE,	
	121	7	C1TC	CLTC	VERIFY BOSC IS READY TO SUPPORT ESP TRANSPORTER MOVE,	
	261	8	CLTC	BOSC	VERIFY READY TO SUPPORT ESP TRANSPORTER MOVE,	TCPI
		9			*****WARNING***** * * THE FACILITY AIR SYSTEM * * WILL BE CHARGED WITH * * GN2, PERSONNEL SHOULD * * AVOID USE OF AIR TOOLS * * INSIDE ENCLOSED AREAS, * * *****	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
*11 HRS 15' 0"						
	181	10	C1TC	CPDC	ACTIVATE FACILITY AIR STANDBY PANEL PER V-26222, REPORT WHEN COMPLETE,	
	181	11	C1TC	CSPP	REAPPLY 43D100 & 43D200 FIRING SYSTEM POWER AND START BATTERY SWITCHOVER TEST PER V-21194, REPORT WHEN COMPLETE,	
	181	12	C1TC	LAS1	HDA EXPLOSIVE RELEASE #1 & #2 POWER MODULES ON, REPORT WHEN COMPLETE,	
	181	13	C1TC	CHDA	VERIFY HDA SECONDARY RELEASE SYSTEM READY FOR LAUNCH,	
*11 HRS 20' 0"						
	121	1	CVTS	CLTC	GMIL ON-STATION, MCC COMMAND VALIDATION AND AIR/GROUND TESTING IS COMPLETE, GMIL S-BAND & UHF CARRIERS ARE OFF,	TCPI
*11 HRS 45' 0"						
	121	1	CVTS	CLTC	MSS JACKING COMPLETE,	TCPI
	181	2	CTS1	C1TC	ISM PROTECTIVE TOWER CLEAR FOR MSS MOVE,	
	121	3	C1TC	CLTC	ISM TOWER CLEAR FOR MSS MOVE,	
	121	4	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR MSS MOVE,	
	111	5	CLTC	CVTS	LV CLEAR FOR MSS MOVE,	TCPI
	121	6	CVTS	CLTC	MSS IN MOTION	TCPI

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
*11 HRS 50: 0"		1			NOTE ----- FOR THE NEXT 5 MINUTES CSAD REQUIRES CONTROL OF TV CAMERAS 27 & AA3 OR AA4,	
	121	2	CVTS	CLTC	READY FOR PRIMARY DAMPER CONNECTION,	TCPI
	121	3	CLTC	C1TC	CONNECT PRIMARY DAMPER,	
	181	4	C1TC	CSAC	CONNECT PRIMARY DAMPER, REPORT WHEN COMPLETE,	
		5			*****WARNING***** * * THE FOLLOWING STEP IS * * HAZARDOUS DUE TO ARM * * MOTION, * * *****	
	118	6	CSAC	CSAD	CONNECT PRIMARY DAMPER PER V-36096, REPORT WHEN COMPLETE,	
	188	7	CSAD	PA	PRIMARY DAMPER WILL BE CONNECTED AT THIS TIME, VEHICLE MOTION AND GAS VENTING WILL OCCUR,	
	181	8	C1TC	CTS1	ERECT TSM 3-4 PROTECTIVE TOWER PER V-36039, REPORT WHEN COMPLETE,	
	121	9	CLTC	C1TC	MOVE ESP/LLP TRANSPORTER TO LAUNCH POSITION,	
	181	10	C1TC	CPDC	MOVE ESP/LLP TRANSPORTER TO LAUNCH POSITION AND SECURE FOR LAUNCH PER V-36070,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
*11 HRS 55' 0"						
	121	1	C1TC	CLTC	PRIMARY DAMPER CONNECTED;	
	111	2	CLTC	CVTS	PRIMARY DAMPER ARM CONNECTION COMPLETE;	TCP1
	181	3	C1TC	CPDC	DEACTIVATE FACILITY AIR STANDBY PANEL PER V-26222 (IF HOLD AT T-9 HRS WILL EXCEED 1 HOUR)	
		4			*****WARNING***** * * THE FACILITY AIR SYSTEM * * HAS BEEN PURGED OF GN2 * * AND IS BACK IN NORMAL * * CONFIGURATION; RESUME * * PREVIOUS HAZARD LEVEL, * * *****	
*12 HRS 0' 0"						
	121	1	CVTS	CLTC	CSM CCS SWITCH IN BLOCK POSITION FOR FT47 AT T-7 HOURS 13 MIN;	TCP1
	171	2	C2TC	C2GP C2SP	START FINAL PANEL STATUS CHECKS PER V-30029 (M020) TASK 32, REPORT WHEN COMPLETE;	
	181	3	CSAC	C1TC	Q-BALL COVER RETRACT SYSTEM IS READY;	
*12 HRS 15' 0"						
	171	1	C2GP	C2TC	GH2 PREPS ARE COMPLETE;	
	171	2	C2GP	C2TC	PNEUMATIC SYSTEM WALKAROUND AND FINAL PANEL STATUS CHECKS ARE COMPLETE;	
	171	3	C2SP	C2TC	FINAL PANEL STATUS CHECKS ARE COMPLETE;	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
*12 HRS 30' 0"						
	111	1	CLTC	CVTS	LV HAS COMPLETED TURNAROUND OPERATIONS; RESET COUNTCLOCK TO T-9 HRS AND HOLD AS REQUIRED TO SYNCHRONIZE COUNTCLOCK WITH LAUNCH WINDOW.	TCPI
HOLDING 9 HRS 0' 0"						
					--- STARTING SCHEDULED HOLD ---	
	262	1	CLTC	BTIS	VERIFY REGULAR CAMERAS OPERATIONAL AND HAVE BPHO SWITCH TO CH 181 TO SUPPORT PROPELLANT LOADING.	TCPI
	121	2	CLTC	CGIC	VERIFY TV CAMERAS ORIENTED FOR VEHICLE LOADING OPERATIONS.	TCPI
		3			NOTE ----- ALL LV OPERATORS ARE REQUIRED TO CHECK THEIR PROCEDURES (VOLUME II) DURING THE HOLD TO VERIFY THAT ALL PCRS FROM T-8159 HRS THROUGH LV SAFING HAVE BEEN INCORPORATED.	
HOLDING 9 HRS 0' 0"						
					--- ONE HOUR PRIOR TO RESUMING COUNT ---	
	121	1	CLTC	C1TC C2TC C4TC CUTC	VERIFY PCR VERIFICATION COMPLETE.	
	188	2	CLTC	ALL	TSM SAFETY CABLES WILL BE REMOVED AT THIS TIME. PERSONNEL USE EXTREME CAUTION IN AREA OF HDA'S AND TSM'S.	
	121	3	CLTC	C1TC	REMOVE TSM SAFETY CABLES.	
	181	4	C1TC	CTS1	REMOVE TSM SAFETY CABLES. REPORT WHEN COMPLETE.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING 9 HRS 01 0"	121	1	CLTC	C1TC C2TC C4TC CUTC	---45 MINUTES PRIOR TO RESUMING COUNT---	
					VERIFY ALL COMPARTMENTS CLOSED OUT AND READY TO SWITCH ECS FROM AIR TO GN2,	
		2	CLTC	CVTS	ALL LV COMPARTMENTS CLOSED OUT AND READY TO SWITCH ECS FROM AIR TO GN2,	TCPI
HOLDING 9 HRS 01 0"	121	1	CUTC	CLTC	---40 MINUTES PRIOR TO RESUMING COUNT---	
					REQUEST CLEARANCE TO PRESSURIZE ST-124M SUPPLY SPHERE TO FLIGHT PRESSURE (3000 PSI),	
		2	CUTC	CUCP	PRESSURIZE ST-124M SUPPLY SPHERE TO 3000 PSI PER V-31062; REPORT WHEN SYSTEM STABILIZED,	
HOLDING 9 HRS 01 0"	151	2=1			*****CAUTION***** * * IU STAGE ST-124M SUPPLY * * SPHERE WILL BE * * PRESSURIZED TO 3000 PSI * * *****	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING 9 HRS 01 00					---30 MINUTES PRIOR TO RESUMING COUNT---	
	111	1	CLTC	CVTS	REQUEST CPSS VERIFY CLEARANCE TO SWITCH ECS TO GN2,	TCP
	121	2	CLTC	C1TC	CONFIGURE ECS FOR STANDBY GN2	
	181	3	C1TC	CECS	START ECS PREPS FOR LOADING PER V-36074 PART B,	
		4			*****WARNING***** * * THE FOLLOWING STEP IS * * HAZARDOUS, * * *****	
	181	5	C1TC	C1PE	APPLY S-1C HYDRAULICS PER V-34012, REPORT WHEN COMPLETE,	
HOLDING 9 HRS 01 00	121	6	CVTS	CLTC	VERIFY FINAL PURGE BOX VALIDATION	TCP
					---20 MINUTES PRIOR TO RESUMING COUNT---	
	121	1	CLTC	C1TC	SWITCH ECS TO GN2	
		2			*****WARNING***** * * AN INERT ATMOSPHERE * * HAZARD WILL EXIST IN * * THE ECS ROOM AND ALL * * S/V COMPARTMENTS, * * EXCEPT THE CM, WHILE * * THE ECS PURGE GN2 HAND * * VALVES ARE OPEN, * * *****	
	181	3	C1TC	CECS	SWITCH ECS TO GN2 PER V-36074 PART C,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING 7 9 HRS 01 0"					---20 MINUTES PRIOR TO RESUMING COUNT--- *****WARNING***** * THE FACILITY AIR SYSTEM * * WILL BE CHARGED WITH * * GN2, PERSONNEL SHOULD * * AVOID USE OF AIR TOOLS * * INSIDE ENCLOSED AREAS, * *****	
	181	5	C1TC	CPDC	ACTIVATE FACILITY AIR STANDBY PANEL PER V-26222	
HOLDING 7 9 HRS 01 0"					---10 MINUTES PRIOR TO RESUMING COUNT---	
	121	1	CLTC	CLCP	REQUEST & EXECUTE NU10, REPORT WHEN COMPLETE,	
	181	2	C1TC	CTS1	VERIFY TSM FINAL PREPS ARE COMPLETE AND TSM PERSONNEL CLEAR OF PAD,	
	181	3	C1TC	CWCP	VERIFY INDUSTRIAL WATER SYSTEM LAUNCH PREPS COMPLETED,	
	181	4	C1TC	C1PE	VERIFY S-1C MECHANICAL PREPS COMPLETED AND PERSONNEL CLEARING PAD,	
	181	5	C1TC	CCLH	VERIFY LH2 SYSTEMS FINAL PREPS FOR LOADING COMPLETE AND PERSONNEL CLEARING PAD,	
	121	6	C1TC	CLTC	ADVISE CVTS THAT SMDPS WILL BE PLACED IN A 1 SW 1 VALVE MODE AT THIS TIME	
	111	7	CLTC	CVTS	THE SMDPS WILL BE PLACED IN A 1 SW 1 VALVE MODE AT THIS TIME	TCPI
	181	8	C1TC	CPDC	TURN PANEL POWER ON, VERIFY SMDPS IS IN 1 SW 1 VALVE MODE,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING 9 HRS 01 00					---10 MINUTES PRIOR TO RESUMING COUNT---	
	181	9	C1TC	CSPP	PLACE LSE POWER OVERRIDE SWITCH TO ON AND VERIFY.	
	181	10	C1TC	CSPP	PLACE 42D100 LOCKUP ENABLE SWITCH TO ON AND VERIFY.	
	181	11	C1TC	CSPP	VERIFY LUT ELECTRICAL PREPS COMPLETE PER V-31045 AND PERSONNEL ARE CLEARING PAD.	
	121	12	C1TC	CLTC	S-IC ELECTRICAL LAUNCH PREPS COMPLETE.	
HOLDING 9 HRS 01 00	181	13	C1TC	RPDC	VERIFY DTS/DEE PAD CLEARING COMPLETED PER V-25160.	
					--- JUST PRIOR TO RESUMING COUNT ---	
	121	1	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY TO START PAD CLEARING OPERATIONS.	
	111	2	CLTC	CVTS	LV READY TO START PAD CLEARING OPERATIONS. REQUEST SECURITY TO LOCK ROOM 1P4 AND DELIVER KEYS TO CLTC.	TCP1
	188	3	CVTS	PA	THE CLOCK WILL START ON MY MARK AT T-9 HRS 0 MIN 0 SEC. 5-4-3-2-1, MARK	TCP1
	188	4	CLTC	ALL	ALL PERSONNEL TURN TO T-8:59 HRS IN VOLUME II.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
3 HRS 45: 0"					PART 2 ----- LV 2 DAY SCRUB TO LAUNCH TURNAROUND ----- CONDITIONS: * S/A 2 HAS RETRACTED (T-16.2 SEC) * IGNITION HAS NOT OCCURRED (T-8.9 SEC) * LV DRAIN COMPLETE PER VOL II APP C * CSM HE VENTING NOT REQUIRED * ALL S/V ORDNANCE TO REMAIN CONNECTED * CSM FUEL CELLS TO REMAIN ACTIVATED * LV FLIGHT BATT REPLACEMENT NOT REQD * S-IVB ECS CHECKS NOT REQUIRED * SC LOX & LH2 RESERVICE IS REQUIRED * SC SHE RESERVICE IS REQUIRED * ALSEP FCA REMOVAL NOT REQUIRED * IU ECS FLOW STAYS AT 200 LB/MIN * BACKUP DTS SUPPORTING ECS/ALSEP OPS * CCF SUPPORTING ECS/ALSEP OPS	
	111	1	CLTC	CVTS	LV IS STARTING TURNAROUND OPERATIONS, RESET COUNT CLOCK TO T+4 HRS 45 MIN AND CONTINUE COUNTING UP, REQUEST RANGE CLEARANCE FOR S-II TM LINKS BF-1 & BF-2 (241.5 MHZ AND 234.0 MHZ),	TCP:

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
4 HRS 45: 0"						
188		1	CVTS	PA	THE CONTROL AREA IS OPEN FOR NORMAL WORK. RADIATION AREA CONTROL REMAINS IN EFFECT.	TCPI
121		2	CLTC	C1TC C2TC C4TC CUTC	START RECYCLE OPERATIONS.	
121		3	CVTS	CLTC	CHANGE SMDPS FROM 1 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE.	TCPI
121		4	CLTC	C1TC	CHANGE SMDPS FROM 1 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE.	
181		5	C1TC	CPDC	CHANGE SMDPS FROM 1 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE.	
181		6	C1TC	CECS	REPORT WHEN CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED).	
		6-1			*****WARNING***** * * ECS IS TO BE CONFIGURED * * FOR GN2 STANDBY WITH * * HANDVALVES CLOSED WHILE * * ALSEP IS INSTALLED IN * * VEHICLE, FOR FCA * * EMERGENCY, THE * * HANDVALVES WILL NOT BE * * OPENED UNTIL DIRECTED * * BY CVTS. * *	
181		7	CECS	C1TC	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	
		7-1			*****WARNING***** * * END OF ECS INERT * * ATMOSPHERE HAZARD * * RESUME PREVIOUS HAZARD * * LEVEL. * *	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 4 HRS 45' 0"						
	121	8	C1TC	CLTC	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	
	111	9	CLTC	CVTS	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	TCPI
	121	10	CLTC	CLQS	START/VERIFY START OF LV-QAL INSPECTION OF MSS PLATFORMS 1 & 2 PER LV-QAL ICL-5 FOR MSS MOVE,	
	261	11	CLTC	BOSC	VERIFY READY TO SUPPORT ESP TRANSPORTER MOVE	TCPI
	121	12	CLTC	C1TC	VERIFY ESP/LLP TRANSPORTER PREPS COMPLETE AND MOVE TRANSPORTER TO SERVICE POSITION,	
	161	13	C1TC	CPDC	VERIFY ESP/LLP TRANSPORTER PREPS COMPLETE AND MOVE TRANSPORTER TO SERVICE POSITION PER V-36070, REPORT WHEN COMPLETE,	
	261	14	CLTC	BOSC	REQUEST BPCN SWITCH TO CH 161 TO SUPPORT GH2 SYSTEM SECURING,	TCPI XB- 240-23
	161	15	C4TC	BPCN	START GH2 SYSTEM SECURING, REPORT WHEN READY TO SUPPORT S-IVB HEX GH2 INTERFACE PURGE,	TCPI XB- 240-23
	161	16	C4TC	C4PS	START HEX GH2 INTERFACE PURGE PER V-30539, SECT V,	
	161	17	C1TC	CPDC	DEACTIVATE THE S-IC UMBILICAL PURGE PANEL PER V-26222, REPORT WHEN COMPLETE,	
	161	18	C4TC	C4PS	VERIFY GH2 SYSTEM SECURED PER V-30539, SECT V,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 4 HRS 451 0"	151	19	CUTC	CUIP	MEASUREMENT TRANSFER AUTO, S-II BURN TEST & S-IVB COAST TEST - AUTO, (60X-607A6 - CCIS PANEL);	
	151	20	CUTC	BGCC	VERIFY/MOUNT MT01 TAPE;	
	181	21	C1TC	C1IP	CONFIGURE MEASUREMENT PANEL FOR MT01; REPORT WHEN COMPLETE;	B- 300-25
	121	22	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR MT01 (LV MEAS SCAN);	B- 300-25
	121	23	CLTC	C4IP	PRELAUNCH CHECKOUT GROUP - ON;	
	121	24	CLTC	CLIK	ISSUE S-IVB ALL RACS RUN;	
	121	25	CLTC	C2NP	RACS POWER - ON;	
	121	26	CLTC	B2TM	VERIFY ICE SETUP PER V-28181 (G125);	
	121	27	CLTC	BTMC	VERIFY READY TO SUPPORT TM TAPE RECORDING OF BF1 AND BF2;	
	121	28	CLTC	C2IP	RF COUPLER TO ANTENNA;	
	121	29	CLTC	BTMC	TM TAPE RECORDING ON;	
	121	30	CLTC	C2IP	F1, F2 TRANSMITTERS ON;	
	121	31	CLTC	C2IP	FREQ MEAS CAL SWITCH ON;	
	121	32	CLTC	CLIK	COMMAND RACS S-II ALL - ALL RUN;	
	188	33	CLTC	ALL	STAGE MEASUREMENTS WILL BE INTERRUPTED DURING MT01;	
	121	34	CLTC	CLIK	REQUEST & EXECUTE MT01 (LV MEAS SCAN);	
		34-1			DELETED	B- 300-25

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4 HRS 45:00"		171	35	C2TC	C2PV SECURE PURGE VACUUM OPERATION PER V-25311 (L009)	
		181	36	C1TC	CCLH START LH2 STORAGE TANK SAMPLING AND FILL PER V-25034,	
		181	37	C1TC	CCLO START LOX STORAGE TANK SAMPLING AND FILL PER V-25329 AND V-25331,	
		181	38	C1TC	CSPP OPEN LSE OVERRIDE POWER MODULE CIRCUIT BREAKER PER V-31045, REPORT WHEN COMPLETE,	
		181	39	C1TC	C1PE REMOVE S-1C HYDRAULICS AFTER ENGINE WARMUP IS COMPLETE PER V-34012,	
5 HRS 0:00"		1			NOTE ---- FOR NEXT 15 MIN CSAD REQUIRES CONTROL OF TV CAMERAS 37 & 39,	
		121	2	CLQS	CLTC LV-QAL INSPECTION OF MSS PLATFORMS 1 & 2 PER LV-QAL ICL-5 IS COMPLETE,	
		111	3	CLTC	CVTS VERIFY PREVAILING WINDS DO NOT EXCEED REDLINE VALUES FOR FREE STANDING S/V	TCPI
		3-1			NOTE ---- REDLINE WINDSPEED IS 39 KNOTS PEAK WINDS AT 530 FT ABOVE GROUND LEVEL. IF HIGHER WINDS PREDICTED, DAMPER SWITCHOVER MAY PROCEED ONLY IF BENDING MOMENT ASSESSMENT INDICATES SATISFACTORY CONDITIONS. (LO DIRECTOR'S CONCURRENCE WITH ASSESSMENT IS REQUIRED)	XB-239-27
		121	4	CVTS	CLTC CLEAR TO DISCONNECT PRIMARY DAMPER,	TCPI
		161	5	C4TC	S4MM VERIFY MSS PLATFORM MONITORS ON STATION	
		121	6	CLTC	C1TC DISCONNECT PRIMARY DAMPER & TILT TSM 3-4 TOWER	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 5 HRS 01 00		7			*****WARNING***** * * THE FOLLOWING STEP IS * * HAZARDOUS DUE TO ARM * * MOTION, * * *****	
	181	8	C1TC	CSAD	DISCONNECT PRIMARY DAMPER PER V-36086, REPORT WHEN COMPLETE,	
	181	9	C1TC	LTSM	START TSM 3-4 PROTECTIVE TOWER RETRACTION PER V-36039, REPORT WHEN COMPLETE,	
* 5 HRS 15 00						
	181	1	C1TC	LTSM	VERIFY TSM 3-4 PROTECTIVE TOWER RETRACTED TO CLEAR MSS	
	181	2	C1TC	CSAD	VERIFY PRIMARY DAMPER RETRACTED AND LATCHED,	
	121	3	C1TC	CLTC	PRIMARY DAMPER IS DISCONNECTED & TSM TOWER RETRACTED,	
	181	4	C1TC	CPDC	DEACTIVATE THE FACILITY AIR STANDBY PANEL PER V-26222, REPORT WHEN COMPLETE,	
		5			*****WARNING***** * * THE FACILITY AIR SYSTEM * * HAS BEEN PURGED OF GN2 * * AND IS BACK IN NORMAL * * CONFIGURATION, RESUME * * PREVIOUS HAZARD LEVEL, * * *****	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 5 HRS 151 0"						
	171	6	C2PV	C2TC	MSS PLATFORM 1 OBSERVERS ON STATION FOR MSS MOVE TO VEHICLE AND PLATFORM CLOSING	
	121	7	CLTC	C2TC C4TC CUTC	VERIFY READY FOR MSS MATE,	
	111	8	CLTC	CVTS	PRIMARY DAMPER IS DISCONNECTED AND TSM TOWER RETRACTED, READY FOR MSS MATE	TCPI
	111	9	CLTC	CVTS	REQUEST PEHE PERFORM SNIFFER CHECKS IN S-1C FWD, S-11 AFT, AND IU/S-1VB FWD AREAS WHEN ACCESS DOORS ARE OPENED,	TCPI
	121	10	CLTC	C1TC	EXTEND S/A'S 2 & 3 AND EXTEND S/A 2, 3, 4, 5, 6 & 7 TIPS AND SECURE ALL ARMS.	
	181	11	C1TC	CSAC	EXTEND S/A'S 2 & 3 AND EXTEND S/A 2, 3, 4, 5, 6 & 7 TIPS AND SECURE ALL ARMS.	
		12			*****WARNING***** * * THE FOLLOWING TWO STEPS * * ARE HAZARDOUS DUE TO * * ARM MOTION, * * *****	
	181	13	CSAC	CSA2 CSA3	EXTEND S/A'S & ARM TIPS AND SECURE ARMS	
	181	14	CSAC	CSA1 CSA4 CSA5 CSA6 CSA7 CSA8 CSA9	EXTEND ARM TIPS AND SECURE S/A'S PER APPLICABLE PROCEDURE,	
	181	15	C1TC	LAS1	HDA EXPLOSIVE RELEASE #1 & #2 POWER MODULES OFF, REPORT WHEN COMPLETE,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 5 HRS 151 0"	181	16	C1TC	CHDA	VERIFY HDA SECONDARY RELEASE POWER SUPPLY #1 AND #2 AVAILABLE OFF, SECURE HDA/SACS PER V-36069, REPORT WHEN COMPLETE,	
* 5 HRS 301 0"	121	1	CVTS	CLTC	MSS IS OVER MOUNTS, REPORT WHEN TSM 3-4 TOWER IS ERECTED AND MSS CAN BE LOWERED,	TCPI
	121	2	CLTC	C1TC	ERECT TSM 3-4 TOWER, REPORT WHEN COMPLETE,	
	181	3	C1TC	LTSM	ERECT TSM 3-4 TOWER PER V-36039, REPORT WHEN ERECTED,	
	111	4	CLTC	CVTS	TSM 3-4 TOWER ERECTED AND CLEAR FOR LOWERING MSS ON MOUNTS, NOTIFY CLTC IF MSS MUST BE REPOSITIONED PRIOR TO LOWERING,	TCPI
	121	5	CLIK	CLTC	LV MT01 IS COMPLETE,	
	121	6	CLTC	C1TC C2TC C4TC CUTC	MT01 IS COMPLETE,	B- 300-25
	181	7	C1TC	C1IP	MT01 IS COMPLETE, CONFIGURE MEASUREMENT PANEL FOR NORMAL OPERATIONS,	B- 300-25
	121	8	CLTC	BTMC	IM TAPE RECORDING OFF,	
	121	9	CLTC	C2NP	RACS POWER OFF,	
	121	10	CLTC	C2IP	F1, F2 TRANSMITTERS OFF	
	121	11	CLTC	C2IP	RF COUPLER TO AUTO	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 5 HRS 30' 0"						
	121	12	CLTC	C2IP	FREQ MEAS CAL SWITCH OFF	
	151	13	CUTC	CUIP	MEASUREMENT TRANSFER - OFF, S-II BURN TEST & S-IVB COAST TEST - OFF, (60X-607A6 - CCIS PANEL),	
	161	14	C4TC	C4IP	PRELAUNCH CHECKOUT GROUP OFF	
	111	15	CLTC	CVTS	RANGE CLEARANCE FOR S-II TM NO LONGER REQUIRED	TCPI
+ 5 HRS 45' 0"						
	161	1	C1TC	CSAC	VERIFY S/A 4, 5, 6 & 7 TIPS EXTENDED,	
	121	2	C1TC	CLTC	S/A 4, 5, 6 & 7 TIPS HAVE BEEN EXTENDED,	
	121	3	CLTC	C2TC C4TC CUTC	S/A 4, 5, 6 & 7 TIPS ARE EXTENDED, CLEAR FOR CARRIER SECURING AND ACCESS DOOR REMOVAL,	
		3-1		C2TC	*****WARNING***** * * NO S-II WORK IS TO BE * * ALLOWED IN THE S/A 4 & * * 5 UMBILICAL AREAS, * * EXCEPT FOR UMBILICAL * * SAFING PIN * * INSTALLATION, UNTIL THE * * UMBILICAL WITHDRAWAL * * LANYARDS HAVE BEEN * * DETACHED, * * *****	
	161	4	C4TC	S4MA S4MF	SAFE FWD & AFT CARRIERS PER V-30539, SECT V, REPORT WHEN COMPLETE,	
	161	5	C1TC	CSAC	VERIFY S/A'S 2 & 3 EXTENDED, S/A 2 & 3 TIPS EXTENDED AND ALL ARMS SECURED,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 5 HRS 45: 0"						
	181	6	C1TC	CTS1	VERIFY TSM'S SECURED,	
	121	7	C1TC	CLTC	S/A 2 & 3 TIPS HAVE BEEN EXTENDED,	
	181	8	C1TC	CHCU	SECURE HCU PER V-36079, REPORT WHEN COMPLETE,	
	121	9	CLTC	C1TC	CLEAR TO OPEN S-1C FWD ACCESS DOOR,	
	121	10	CLTC	C2TC	S/A 3 TIP CLEAR FOR OPENING OF S-11 AFT ACCESS DOOR,	
	171	11	C2TC	U2MU	SECURE S/A 4 UMBILICALS PER V-30029 (M020) TASK 58, REPORT WHEN COMPLETE,	
	171	12	C2TC	U2MU	SECURE S/A 5 UMBILICALS PER V-30029 (M020) TASK 57, REPORT WHEN COMPLETE,	
	171	13	C2TC	U2SE U2SI	S/A 3 TIP IS EXTENDED, U2SI OPEN S-11 AFT ACCESS DOOR, U2SY START SNIFFER CHECKS WHEN DOOR IS OPEN,	
	181	14	C1TC	C1PE	START S-1C FWD UMBILICAL RECONNECT PER V-24320,	
	151	15	CUTC	UUVN	START REMOVAL OF IU ACCESS DOOR PER IV-34046,	
		16			DELETED	B- 302-26
		17			DELETED	B- 302-26
		18			DELETED	B- 302-26
	181	19	C1TC	C1PE	START REMOVAL OF S-1C FWD ACCESS DOOR, START SNIFFER CHECKS WHEN DOOR IS OPEN, REPORT WHEN COMPLETE,	
	121	20	CLTC	C4TC	START S-1VB TANK SAMPLING,	
	161	21	C4TC	S4PC C4PS	START S-1VB TANK SAMPLING PER V-30539, SECT V,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
6 HRS 01 00"						
	121	1	CVTS	CLTC	MSS IS ON MOUNTS READY FOR AUX DAMPER CONNECTION,	TCP1
		1-1			NOTE ----- FOR THE NEXT 15 MIN CSAD REQUIRES CONTROL OF CAMERA 37,	
	121	2	CLTC	C1TC	CONNECT AUX DAMPER	
	181	3	C1TC	CSAD	CONNECT AUX DAMPER PER V-36086, REPORT WHEN COMPLETE,	
	181	4	C1TC	C1PE	VERIFY S-1C FWD ACCESS DOOR REMOVAL AND SNIFFER CHECKS ARE COMPLETE,	
	121	5	C1TC	CLTC	S-1C FWD ACCESS DOOR IS OPEN AND SNIFFER CHECKS ARE COMPLETE,	
	111	6	CLTC	CVTS	VERIFY CPSS HAS APPROVED LV ACCESS THROUGH S/A 2 (S-1C FWD),	TCP1
	181	7	C1TC	C1PE	START FORWARD SKIRT WORK PLATFORM INSTALLATION AND LOX TANK BULKHEAD COVER INSTALLATION AS REQUIRED TO SUPPORT SCRUB OPERATIONS,	
	171	8	U2MU	C2TC	S/A 4 UMBILICALS HAVE BEEN SECURED,	
	171	9	U2MU	C2TC	S/A 5 UMBILICALS HAVE BEEN SECURED,	
	121	10	C2TC	CLTC	S-11 FWD AND AFT UMBILICALS HAVE BEEN SAFED,	
6 HRS 15 00"						
	121	1	CVTS	CLTC	STANDBY FOR OIS TRANSFER FROM CRAWLER TRANSPORTER TO PAD,	TCP1
	121	2	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR OIS CONNECT TO PAD	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 6 HRS 151 0"	171	3	U2SE	C2TC	S-II AFT ACCESS DOOR IS OPEN AND SNIFFER CHECKS HAVE BEEN ACCOMPLISHED,	
	121	4	C1TC	CLTC	AUX DAMPER IS CONNECTED,	
	111	5	CLTC	CVTS	AUX DAMPER IS CONNECTED,	TCP!
	181	6	C1TC	CSAC	DISCONNECT AND SECURE THE Q-BALL COVER RETRACT SYSTEM PER V-36112, REPORT WHEN COMPLETE,	
		6-1			DELETED	XB- 236-22 XB- 236-22
	151	7	UUVH	CUTC	IU ACCESS DOOR IS REMOVED,	
	161	8	C4TC	S4SY	VERIFY SNIFFER CHECKS COMPLETE,	
	121	9	CLTC	C2TC CUTC	VERIFY ACCESS DOORS REMOVED AND SNIFFER CHECKS ARE COMPLETE (IU & S-II AFT)	
	111	10	CLTC	CVTS	VERIFY CPSS HAS APPROVED LV ACCESS THROUGH S/A 3 & 7 DOORS (IU & S-II AFT)	TCP!
	121	11	CLTC	CUTC	REMOVE STAGE POWER, REPORT WHEN COMPLETE,	
	161	12	CUTC	C4TC	VERIFY READY FOR REMOVAL OF IU STAGE POWER,	
	151	13	CUTC	CUNP	REMOVE IU STAGE POWER PER V-21223, 6D110 BUS MUST REMAIN UP TO PROVIDE SWITCH SELECTOR POWER, REPORT WHEN COMPLETE,	
	121	14	CLTC	C4TC	INSTALL S-IVB FWD ACCESS KIT	
	161	15	C4TC	S4MF	START INSTALLATION OF S-IVB FWD ACCESS KIT AND FDS PLATFORM (REQUIRED FOR LM SHE RESERVICE OPERATIONS) PER V-30539, SECT V,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 6 HRS 15' 0"	261	16	C2TC	BOSC	S-II WILL BE READY FOR LH TANK H2 CONTENT GHE SAMPLES (2 EACH) ON S/A 5 AND LUT 180 FT LEVEL AND A7-71 LH HEAT EXCHANGER H2 CONTENT GHE SAMPLES (2 EACH) ON LUT 180 FT LEVEL IN 30 MINUTES (LVN-6, LVN-15)	TCPI XB- 240-23
* 6 HRS 30' 0"	171	1	C2TC	U2SI	START INSTALLATION OF AFT ACCESS KIT PER V-26489 (G138) AS REQUIRED FOR VACUUM JACKETED LINE PRESSURE CHECKS,	
	121	2	CVTS	CLTC	MSS OIS CONNECTED TO PAD	TCPI
* 7 HRS 15' 0"	181	1	C1TC	C1PE	VERIFY S-1C BULKHEAD PROTECTIVE EQUIPMENT INSTALLATION IS COMPLETE,	
	181	2	C1TC	C1PE	VERIFY COMPLETION OF FWD ACCESS KIT INSTALLATION REQUIRED TO SUPPORT SCRUB OPS,	
	171	3	C2TC	C2SP	START A7-71 VACUUM CHECK PER V-30029 (M020) TASK 53, REPORT WHEN COMPLETE,	
	171	4	C2TC	C2GP	START CLOSEOUT OF LUT LEVEL 180 PER V-30029 (M020) TASK 64,	
* 7 HRS 30' 0"	171	1	U2SI	C2TC	AFT ACCESS KIT INSTALLATION COMPLETE,	
	171	2	C2TC	U2J2	START VACUUM JACKETED LINE PRESSURE CHECKS PER V-24116 (J001),	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
7 HRS 30' 0"	171	3	C2TC	C2AE	START (QAMS) MAINSTAGE OK PRESS SW (CALIPS) VERIFICATION PER V-34014 (E023),	
7 HRS 45' 0"	161	1	C4TC	C4PU	PU OVEN AND INVERTER POWER ON THEN AUTO,	
	161	2	C4TC	C4PS	VERIFY S-IVB TANK SAMPLING IS COMPLETE,	
	121	3	C4TC	CLTC	S-IVB FWD ACCESS KIT PARTIAL INSTALLATION IS COMPLETE,	
	121	4	CLTC	CUTC	S-IVB FWD ACCESS KIT PARTIAL INSTALLATION IS COMPLETE, APPLY IU STAGE POWER,	
	111	5	CLTC	CVTS	S-IVB FWD ACCESS KIT REQUIRED FOR LM OPERATIONS IS INSTALLED,	TCPI
	151	6	CUTC	CUNP	APPLY IU STAGE POWER (MANUALLY POWER UP IF AUTO PROGRAMS EXECUTING) PER V-21223, REPORT WHEN COMPLETE,	
	151	7	CUTC	SUVM SUVE	INSTALL IU LIGHTS AND OIS, CONNECT LIGHTING SYSTEM GN2 PURGE PER IV-26178, REPORT WHEN COMPLETE,	
	151	8	CUTC	SUVM	INSTALL CHE ASSEMBLY PER IV-34047 TO SUPPORT FDS INSTALLATION,	
8 HRS 0' 0"	171	1	C2AE	C2TC	MAINSTAGE OK PRESSURE SWITCH VERIFICATION IS COMPLETE,	
	121	2	CLTC	C2TC	START S-II ENGINE SEQUENCE TEST,	
	171	3	C2TC	C2AE	START (QAES) ENGINE SEQUENCE TEST PER V-34014 (E023), REPORT WHEN COMPLETE,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
8 HRS 01 0"						
121		4	CUTC	CLTC	IU STAGE POWER IS ON, COOLING IS SUPPORTING.	
151		5	CUTC	SUVM	VERIFY CHE ASSEMBLY IS INSTALLED,	
171		6	C2TC	C2SP	REVERIFY GROUND PNEUMATICS ACTIVATION PER V-30029 (M020) TASK 15, REPORT WHEN COMPLETE,	
171		7	C2SP	C2TC	A7-71 VACUUM CHECKS COMPLETE,	
8 HRS 15 0"						
161		1	C4TC	C4ES	START S-IVB PU QUICK LOOKS,	
161		2	C4ES	C4NK	REQUEST & EXECUTE XAPU,	
161		3	C4TC	S4MF	INSTALL LM ACCESS STEPS PER V-30539 APPENDIX D, REPORT WHEN COMPLETE,	
8 HRS 30 0"						
171		1	U2J2	C2TC	VACUUM JACKETED LINE PRESSURE CHECKS COMPLETE,	
121		2	C2TC	CLTC	VACUUM JACKETED LINE PRESSURE CHECKS COMPLETE,	
171		3	C2TC	U2SI	START REMOVAL OF AFT ACCESS KIT PER V-26008 (G042)	
9 HRS 01 0"						
181		1	C1TC	C1NE C1PE	VERIFY S-IC FORWARD UMBILICAL INSTALLATION COMPLETE,	
		2			DELETED	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 9 HRS 01' 0"	171	3	C2AE	C2TC	ENGINE SEQUENCE TEST COMPLETE,	
	121	4	C2TC	CLTC	S-II ENGINE SEQUENCE TEST COMPLETE,	
* 9 HRS 15' 0"	181	1	C1TC	C1PE	REMOVE PORTION OF FORWARD ACCESS KIT INSTALLED TO SUPPORT SCRUB OPERATIONS,	
	161	2	C4TC	C4ES	VERIFY S-IVB PU QUICK LOOK COMPLETE	
	121	3	C4TC	CLTC	XAPU (S-IVB PU CHECKS) COMPLETE,	
* 9 HRS 30' 0"		1			DELETED	B- 300-25
		2			DELETED	B- 300-25
		3			DELETED	B- 300-25
		4			DELETED	B- 300-25
	171	5	U2S1	C2TC	REMOVAL OF AFT ACCESS KIT COMPLETE,	
	171	6	C2TC	U2SE	VERIFY AFT INTERSTAGE READY FOR CLOSEOUT	
	171	7	C2TC	U2S1	SECURE S-II AFT DOOR,	
* 9 HRS 45' 0"		1			DELETED	B- 300-25
		2			DELETED	B- 300-25

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 9 HRS 45' 0"		3			DELETED	B- 300-25
		4			DELETED	B- 300-25
	171	5	U2SI	C2TC	S-11 AFT DOOR SECURED,	
	171	6	C2GP	C2TC	GROUND PNEUMATICS ACTIVATION REVERIFICATION IS COMPLETE	
* 10 HRS 30' 0"						
	181	1	C1TC	C1PE	VERIFY FORWARD SKIRT BULKHEAD PROTECTION AND INTERNAL ACCESS EQUIPMENT REMOVED,	
	181	2	C1TC	C1PE C1NE	VERIFY S-1C FORWARD SKIRT AREA READY FOR FINAL CLOSURE,	
	181	3	C1TC	C1PE	INSTALL AND SECURE S-1C FWD ACCESS DOOR,	
	151	4	CUTC	SUVM	REMOVE CHE ASSEMBLY, REPORT WHEN COMPLETE,	
* 10 HRS 45' 0"						
	181	1	C1TC	C1PE	VERIFY S-1C FORWARD ACCESS DOOR SECURED,	
	151	2	CUTC	SUVM	VERIFY CHE ASSEMBLY HAS BEEN REMOVED,	
	151	3	CUTC	SUVE	INSTALL SHE IU CABLE RACK COVER ASSEMBLY, REPORT WHEN COMPLETE,	
* 11 HRS 0' 0"						
	171	1	C2TC	C2SP	START ULLAGE PRESSURE SWITCH (CALIPS) VERIFICATION PER V-30029 (M020) TASK 86 AFTER FORWARD AND AFT DOORS ARE SECURED, REPORT WHEN COMPLETE,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+11 HRS 01 00	121	2	CVTS	CLTC	REMOVE W/R MSS DOOR LOCK,	TCP! XB- 236-22
	121	3	CLTC	C1TC	REMOVE W/R MSS DOOR LOCK,	XB- 236-22
	181	4	C1TC	CSAC	REMOVE W/R MSS DOOR LOCK,	XB- 236-22
	118	5	CSAC	CSA9	REMOVE W/R MSS DOOR LOCK PER V-36085,	XB- 236-22
	171	1	C2SP	C2TC	ULLAGE PRESSURE SWITCH (CALIPS) CHECKOUT IS COMPLETE,	
+12 HRS 45 00	121	1	C2TC	CLTC	REQUEST MSS PLATFORM 1 BE POSITIONED AT LV STA 1800 FOR S-II INSULATION INSPECTION	
	111	2	CLTC	CVTS	REQUEST MSS PLATFORM 1 BE POSITIONED AT LV STA 1800 FOR S-II INSULATION INSPECTION	TCP!
		3			DELETED 4 STEPS	XB- 236-22
+13 HRS 01 00	121	1	CVTS	CLTC	MSS PLATFORM 1 IS AVAILABLE FOR JOINT ACCESS	TCP!

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
*13 HRS 01 00		1-1	CLTC		*** NOTE SUPPORT WILL BE INSTALLING ANNULUS RINGS AND HANDRAILS IN CONJUNCTION WITH S-II INSULATION INSPECTION	
	121	2	CLTC	C2TC	MSS PLATFORM 1 IS AVAILABLE FOR S-II INSULATION INSPECTION	
	171	3	C2TC	C2PV	START S-II INSULATION INSPECTION UTILIZING MSS PLATFORM 1.	
*18 HRS 45 00	188	1	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR LM SHE RESERVICE OPERATIONS	TCPI
		1-1			*****WARNING***** * * THE CONTROL AREA FOR LM * * SHE RESERVICE CONSISTS * * OF THE LM DESCENT AREA * * INTERNAL TO THE SLA, IU * * & S-IVB FWD, * * *****	TCPI
*21 HRS 45 00	188	1	CVTS	PA	LM SHE RESERVICE IS COMPLETE, THE CONTROL AREA IS OPEN FOR NORMAL WORK.	TCPI
	171	2	C2PV	C2TC	INSULATION INSPECTION AND MSS PLATFORM 1 CLOSEOUT IS COMPLETE,	
	121	3	C2TC	CLTC	MSS PLATFORM 1 CLOSED OUT,	
	111	4	CLTC	CVTS	MSS PLATFORM 1 AVAILABLE FOR OPENING	TCPI

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+22 HRS 45' 0"						
	121	1	CVTS	CLTC	MSS PLATFORM 1 IS OPEN AND SECURE	TCPI
	188	2	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR CSM CRYO RESERVICING.	TCPI
		2-1			*****WARNING***** * * THE CONTROL AREA FOR * CSM CRYO RESERVICING * CONSISTS OF THE 1100 * FOOT RADIUS AROUND THE * SV, LV COMPUTER * MAINTENANCE AND ECS GN2 * HANDVALVE PERSONNEL ARE * PERMITTED TO REMAIN IN * ROOMS 10 & 13A AND ECS * ROOM DURING CSM CRYO * RESERVICING. * *****	TCPI
	121	3	CVTS	CLTC	SCO PERSONNEL READY FOR SHDPS CHANGE TO 2 SWITCH MODE, REPORT WHEN COMPLETE.	TCPI
	121	4	CLTC	CLTC	SCO PERSONNEL READY FOR SHDPS TO BE PUT IN THE 2 SWITCH MODE, REPORT WHEN COMPLETE.	
	181	5	CLTC	CPDC	CHANGE THE SHDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE, REPORT WHEN COMPLETE.	
+23 HRS 15' 0"		1			NOTE ----- THE FOLLOWING SEQUENCES ARE TO BE PERFORMED AFTER THE PAD IS CLEAR OF ALL NON-ESSENTIAL PERSONNEL.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+23 HRS 15' 0"						
	121	1-1	CVTS	CLTC	READY FOR SMDPS CHANGE TO 1 SWITCH MODE, REPORT WHEN COMPLETE,	TCPI
	121	1-2	CLTC	C1TC	CHANGE THE SMDPS TO 1 SWITCH MODE, REPORT WHEN COMPLETE,	
	181	1-3	C1TC	CPDC	CHANGE THE SMDPS TO 1 SWITCH MODE, REPORT WHEN COMPLETE,	
T+28:45 + 1 DAY 4 HRS 45' 0"						
	188	1	CVTS	PA	ALL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR CSM LO2 AND LH2 TANK PRESSURIZATION,	XB- 236-22 TCPI
		1-1			*****WARNING***** * * THE CONTROL AREA FOR * * CSM LO2 AND LH2 TANK * * PRESSURIZATION CONSISTS * * OF THE AREA CONFINED BY * * THE COMPLEX PERIMETER * * FENCE, * * *****	TCPI
	121	2	CLTC	C1TC C2TC C4TC CUTC	VERIFY ALL COMPARTMENTS CLEAR AND READY TO SWITCH ECS FROM AIR TO GN2 STANDBY,	
	111	3	CLTC	CVTS	REQUEST CPSS VERIFY READY FOR ECS GN2 STANDBY,	TCPI
	121	4	CLTC	C1TC	CONFIGURE ECS FOR STANDBY GN2 AND START CLEARING THE PAD,	

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T+28:45 * 1 DAY 4 HRS 45' 0"		5			*****WARNING***** * * AN INERT ATMOSPHERE * HAZARD WILL EXIST IN * THE ECS ROOM AND ALL * S/V COMPARTMENTS, * EXCEPT THE CM, WHILE * THE ECS PURGE GN2 HAND * VALVES ARE OPEN, * *****	
	181	6	C1TC	CECS	CONFIGURE ECS FOR STANDBY (HANDVALVES OPEN) PER V-36074 PART B AND START CLEARING THE PAD,	
T+31:15 * 1 DAY 7 HRS 15' 0"						
	188	1	CVTS	PA	CSM LO2 & LH2 TANK PRESSURIZATION IS COMPLETE, CONTINUING CM SURGE TANK PRESSURIZATION, THE CONTROL AREA IS OPEN FOR NORMAL WORK EXCEPT FOR CM INTERIOR,	XB- 236-22 TCPI
	181	2	C1TC	CECS	SEND ECS PERSONNEL TO PAD TO SECURE GN2 HAND VALVES, REPORT WHEN CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED),	
		2-1			*****WARNING***** * * ECS IS TO BE CONFIGURED * FOR GN2 STANDBY WITH * HANDVALVES CLOSED WHILE * ALSEP IS INSTALLED IN * VEHICLE, FOR FCA * EMERGENCY, THE * HANDVALVES WILL NOT BE * OPENED UNTIL DIRECTED * BY CVTS, * *****	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+31:15 + 1 DAY 7 HRS 15' 0"	181	3	CECS	C1TC	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED),	
		3=1			*****WARNING***** * * END OF INERT ATMOSPHERE * * HAZARD, RESUME * * PREVIOUS HAZARD LEVEL, * * *****	
	121	4	C1TC	CLTC	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED),	
	111	5	CLTC	CVTS	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED),	TCP!
	121	6	CVTS	CLTC	CHANGE THE SMDPS FROM 1 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE,	TCP!
	121	7	CLTC	C1TC	REQUEST CPDC TURN PANEL POWER OFF TO DISARM THE GN2 DELUGE SYSTEM AND CLOSE GN2 INLET HANDVALVE (2 SWITCH 1 VALVE MODE), REPORT WHEN COMPLETE,	
	181	8	C1TC	CPDC	TURN PANEL POWER OFF TO DISARM THE GN2 DELUGE SYSTEM AND CLOSE GN2 INLET HANDVALVE, VERIFY SMDPS IS IN 2 SWITCH 1 VALVE MODE,	
		8=1		CPDC LPDC	NOTE ----- BETWEEN NOW AND START OF LV PROPELLANT LOADING, CPDC SHOULD STANDBY FOR EMERGENCY ARMING OF THE SMDPS, IN THE EVENT OF EMERGENCY EVACUATION OF THE LUT, LPDC MUST OPEN THE GN2 INLET VALVE TO THE SMDPP PRIOR TO EVACUATING. CPDC WILL TURN HIS PANEL POWER ON AT THE DIRECTION OF CVTS, CLTC OR C1TC ONLY. THIS DIRECTION WILL BE GIVEN ONLY AFTER VERIFICATION THAT IU AND SC HAVE BEEN CLEARED OF PERSONNEL.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+32:00 1 DAY 8 HRS 01 00"						
	171	1	C2TC	C2PV	ACTIVATE PURGE AND VACUUM SYSTEM PER V-26276 (G058)	XB- 236-22
	171	2	C2TC	C2PV	START COMMON BULKHEAD EVACUATION PER V-26276 (G058); REPORT WHEN COMPLETE.	
T+32:30 1 DAY 8 HRS 30 00"						
	261	1	C2TC	BOSC	S-II WILL BE READY FOR PURGE SYSTEM DEWPOINT GHE SAMPLES (2 EACH) ON S/A 4 IN 30 MINUTES, (LVN-4, LVN-5)	XB- 236-22 TCPI
T+33:30 1 DAY 9 HRS 30 00"						
	151	1	CUTC	SUVM	INSTALL GHE ASSEMBLY PER IV-34047 TO SUPPORT REMOVAL OF FDS;	XB- 240-23
	171	2	C2PV	C2TC	COMMON BULKHEAD EVACUATION IS COMPLETE; ALL PURGE CIRCUITS ARE ACTIVATED.	XB- 236-22

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+33:45 + 1 DAY 9 HRS 45' 0"						
151		1	CUTC	SUVM	VERIFY CHE ASSEMBLY IS INSTALLED,	XB- 236-22
121		2	CUTC	CLTC	CHE INSTALLATION IS COMPLETE,	
121		3	CVTS	CLTC	LM SHE RESERVICE LINES HAVE BEEN DISCONNECTED, YOU ARE CLEARED TO REMOVE FDS FROM THE IU/S-IVB,	TCPI
121		4	CLTC	C4TC CUTC	COORDINATE DIRECTLY WITH LM PERSONNEL AND REMOVE FDS FROM THE IU/S-IVB,	
161		5	C4TC	S4MF	REMOVE FIRST LM ACCESS STEP PER V-30539, APPENDIX D, REPORT WHEN COMPLETE,	
T+34:25 + 1 DAY 10 HRS 25' 0"						
181		1	C1TC	CSAC	RECONFIGURE THE Q-BALL COVER RETRACT SYSTEM FOR LAUNCH PER V-36112,	XB- 236-22
		2			DELETED	
261		3	CLTC	BOSC	VERIFY HAMMERHEAD CRANE IS SECURED FOR LAUNCH AND ACCESS HATCH TO 380 FT LEVEL IS UNLOCKED,	TCPI
121		4	CLTC	C1TC	HAMMERHEAD CRANE IS SECURED FOR LAUNCH AND ACCESS HATCH IS UNLOCKED	
181		5	CUTC	C1TC	IU PERSONNEL ARE ON STATION TO MONITOR Q-BALL COVER INSTALLATION	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+34:40 + 1 DAY 10 HRS 40' 0"		1			DELETED	XB- 236-22
121		2	C1TC	CLTC	READY FOR CONNECTION OF Q-BALL COVER RETRACT CABLE	
111		3	CLTC	CVTS	MSS PLATFORM 5 IS AVAILABLE FOR OPENING IN CONJUNCTION WITH Q-BALL COVER RETRACT CABLE CONNECTION,	TCPI
181		4	C1TC	CSAC	CONNECT Q-BALL COVER RETRACT CABLE IN CONJUNCTION WITH MSS PLATFORM 5 MOVEMENT, REPORT WHEN COMPLETE,	
T+34:45 + 1 DAY 10 HRS 45' 0"						XB- 236-
151		1	CUTC	SUVM	REMOVE CHE ASSEMBLY, REPORT WHEN COMPLETE,	
151		2	CUTC	SUVE	REMOVE SHE IU CABLE RACK COVER ASSEMBLY, REPORT WHEN COMPLETE,	
161		3	C4TC	S4MF	REMOVE FDS PLATFORM AND MOVE SECOND LM ACCESS STEP IN FRONT OF LM TSI PER V-30539, SECT 0,	
T+35:00 + 1 DAY 11 HRS 0' 0"						XB- 236-22
261		1	CLTC	BOSC	ACTIVATE 6000 PSI GH2 SUPPLY	TCPI

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+35:30 + 1 DAY 11 HRS 30' 0"						
181		1	C1TC	CHCU	POWER UP HCU PER V-36079,	XB- 236-22
181		2	C1TC	CPDC	START PNEUMATIC DISTRIBUTION SYSTEM FINAL LAUNCH PREPS PER V-36064,	
171		3	C2TC	C2PV	SAMPLE PURGE SYSTEMS PER V-26276 (G058), REPORT WHEN COMPLETE,	
T+35:45 + 1 DAY 11 HRS 45' 0"						
161		1	C4TC	S4MF	REMOVE SECOND LM ACCESS STEP PER V-30539 APPENDIX D (COORDINATE DIRECTLY WITH LM PAD LEADER), REPORT WHEN COMPLETE,	XB- 236-22
121		2	CLTC	CUTC	CLEAR TO REMOVE IU LIGHTS AND OIS,	
151		3	CUTC	SUVM SUVE	REMOVE IU LIGHTS AND OIS, SECURE LIGHTING SYSTEM GN2 PURGE PER IV-26178. REPORT WHEN COMPLETE,	
181		4	C1TC	CTS1	PRESSURIZE TSM'S PER V-36039, REPORT WHEN COMPLETE,	
T+35:55 + 1 DAY 11 HRS 55' 0"						
181		1	CSAC	C1TC	REQUEST CLEARANCE TO PRESSURIZE S/A'S 1, 5 AND 6,	XB- 236-22

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+36:00 + 1 DAY 12 HRS 0' 0"	181	1	C1TC	CSAC	CLEAR TO PRESSURIZE S/A'S 1, 5 AND 6, REPORT WHEN COMPLETE.	XB- 236-22
	118	2	CSAC	CSAD	START DRRS PREPS PER V-36086.	
		3			*****WARNING***** * * THE FOLLOWING 3 STEPS * * ARE HAZARDOUS DUE TO * * HIGH PRESSURE PNEUMATIC * * AND HYDRAULIC * * UTILIZATION. * * *****	
	118	4	CSAC	CSA1	PRESSURIZE S/A 1 PER V-36077.	
	118	5	CSAC	CSA5	PRESSURIZE S/A 5 PER V-36081.	
	118	6	CSAC	CSA6	PRESSURIZE S/A 6 PER V-36082.	
	181	7	C1TC	BRFS	DRSCS ML & LCC GSE POWER ON	
T+36:15 + 1 DAY 12 HRS 15' 0"	111	1	CLTC	CVTS	S/A 7 WILL BE PRESSURIZED IN 15 MINUTES, LOCAL CLEARING WILL BE CONTROLLED BY S/A PERSONNEL	XB- 236-22 TCP!

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+36:25 + 1 DAY 12 HRS 25' 0"	181	1	CSAC	C1TC	S/A'S 1, 5 & 6 PRESSURIZED, REQUEST CLEARANCE TO PRESSURIZE S/A'S 2, 4 & 7,	XB- 236-22
T+36:30 + 1 DAY 12 HRS 30' 0"	181	1	C1TC	CSAC	CLEAR TO PRESSURIZE S/A'S 2, 4 & 7, REPORT WHEN COMPLETE,	XB- 236-22
	121	2	C4TC	CLTC	KSC SYSTEMS SAFETY SUPPORT WILL BE REQUIRED IN 30 MINUTES ON LUT LEVEL 240 FOR GH2 SNIFFER CHECKS,	
	111	3	CLTC	CVTS	KSC SYSTEMS SAFETY SUPPORT WILL BE REQUIRED IN 30 MINUTES ON LUT LEVEL 240 FOR GH2 SNIFFER CHECKS,	TCPI
		4			*****WARNING***** * * THE FOLLOWING 3 STEPS * * ARE HAZARDOUS DUE TO * * HIGH PRESSURE PNEUMATIC * * AND HYDRAULIC * * UTILIZATION, * * *****	
	118	5	CSAC	CSA2	PRESSURIZE S/A 2 PER V-36078,	
	118	6	CSAC	CSA4	PRESSURIZE S/A 4 PER V-36080,	
	118	7	CSAC	CSA7	PRESSURIZE S/A 7 PER V-36083,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+36:45 + 1 DAY 12 HRS 45: 0"						
121		1	CVTS	CLTC	LM 525 PLATFORM REMOVAL IS COMPLETE, CLEAR TO START S-IVB FWD ACCESS KIT REMOVAL	XB-236-22 TCPI
151		2	C4TC	S4PC	VERIFY WITH LM PAD LEADER THAT 525 PLATFORM REMOVAL IS COMPLETE,	
151		3	CUTC	SUVE	VERIFY IU LIGHTS AND OIS REMOVAL COMPLETE,	
161		4	C4TC	S4MF	START FINAL WALKAROUND OF FWD SKIRT AREA	
151		5	CUTC	UJVM SUVE	VERIFY IU READY FOR ACCESS KIT REMOVAL,	
121		6	C4TC	CLTC	VERIFY IU AND SC CLEAR FOR REMOVAL OF S-IVB FWD ACCESS KIT,	
161		7	C4TC	S4MF	START FORWARD ACCESS KIT REMOVAL PER V-30539 SECT'S P & R, REPORT WHEN COMPLETE,	
121		8	CVTS	CLTC	CLEAR TO CLOSE AND LOCK EMERGENCY ACCESS GATE ON S/A 7,	TCPI
121		9	CLTC	C1TC	CLOSE AND LOCK EMERGENCY ACCESS GATE ON S/A 7,	
181		10	C1TC	CSAC	CLOSE AND LOCK EMERGENCY ACCESS GATE ON S/A 7,	
118		11	CSAC	CSA7	REMOVE PENETRABLE BARRIER AND CLOSE AND LOCK EMERGENCY EGRESS GATES,	
111		12	CLTC	CVTS	S/A'S 8 & 9 WILL BE PRESSURIZED IN 15 MINUTES, LOCAL CLEARING WILL BE CONTROLLED BY S/A PERSONNEL,	TCPI

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+36:55 + 1 DAY 12 HRS 55' 0"						
	181	1	CSAC	C1TC	S/A'S 2, 4 & 7 AND PRIMARY DAMPER PRESSURIZED, REQUEST CLEARANCE TO PRESSURIZE S/A'S 8 & 9,	XB- 236-22
T+37:00 + 1 DAY 13 HRS 0' 0"						
	181	1	C1TC	CSAC	CLEAR TO PRESSURIZE S/A'S 8 & 9, REPORT WHEN COMPLETE,	XB- 236-22
	118	2	CSAC	CSA4	START PRECLOSEOUT CHECKLIST,	
		3			*****WARNING***** * * THE FOLLOWING TWO STEPS * * ARE HAZARDOUS DUE TO * * HIGH PRESSURE PNEUMATIC * * AND HYDRAULIC * * UTILIZATION, * * *****	
	118	4	CSAC	CSA8	PRESSURIZE S/A 8 PER V-36084,	
	118	5	CSAC	CSA9	PRESSURIZE S/A 9 PER V-36085,	
	118	6	CSAC	CSA1	START PRECLOSEOUT CHECKLIST,	
	121	7	BOSC	CLTC	6000 PSI GH2 SUPPLY ACTIVATED,	TCPI
	121	8	CLTC	C2TC C4TC	6000 PSI GH2 SUPPLY ACTIVATED,	
	171	9	C2TC	C2GP	START GH2 PREPS PER V-30029 (M020) TASK 27, REPORT WHEN COMPLETE,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+37:00 1 DAY 13 HRS 0' 0"	161	10	C4TC	C4PS	START GH2 PREPS PER V-30539, SECT K,	
	161	11	C4TC	S4SY	STANDBY ON LUT 240 FT, LEVEL TO PERFORM GH2 SNIFFER CHECKS,	
	181	12	C1TC	CHDA	PRESSURIZE HDA SYSTEM PER V-36069	
	181	13	C1TC	BRFS	START DRSCS GSE PREPS PER V-38000 SECT 14, REPORT WHEN COMPLETE,	
T+37:05 1 DAY 13 HRS 5' 0"	121	1	CVTS	CLTC	GMIL BRINGING UP SV S-BAND & VHF CARRIERS FOR ON STATION CALIBRATION FOLLOWED BY MCC COMMAND VALIDATION TESTING, VERIFY COMMAND DECODERS ARE OFF,	XB- 236-22 TCPI
T+37:30 1 DAY 13 HRS 30' 0"	118	1	CSAC	CSAB	START PRECLOSEOUT CHECKLIST,	
	118	2	CSAC	CHCU	SECURE ONE PUMP AND VERIFY OTHER PUMP IS RUNNING,	
	121	3	CLTC	CLQS	START/VERIFY START OF LV-QAL INSPECTION OF MSS PLATFORMS 1 & 2 PER LV-QAL ICL-5 FOR MSS MOVE,	
	171	4	C2PV	C2TC	PURGE SYSTEM SAMPLING IS COMPLETE,	
	171	5	C2TC	U2MU	START S/A 4 FINAL UMBILICAL PREPS PER V-30029 (M020) TASK 25, REPORT WHEN COMPLETE,	XB- 236-22

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+37:45 + 1 DAY 13 HRS 45' 0"						
	181	1	C2TC	C1TC	YOU ARE CLEAR TO ATTACH S/A 4 UMBILICAL WITHDRAWAL LANYARDS,	
		1-1		C2TC	*****WARNING***** * * VERIFY ALL S-II WORK IN * * THE S/A 4 UMBILICAL * * AREAS IS COMPLETE * * EXCEPT SAFING PIN * * REMOVAL & A7-64 PURGE * * BAG CLOSEOUT, * * *****	XB- 236-22
	181	2	C1TC	CSAC	VERIFY PRECLOSEOUT CHECKLIST COMPLETED AND RETRACT S/A 1 EXTENSION PLAT AND CLOSE SAFETY GATE, REPORT WHEN COMPLETE,	
	118	3	CSAC	CSA1	START FINAL TOWER PREPS PER V-36077,	
	181	4	C1TC	CSAC	YOU ARE CLEARED TO COMPLETE S/A 4 FINAL UMBILICAL PREPS PER V-36080,	
	118	5	CSAC	CSA4	COMPLETE S/A 4 FINAL UMBILICAL PREPS,	
	181	6	C1TC	B1RF	START DRSCS RF AND AUDIO LINE RETEST PER V-21035, REPORT WHEN COMPLETE,	B- 299-24
T+38:00 + 1 DAY 14 HRS 0' 0"						
	121	1	C1TC	CLTC	VERIFY READY FOR WHITE ROOM MSS DOOR LOCK INSTALLATION,	XB- 236-22

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+38:00 1 DAY 14 HRS 01 0"	111	2	CLTC	CVTS	VERIFY READY FOR WHITE ROOM MSS DOOR LOCK INSTALLATION AND S/A 9 HANGER REMOVAL (S/A 9 LIMITED TO 5 PEOPLE WITH HANGERS REMOVED)	TCPI
	181	3	C1TC	CSAC	INSTALL WHITE ROOM MSS DOOR POSITIVE LOCK,	
	118	4	CSAC	CSA9	INSTALL WHITE ROOM MSS DOOR POSITIVE LOCK PER V-36085,	
	181	5	C1TC	BRFS	VERIFY READY FOR RANGE SUPPORT OF DRSCS PREPS	
	121	6	C1TC	CLTC	READY FOR RANGE SUPPORT OF DRSCS PREPS	
	111	7	CLTC	CVTS	REQUEST RANGE SUPPORT OF DRSCS PREPS ON CH 137 PER V-38000,	TCPI
	121	8	C1TC	CLTC	S/A 7 EMERGENCY ACCESS GATE IS CLOSED AND LOCKED, READY FOR MSS PLATFORM 3 OPENING,	
	261	9	CLTC	BOSC	EMERGENCY ACCESS GATE ON S/A 7 IS CLOSED AND LOCKED FOR MSS PLATFORM 3 OPENING,	TCPI
T+38:05 1 DAY 14 HRS 51 0"	121	1	CVTS	CLTC	MSS PLATFORM OBSERVERS ARE TO REPORT TO PVTS AT THE BASE OF THE MSS LOW RISE ELEVATOR FOR BRIEFING IN 45 MINUTES	TCPI
		1-1		CLTC	*** NOTE THE POSITION OF PLATFORM 1 WILL DETERMINE WHICH STAGE (S-IC OR S-II) PROVIDES OBSERVERS,	
	121	2	CLTC	C1TC C2TC C4TC CUTC	MSS PLATFORM OBSERVERS ARE TO REPORT TO PVTS AT THE BASE OF THE MSS LOW RISE ELEVATOR FOR BRIEFING IN 45 MINUTES,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+38:15 + 1 DAY 14 HRS 15: 0"	161	1	C4TC	S4MF	VERIFY FWD ACCESS KIT REMOVAL COMPLETED AND READY TO INSTALL IU DOOR	XB- 236-22
	161	2	CUTC	C4TC	VERIFY S-IVB FWD AREA CLEAR FOR IU ACCESS DOOR INSTALLATION	
	151	3	CUTC	DUVM	INSTALL AND SECURE IU ACCESS DOOR PER IV-34046	
		4			DELETED	
		5			DELETED	
		6			DELETED	
	118	7	CSAC	CSA6 CSA7	START PRECLOSEOUT CHECKLIST,	
T+38:30 + 1 DAY 14 HRS 30: 0"	121	1	CVTS	CLTC	STARTING MSS OIS TRANSFER FROM PAD HARDLINE TO CRAWLER TRANSPORTER UHF, CRAWLER TRANSPORTER OIS CHANNEL ASSIGNMENTS ARE IN EFFECT,	XB- 236-22 TCPI
	111	2	CLTC	CVTS	VERIFY READY FOR S/A 8 EXTENSION PLATFORM RETRACTION,	TCPI

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+38:30 + 1 DAY 14 HRS 30' 0"	121	3	CLTC	C1TC	READY FOR S/A 8 EXTENSION PLATFORM RETRACTION,	
	181	4	C1TC	CSAC	VERIFY PRECLOSEOUT CHECKLIST COMPLETE AND RETRACT S/A 8 EXTENSION PLATFORM AND CLOSE SAFETY GATE, REPORT WHEN COMPLETE,	
	118	5	CSAC	CSAB	START FINAL TOWER PREPS PER V-36084,	
T+38:35 + 1 DAY 14 HRS 35' 0"		1		C2TC	NOTE ----- PERFORM THE FOLLOWING SEQUENCE IF S-II LH2 VENT VALVE CRYO TEST WILL BE RUN	XB- 236-22
	261	1-1	C2TC	BOSC	VERIFY THAT CIRCUIT BREAKER FOR LUT AC OUTLET L7-C22-LEV 160 HAS BEEN LEFT CLOSED	TCPI
T+38:45 + 1 DAY 14 HRS 45' 0"	118	1	CSAC	CSA2 CSA5	START PRECLOSEOUT CHECKLIST,	XB- 236-22
	121	2	CVTS	CLTC	MSS OIS TRANSFER FROM PAD TO CRAWLER TRANSPORTER IS COMPLETE,	TCPI
	121	3	CVTS	CLTC	A HOLD OF -- HRS -- MINUTES WILL START AT T+1 DAY 17 HRS WITH THE CLOCK RESET AND HOLDING AT T-9 HRS,	TCPI
						XB- 236-22

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+38:45 + 1 DAY 14 HRS 45' 0"		3-1		CLTC	*** NOTE CVTS WILL NOTIFY CLTC OF CHANGE IN HOLD TIME IN EXCESS OF 15 MINUTES DURATION,	
	121	4	CLTC	C1TC C2TC C4TC CUTC	A HOLD OF - HRS -- MINUTES WILL START AT T+1 DAY 17 HRS WITH THE CLOCK RESET AND HOLDING AT T-9 HRS,	TCPI XB- 236-22
T+39:00 + 1 DAY 15 HRS 01' 0"						
	151	1	CUTC	OUVM	VERIFY IU ACCESS DOOR IS INSTALLED	
	121	2	CUTC	CLTC	IU ACCESS DOOR IS SECURED,	
	161	3	C4TC	S4MA S4MF	START FWD AND AFT CARRIER MECHANICAL PREPS PER V-30539, SECT'S N & S,	
	121	4	CLTC	C1TC C2TC C4TC CUTC	VERIFY LV OBSERVERS ARE ON STATION FOR MSS MOVE	
	121	5	CVTS	CLTC	VERIFY READY FOR MSS POWER TRANSFER FROM PAD TO CRAWLER TRANSPORTER,	TCPI
	171	6	C2GP	C2TC	GH2 PREPS ARE COMPLETE,	
	171	7	C2TC	C2GP	START FINAL GND PNEU WALKAROUND PER V-30029 (M020) TASK 31, REPORT WHEN COMPLETE,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+39:00 + 1 DAY 15 HRS 0' 0"						
	171	8	U2MU	C2TC	S/A 4 FINAL UMBILICAL PREPS ARE COMPLETE,	
	171	9	C2TC	U2SE	VERIFY READY FOR S/A 3 RETRACTION & S/A 4 TIP RETRACTION,	
	181	10	C2TC	C1TC	READY FOR S/A 3 RETRACTION & S/A 4 TIP RETRACTION,	
	181	11	C1TC	CSAC	YOU ARE CLEARED TO COMPLETE S/A 4 FINAL TOWER PREPS AND PREP AND RETRACT S/A 3 PER V-36032,	
		12			*****WARNING***** * * THE FOLLOWING TWO STEPS * * ARE HAZARDOUS DUE TO * * ARM MOTION, * * *****	
	118	13	CSAC	CSA4	START FINAL TOWER PREPS PER V-36080.	
	118	14	CSAC	CSA3	START FINAL TOWER PREPS PER V-36032. CLOSE SAFETY GATE AND RETRACT ARM.	
	171	15	C2TC	U2MU	START S/A 5 FINAL UMBILICAL PREPS PER V-30029 (M020) TASK 33, REPORT WHEN COMPLETE,	
T+39:15 + 1 DAY 15 HRS 15' 0"						
	161	1	C4TC	S4MA S4MF	VERIFY READY TO RETRACT S/A 6 & 7 TIPS	
	121	2	C4TC	C1TC	READY FOR S/A 6 & 7 TIP RETRACTION	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+39:15 + 1 DAY 15 HRS 15' 0"	181	3	C1TC	CSAC	RETRACT S/A EXTENSION PLATFORM AND CLOSE SAFETY GATE FOR ARMS 6 & 7	
		4			*****WARNING***** * * THE FOLLOWING TWO STEPS * * ARE HAZARDOUS DUE TO * * ARM MOTION, * * *****	
	118	5	CSAC	CSA6	START FINAL TOWER PREPS PER V-36082.	
	118	6	CSAC	CSA7	START FINAL TOWER PREPS PER V-36083	
	181	7	C2TC	C1TC	YOU ARE CLEAR TO ATTACH S/A 5 UMBILICAL WITHDRAWAL LANYARDS	
		8		C2TC	*****WARNING***** * * VERIFY ALL S-II WORK IN * * THE S/A 5 UMBILICAL * * AREA IS COMPLETE EXCEPT * * SAFING PIN REMOVAL * * *****	
	181	9	C1TC	CSAC	VERIFY S/A 5 PRE-CLOSEOUT CHECKLIST COMPLETE AND START FINAL CLOSEOUT. COORDINATE WITH STAGE PERSONNEL TO RETRACT TIP AND CLOSE SAFETY GATE. REPORT WHEN COMPLETE.	
	118	10	CSAC	CSA5	COORDINATE WITH STAGE PERSONNEL ON ARM TO START FINAL CLOSEOUT PER V-36081.	
	118	11	CSAC	CSA9	START FINAL CLOSEOUT OF S/A 9 LSE SYSTEMS.	
	171	12	C2TC	C2TC	S/A 5 FINAL UMBILICAL PREPS ARE COMPLETE	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+39:20 + 1 DAY 15 HRS 20' 0"		1			NOTE ---- FOR THE NEXT 15 MINUTES CSAD REQUIRES EXCLUSIVE CONTROL OF TV CAMERA 37	XB- 236-22
	121	2	CVTS	CLTC	CLEAR TO DISCONNECT AUX DAMPER	TCPI
	121	3	CLTC	C1TC	DISCONNECT AUX DAMPER	
	181	4	C1TC	CSAC	DISCONNECT AUX DAMPER, REPORT WHEN COMPLETE,	
	118	5	CSAC	CSAD	DISCONNECT AUX DAMPER PER V-36086, REPORT WHEN COMPLETE,	
T+39:30 + 1 DAY 15 HRS 30' 0"						XB- 236-22
	121	1	CVTS	CLTC	GMIL ON STATION, MCC COMMAND VALIDATION AND AIR/GROUND TESTING IS COMPLETE, GMIL S-BAND & UHF CARRIERS ARE OFF,	TCPI
	181	2	CSAC	C1TC	S/A 3 ARM & S/A 7 TIP RETRACTION COMPLETE,	
	121	3	C1TC	CLTC	AUX DAMPER DISCONNECT COMPLETE, S/A 9 HANGERS HAVE BEEN REMOVED,	
	121	4	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR MSS JACKING	
	121	5	CLPS	CLTC	LV-QAL INSPECTION OF MSS PLATFORMS 1 & 2 PER LV-QAL ICL-5 IS COMPLETE	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+39:30 1 DAY 15 HRS 30' 0"						
111		6	CLTC	CVTS	LV-QAL INSPECTION OF MSS PLATFORMS 1 & 2 PER LV-QAL ICL-5 IS COMPLETE, AUX DAMPER DISCONNECTED AND LV READY FOR MSS JACKING BUT NOT FOR MOVE	TCPI
181		7	C1TC	CTS1	START TSM 3-4 PROTECTIVE HOOD TOWER RETRACTION PER V-36039 AFTER MSS JACKING HAS PROVIDED ADEQUATE CLEARANCE	
121		8	C1TC	CLTC	TSM PERSONNEL ARE ON STATION FOR MSS MOVE, VERIFY BOSC IS READY TO SUPPORT ESP TRANSPORTER MOVE	
261		9	CLTC	BOSC	TSM PERSONNEL ARE ON STATION FOR MSS MOVE, VERIFY READY TO SUPPORT ESP TRANSPORTER MOVE	TCPI
T+39:45 1 DAY 15 HRS 45' 0"						
181		1	CSAC	C1TC	S/A 6 TIP RETRACTION COMPLETE	
181		2	C1PE	C1TC	FORWARD UMBILICAL CARRIER BLOCKS REMOVED, READY FOR ARM CLOSEOUT,	
181		3	C1TC	CSAC	VERIFY S/A 2 PRECLOSEOUT CHECKLIST COMPLETE AND START FINAL CLOSEOUT, RETRACT TIP AND CLOSE SAFETY GATE, REPORT WHEN COMPLETE,	
118		4	CSAC	CSA2	COORDINATE WITH STAGE PERSONNEL ON ARM TO START FINAL CLOSEOUT PER V-36078,	
		5			*****WARNING***** * THE FACILITY AIR SYSTEM * * WILL BE CHARGED WITH * * GN2, PERSONNEL SHOULD * * AVOID USE OF AIR TOOLS * * INSIDE ENCLOSED AREAS, * * *****	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+39:45 + 1 DAY 15 HRS 45' 0"						
	181	6	C1TC	CPDC	ACTIVATE FACILITY AIR STANDBY PANEL PER V-26222; REPORT WHEN COMPLETE.	
T+40:00 + 1 DAY 16 HRS 0' 0"						
	121	1	CVTS	CLTC	MSS JACKING IS COMPLETE,	XB- 236-22 TCPI
	181	2	CTS1	C1TC	ISM PROTECTIVE TOWER CLEAR FOR MSS MOVE	
	121	3	C1TC	CLTC	ISM 3-4 TOWER CLEAR FOR MSS MOVE	
	121	4	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR MSS MOVE	
	111	5	CLTC	CVTS	LV CLEAR FOR MSS MOVE	TCPI
	171	6	C2GP	C2TC	GROUND PNEUMATICS FINAL WALKAROUND AND INSPECTION COMPLETE,	
	171	7	C2TC	C2SP C2GP	START FINAL PANEL STATUS CHECKS PER V-30029 (M020) TASK 32; REPORT WHEN COMPLETE,	
		8		C2TC	NOTE ----- PERFORM THE FOLLOWING SEQUENCE IF S-II LH2 VENT VALVE CRYO TEST WILL BE RUN	
		8-1	C2TC	C2PV	VERIFY LH2 VENT VALVES CHECKOUT SYSTEM ABSOLUTE PRESSURE INDICATES 14.7 TO 15.7 PSIA,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+40:00 1 DAY 16 HRS 01 00		121	9	CVTS	CLTC MSS IN MOTION	TCPI
T+40:05 1 DAY 16 HRS 01 00						
		1			NOTE ----- FOR THE NEXT 5 MINUTES CSAD REQUIRES EXCLUSIVE CONTROL OF TV CAMERAS 27 & AA3 OR AA4	XB- 236-22
		121	2	CVTS	CLTC READY FOR PRIMARY DAMPER CONNECTION	TCPI
		121	3	CLTC	C1TC CONNECT PRIMARY DAMPER	
		181	4	C1TC	CSAC CONNECT PRIMARY DAMPER, REPORT WHEN COMPLETE,	
		5			*****WARNING***** * * THE FOLLOWING STEP IS * * HAZARDOUS DUE TO ARM * * MOTION, * * *****	
		118	6	CSAC	CSAD CONNECT PRIMARY DAMPER PER V-36086, REPORT WHEN COMPLETE,	
		188	7	CSAD	PA PRIMARY DAMPER WILL BE CONNECTED AT THIS TIME, VEHICLE MOTION AND GAS VENTING WILL OCCUR	
		181	8	C1TC	CTS1 ERECT TSM 3-4 PROTECTIVE TOWER PER V-36039, REPORT WHEN COMPLETE,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+40:05 + 1 DAY 16 HRS 5' 0"	121	9	CLTC	C1TC	MOVE ESP/LLP TRANSPORTER TO LAUNCH POSITION	
	181	10	C1TC	CPDC	MOVE ESP/LLP TRANSPORTER TO LAUNCH POSITION AND SECURE FOR LAUNCH PER V-36070	
T+40:10 + 1 DAY 16 HRS 10' 0"	171	1	C2SP	C2TC	FINAL PANEL STATUS CHECKS ARE COMPLETE,	XB- 236-22
	171	2	C2GP	C2TC	FINAL PANEL STATUS CHECKS ARE COMPLETE,	
	121	3	C1TC	CLTC	PRIMARY DAMPER CONNECTED	
	111	4	CLTC	CVTS	PRIMARY DAMPER ARM CONNECTION COMPLETE	TCPI
T+40:15 + 1 DAY 16 HRS 15' 0"	181	1	C1TC	CPDC	DEACTIVATE FACILITY AIR STANDBY PANEL PER V-26222 (IF HOLD AT T-9 HRS WILL EXCEED 1 HOUR)	XB- 236-22
		2			*****WARNING***** * THE FACILITY AIR SYSTEM * * HAS BEEN PURGED OF GN2 * * AND IS BACK IN NORMAL * * CONFIGURATION, RESUME * * RESUME PREVIOUS HAZARD * * LEVEL, * *****	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+40:15 + 1 DAY 16 HRS 15' 0"						
	171	3	C2GP	C2TC	CLOSEOUT OF LUT LEVEL 180 PER V-30029 (M020) TASK 64 IS COMPLETE,	
	171	4	C2TC	C2PV	START FINAL PURGE AND VACUUM PANEL STATUS CHECKS PER V-26276 (G058), REPORT WHEN COMPLETE,	
T+40:30 + 1 DAY 16 HRS 30' 0"						
	181	1	C1TC	CPDC	VERIFY PNEUMATIC SYSTEM PREPS COMPLETED PER V-36064 EXCEPT SMDPS IN 2 SW 1 VALVE MODE,	XB- 236-22
	181	2	C1TC	CSAC	VERIFY Q-BALL COVER RETRACT SYSTEM PREPS COMPLETED PER V-36112,	
	121	3	CVTS	CLTC	CSM CCS SWITCH IN BLOCK POSITION FOR ET47 AT T-7 HRS 13 MINUTES,	TCPI
	171	4	C2PV	C2TC	FINAL PURGE AND VACUUM PANEL STATUS CHECKS COMPLETE	
T+41:00 + 1 DAY 17 HRS 0' 0"						
	111	1	CLTC	CVTS	LV HAS COMPLETED TURNAROUND OPERATIONS, RESET COUNTCLOCK TO T-9 HRS AND HOLD AS REQUIRED TO SYNCHRONIZE COUNTCLOCK WITH LAUNCH WINDOW,	XB- 236-22 TCPI

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING 7-9 HRS 0' 0"					--- STARTING SCHEDULED HOLD ---	
	262	1	CLTC	BTIS	VERIFY REGULAR CAMERAS OPERATIONAL AND HAVE BPHO SWITCH TO CH 181 TO SUPPORT PROPELLANT LOADING	TCPI
	121	2	CLTC	CGIC	VERIFY TV CAMERAS ORIENTED FOR VEHICLE LOADING OPERATIONS	TCPI
		3			NOTE ----- ALL LV OPERATORS ARE REQUIRED TO CHECK THEIR PROCEDURES (VOLUME II) DURING THE HOLD TO VERIFY THAT ALL PCR'S FROM T-8:59 HRS THROUGH LV SAFING HAVE BEEN INCORPORATED,	
HOLDING 7-9 HRS 0' 0"					---TWO HOURS PRIOR TO RESUMING COUNT---	
	121	1	CLTC	C1TC	ARM HDA EXPLOSIVE RELEASE,	
	181	2	C1TC	LAS1	HOLDDOWN ARMS EXPLOSIVE RELEASE #1 AND #2 POWER MODULES TO ON AND VERIFY CIRCUIT BREAKERS ARE LOCKED ON,	
		3			VERIFICATION BY LV-QAL -----	
	181	4	C1TC	CHDA	VERIFY HOLDDOWN ARMS SECONDARY RELEASE SYSTEM READY FOR LAUNCH,	
	181	5	C1TC	CSAC	FIRING POWER BEING APPLIED MOMENTARILY,	
	181	6	C1TC	CSPP	CLOSE LSE OVERRIDE POWER MODULE CIRCUIT BREAKER PER V-31045, REPORT WHEN COMPLETE,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING 9 HRS 01 00					---TWO HOURS PRIOR TO RESUMING COUNT---	
181		7	C1TC	CSPP	APPLY 43D100 AND 43D200 FIRING SYSTEM POWER PER V-21194, START BATTERY SWITCHOVER TEST, REPORT WHEN COMPLETE,	
181		8	C1TC	CSAC	VERIFY LSE PREPS COMPLETE - ON,	
181		9	C1TC	CSAC	VERIFY LSE READY FOR S/A 1 RETRACT - ON,	
181		10	C1TC	CSPP	START FINAL PREPARATIONS PER V-31045,	
HOLDING 9 HRS 01 00					---ONE HOUR PRIOR TO RESUMING COUNT---	
121		1	CLTC	C1TC C2TC C4TC CUTC	VERIFY PCR VERIFICATION COMPLETE	
188		2	CLTC	ALL	TAIL SERVICE MAST SAFETY CABLES WILL BE REMOVED AT THIS TIME, PERSONNEL USE EXTREME CAUTION IN AREA OF HOLDDOWN ARMS AND TAIL SERVICE MASTS,	
121		3	CLTC	C1TC	REMOVE TSM SAFETY CABLES,	
181		4	C1TC	CTS1	REMOVE TSM SAFETY CABLES, REPORT WHEN COMPLETE,	
		5			*****WARNING***** * THE FOLLOWING STEP IS * * HAZARDOUS, * *****	
181		6	C1TC	C1PE	APPLY HYDRAULICS TO THE F-1 ENGINES AND START PREFILL OPERATIONS PER V-34012	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING 9 HRS 01 00					-- 45 MINUTES PRIOR TO RESUMING COUNT --	
	121	1	CLTC	C1TC C2TC C4TC CUTC	VERIFY ALL COMPARTMENTS CLOSED OUT AND READY TO SWITCH ECS FROM AIR TO GN2	
	111	2	CLTC	CVTS	ALL LV COMPARTMENTS CLOSED OUT AND READY TO SWITCH ECS FROM AIR TO GN2	TCPI
HOLDING 9 HRS 01 00					-- 40 MINUTES PRIOR TO RESUMING COUNT --	
	121	1	CUTC	CLTC	REQUEST CLEARANCE TO PRESSURIZE ST-124M SUPPLY SPHERE TO FLIGHT PRESSURE (3000 PSI),	
	151	2	CUTC	CUCP	PRESSURIZE ST-124M SUPPLY SPHERE TO 3000 PSI PER V-31062, REPORT WHEN SYSTEM STABILIZED,	
		2-1			*****CAUTION***** * * IN STAGE ST-124M SUPPLY * * SPHERE WILL BE * * PRESSURIZED TO 3000 PSI * * *****	
HOLDING 9 HRS 01 00					-- 30 MINUTES PRIOR TO RESUMING COUNT --	
	111	1	CLTC	CVTS	REQUEST CPSS VERIFY CLEARANCE TO SWITCH ECS TO GN2	TCPI
	121	2	CLTC	C1TC	CONFIGURE ECS FOR STANDBY GN2 (HANDVALVES OPEN)	
	151	3	C1TC	CECS	START ECS PREPS FOR LOADING PER V-36074 PART B	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING 9 HRS 01 0"						
121		4	CVTS	CLTC	VERIFY FINAL PURGE BOX VALIDATION	TCP1
HOLDING 9 HRS 01 0"						
					-- 20 MINUTES PRIOR TO RESUMING COUNT --	
121		1	CLTC	C1TC	SWITCH ECS TO GN2	
		2			*****WARNING***** * * AN INERT ATMOSPHERE * * HAZARD WILL EXIST IN * * THE ECS ROOM AND ALL * * S/V COMPARTMENTS, * * EXCEPT THE CM, WHILE * * THE ECS PURGE GN2 HAND * * VALVES ARE OPEN, * * *****	
181		3	C1TC	CECS	SWITCH ECS TO GN2 PER V-36074 PART C	
		4			*****WARNING***** * * THE FACILITY AIR SYSTEM * * WILL BE CHARGED WITH * * GN2, PERSONNEL SHOULD * * AVOID USE OF AIR TOOLS * * INSIDE ENCLOSED AREAS, * * *****	
181		5	C1TC	CPDC	VERIFY ACTIVATED OR ACTIVATE FACILITY AIR STANDBY PANEL PER V-26222	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING 9 HRS 01 00						
-- 10 MINUTES PRIOR TO RESUMING COUNT --						
121		1	CLTC	CLCP	REQUEST & EXECUTE NU10; REPORT WHEN COMPLETE,	
181		2	C1TC	CTS1	VERIFY TSM FINAL PREPS ARE COMPLETE AND TSM PERSONNEL CLEAR OF PAD	
181		3	C1TC	CWCP	VERIFY INDUSTRIAL WATER SYSTEM LAUNCH PREPS COMPLETED,	
181		4	C1TC	C1PE	VERIFY S-1C MECHANICAL PREPS COMPLETED AND PERSONNEL CLEARING PAD	
181		5	C1TC	CCLH	VERIFY LH2 SYSTEMS FINAL PREPS FOR LOADING COMPLETE AND PERSONNEL CLEARING PAD,	
121		6	C1TC	CLTC	ADVISE CVTS THAT SMDPS WILL BE PLACED IN A 1 SW 1 VALVE MODE AT THIS TIME,	
111		7	CLTC	CVTS	THE SMDPS WILL BE PLACED IN A 1 SW 1 VALVE MODE AT THIS TIME,	TCPI
181		8	C1TC	CPDC	TURN PANEL POWER ON, VERIFY SMDPS IS IN A 1 SW 1 VALVE MODE	
181		9	C1TC	CSPP	PLACE LSE POWER OVERRIDE SWITCH TO ON AND VERIFY	
181		10	C1TC	CSPP	PLACE 42D100 LOCKUP ENABLE SWITCH TO ON AND VERIFY	
181		11	C1TC	CSPP	VERIFY LUT ELECTRICAL PREPS COMPLETE PER V-31045 AND PERSONNEL ARE CLEARING PAD,	
121		12	C1TC	CLTC	S-1C ELECTRICAL LAUNCH PREPS COMPLETE	
181		13	C1TC	RPDC	VERIFY DTS/DEE PAD CLEARING COMPLETED PER V-25160	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
HOLDING 1-9 HRS 0' 0"					---	
					JUST PRIOR TO RESUMING COUNT ---	
171		1	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY TO START PAD CLEARING OPERATIONS	
111		2	CLTC	CVTS	LV READY TO START PAD CLEARING OPERATIONS; REQUEST SECURITY TO LOCK ROOM 1P4 AND DELIVER KEYS TO CLTC	TCPI
188		3	CVTS	PA	THE COUNT CLOCK WILL START ON MY MARK AT 1-9 HRS 0 MINUTES 0 SECONDS,	TCPI
					3-4-3-2-1, MARK	
188		4	CLTC	ALL	ALL PERSONNEL TURN TO T-8:59 HOURS IN VOLUME II,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
3 HRS 451 0"					PART 3 ----- LV 3 DAY SCRUB TO LAUNCH TURNAROUND ----- CONDITIONS: * S/A 2 HAS RETRACTED (T-16,2 SEC) * IGNITION HAS NOT OCCURRED (T-8,9 SEC) * LV DRAIN COMPLETE PER VOL II APP C * CSM HE VENTING NOT REQUIRED * SC CRYO RESERVICE IS REQUIRED * SC SHE RESERVICE IS REQUIRED * LV FLIGHT BATT REPLACEMENT REQUIRED * ALSEP FCA REMOVAL NOT REQUIRED * IU ECS FLOW STAYS AT 200 LB/MIN * S-IVB ECS CHECKS ARE REQUIRED * CCF SUPPORTING ECS/ALSEP OPS * BACKUP DTS SUPPORTING ECS/ALSEP OPS	
	111	1	CLTC	CVTS	LV IS STARTING TURNAROUND OPERATIONS. RESET COUNT CLOCK TO T+4 HRS 45 MIN AND CONTINUE COUNTING UP. REQUEST RANGE CLEARANCE FOR S-II TM LINKS BF-1 & BF-2 (241,5 MHZ AND 234,0 MHZ).	B- 302-26 TCPI
4 HRS 451 0"	188	1	CVTS	PA	THE CONTROL AREA IS OPEN FOR NORMAL WORK. RADIATION AREA CONTROL REMAINS IN EFFECT.	TCPI

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 4 HRS 45' 0"						
	121	2	CLTC	C1TC C2TC C4TC CUTC	START RECYCLE OPERATIONS,	
	121	3	CVTS	CLTC	CHANGE SMDPS FROM 1 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE,	TCPI
	121	4	CLTC	C1TC	CHANGE SMDPS FROM 1 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE,	
	181	5	C1TC	CPDC	CONFIGURE SMDPS IN 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE,	
	181	6	C1TC	CECS	REPORT WHEN CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	
		6-1			*****WARNING***** * * ECS IS TO BE CONFIGURED * * FOR GN2 STANDBY WITH * * HANDVALVES CLOSED WHILE * * ALSEP IS INSTALLED IN * * VEHICLE, FOR FCA * * EMERGENCY, THE * * HANDVALVES WILL NOT BE * * OPENED UNTIL DIRECTED * * BY CVTS, * * *****	
	181	7	CECS	C1TC	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	
		7-1			*****WARNING***** * * END OF ECS INERT * * ATMOSPHERE HAZARD, * * RESUME PREVIOUS HAZARD * * LEVEL, * * *****	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
4 HRS 45' 0"						
	121	8	C1TC	CLTC	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	
	111	9	CLTC	CVTS	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	TCPI
	121	10	CLTC	CLQS	START/VERIFY START OF LV-QAL INSPECTION OF MSS PLATFORMS 1 & 2 PER LV-QAL ICL-5 FOR MSS MOVE,	
	261	11	CLTC	BOSC	VERIFY READY TO SUPPORT ESP TRANSPORTER MOVE,	TCPI
	181	12	CLTC	CPDC	PREP AND MOVE ESP/LLP TRANSPORTER TO SERVICE POSITION PER V-36070, REPORT WHEN COMPLETE,	
	261	13	CLTC	BOSC	REQUEST BCPN SWITCH TO CH 161 TO SUPPORT GH2 SYSTEM SECURING,	TCPI
	161	14	C4TC	BPCN	START GH2 SYSTEM SECURING, REPORT WHEN READY TO SUPPORT S-IVB HEX GH2 INTERFACE PURGE,	XB- 240-23
	121	15	C1TC	CLTC	REQUEST SUPPORT RETURN STAGE MONITOR SHACK AND S-1C STAGE SECURITY BARRIER,	
	261	16	CLTC	BOSC	RETURN STAGE MONITOR SHACK AND S-1C STAGE SECURITY BARRIER TO ML ZERO LEVEL,	TCPI
	161	17	C4TC	C4PS	START HEX GH2 INTERFACE PURGE PER V-30539, SECT V,	
	171	18	C2TC	C2PV	SECURE PURGE VACUUM OPERATIONS PER V-25311 (L009)	
	181	19	C1TC	CPDC	START WINCH INSTALLATION FOR LLP RAISING,	
	181	20	C1TC	C1IP	CONFIGURE MEASUREMENT PANEL FOR MY01, REPORT WHEN COMPLETE,	B- 300-25

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
4 HRS 45: 0"						
171	21	C2TC	C2NP		RACS POWER ON	
121	22	CLTC	B2TM		VERIFY ICE SETUP PER V-28181 (G125).	
121	23	CLTC	B2MC		VERIFY READY TO SUPPORT TM TAPE RECORDING OF BF1 AND BF2.	
121	24	CLTC	C2IP		RF COUPLER TO ANTENNA.	
121	25	CLTC	B2MC		TM TAPE RECORDING ON.	
121	26	CLTC	C2IP		F1, F2 TRANSMITTERS ON.	
121	27	CLTC	C2IP		FREQ MEAS CAL SWITCH ON.	
151	28	CUTC	CUIP		MEASUREMENT TRANSFER TO AUTO. S-11 BURN TEST AND S-1VB COAST TEST AUTO (60X-607A6 - CCIS PANEL)	
151	29	CUTC	BGCC		VERIFY/MOUNT MT01 TAPE	
121	30	CLTC	C1TC C2TC C4TC CUTC		VERIFY READY FOR MT01 (LV MEAS SCAN)	B- 300-25
111	31	CLTC	C4IP		PRELAUNCH CHECKOUT GROUP - ON	
121	32	CLTC	CLIK		ISSUE S-1VB ALL RACS RUN.	
121	33	CLTC	C2NP		RACS POWER ON	
121	34	CLTC	CLIK		COMMAND S-11 ALL - ALL RUN	
	34-1				DELETED	B- 300-25
188	35	CLTC	ALL		STAGE MEASUREMENTS WILL BE INTERRUPTED DURING MT01 (LV MEAS SCAN)	
121	36	CLTC	CLIK		REQUEST & EXECUTE MT01 (LV MEAS SCAN)	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
5 HRS 01 00						
121		1	CLQS	CLTC	LV-QAL INSPECTION OF MSS PLATFORMS 1 & 2 PER LV-QAL ICL-5 IS COMPLETE,	
		2			NOTE ---- FOR NEXT 15 MIN CSAD REQUIRES CONTROL OF TV CAMERAS 37 & 39,	
111		3	CLTC	CVTS	VERIFY PREVAILING WINDS DO NOT EXCEED REDLINE VALUES FOR FREE STANDING S/V	TCPI
		3-1			NOTE ---- REDLINE WINDSPEED IS 39 KNOTS PEAK WINDS AT 530 FT ABOVE GROUND LEVEL. IF HIGHER WINDS PREDICTED, DAMPER SWITCHOVER MAY PROCEED ONLY IF BENDING MOMENT ASSESSMENT INDICATES SATIS- FACTORY CONDITIONS. (LO DIRECTOR'S CONCURRENCE WITH ASSESSMENT IS REQUIRED)	XB- 239-27
121		4	CVTS	CLTC	CLEAR TO DISCONNECT PRIMARY DAMPER.	TCPI
161		5	C4TC	S4MM	VERIFY MSS PLATFORM MONITORS ON STATION	
121		6	CLTC	C1TC	DISCONNECT PRIMARY DAMPER & TILT TSM 3-4 TOWER	
		7			*****WARNING***** * * THE FOLLOWING STEP IS * * HAZARDOUS DUE TO ARM * * MOTION, * * *****	
181		8	C1TC	CSAD	DISCONNECT PRIMARY DAMPER PER V-36066, REPORT WHEN COMPLETE	
181		9	C1TC	CSPP	OPEN LSE OVERRIDE POWER MODULE CIRCUIT BREAKER PER V-31049, REPORT WHEN COMPLETE,	
181		10	C1TC	LTSM	START TSM 3-4 PROTECTIVE TOWER RETRACTION PER V-36039, REPORT WHEN COMPLETE,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
5 HRS 15' 0"						
121		1	CLTC	C1TC	EXTEND S/A'S 2 & 3 AND ALL S/A TIPS	
181		2	C1TC	CSAC	EXTEND S/A'S 2 & 3, ALL S/A TIPS AND SECURE ARMS,	
		3			*****WARNING***** * * THE FOLLOWING STEP IS * * HAZARDOUS DUE TO ARM * * MOTION, * * *****	
118		4	CSAC	CSA2 CSA3	EXTEND S/A'S 2 & 3, ALL S/A TIPS AND SECURE ARMS,	
118		5	CSAC	CSA1 CSA4 CSA5 CSA6 CSA7 CSA8	EXTEND ARM TIPS & SECURE ARMS,	
181		6	C1TC	LAS1	HDA EXPLOSIVE RELEASE #1 & #2 POWER MODULES OFF AND VERIFY,	
151		7	CUTC	LUNW	ST-124M HEATERS TO STANDBY	
151		8	CUTC	DUPO	MANUALLY ADJUST HIGH PRESSURE REGULATOR AND REDUNDANT REGULATOR FROM 3100 +/- 100 TO 1700 +/- 100 PER IV-36038, REPORT WHEN COMPLETE,	
181		9	C1TC	CHDA	VERIFY HDA SECONDARY RELEASE POWER SUPPLY #1 AND #2 AVAILABLE OFF, SECURE HDA/SACS PER V-36069, REPORT WHEN COMPLETE,	
171		10	C2TC	C2SP	START CLOSEOUT OF LUT LEVEL 180 PER V-30029 (MO20) TASK 64,	
181		11	C1TC	CCLH	START LH2 STORAGE TANK SAMPLING AND FILL PER V-25034,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 5 HRS 151 0"	181	12	C1TC	COLD	START LOX STORAGE TANK SAMPLING AND FILL PER V-25329 AND V-25331,	
	181	13	C1TC	CPDC	SECURE S-1C UMBILICAL PURGE PANEL PER V-26222, REPORT WHEN COMPLETE,	
	181	14	C1TC	LTSM	VERIFY TSM 3-4 PROTECTIVE TOWER RETRACTED TO CLEAR MSS	
	181	15	C1TC	CSAD	VERIFY PRIMARY DAMPER RETRACTED AND LATCHED,	
	111	16	CLTC	CVTS	REQUEST PEHE PERFORM SNIFFER CHECKS IN S-1C FWD, S-11 AFT, S-11 FWD, S-1VB AFT, & 1U/S-1VB FWD AREAS WHEN ACCESS DOORS ARE OPENED,	TCPI
	121	17	C1TC	CLTC	PRIMARY DAMPER IS DISCONNECTED & TSM TOWER RETRACTED,	
	121	18	CLTC	C2TC C4TC CUTC	VERIFY READY FOR MSS MATE,	
	111	19	CLTC	CVTS	PRIMARY DAMPER IS DISCONNECTED AND TSM TOWER RETRACTED, READY FOR MSS MATE	TCPI
	181	20	C1TC	CPDC	SECURE FACILITY AIR STANDBY PANEL PER V-26222, REPORT WHEN COMPLETE,	
		21			*****WARNING***** * * THE FACILITY AIR SYSTEM * * HAS BEEN PURGED OF GN2 * * AND IS BACK IN NORMAL * * CONFIGURATION, RESUME * * PREVIOUS HAZARD LEVEL, * * *****	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 5 HRS 30' 0"						
121		1	CVTS	CLTC	MSS IS OVER MOUNTS, REPORT WHEN TSM 3-4 TOWER IS ERECTED AND MSS CAN BE LOWERED.	TCPI
121		2	CLTC	C1TC	ERECT TSM 3-4 TOWER, REPORT WHEN COMPLETE.	
181		3	C1TC	LTSM	ERECT TSM 3-4 TOWER PER V-36039, REPORT WHEN ERECTED.	
111		4	CLTC	CVTS	TSM 3-4 TOWER ERECTED AND CLEAR FOR LOWERING MSS ON MOUNTS, NOTIFY CLTC IF MSS MUST BE REPOSITIONED PRIOR TO LOWERING.	TCPI
121		5	CL1K	CLTC	MT01 IS COMPLETE	
121		6	CLTC	C1TC C2TC C4TC CUTC	MT01 IS COMPLETE	B- 300-25
181		7	C1TC	C1IP	MT01 IS COMPLETE, CONFIGURE MEASUREMENT PANEL FOR NORMAL OPERATIONS.	B- 300-25
121		8	CLTC	RTMC	TM TAPE RECORDING OFF.	
171		9	C2TC	C2NP	RACS POWER OFF.	
121		10	CLTC	C2IP	F1, F2 TRANSMITTERS OFF.	
121		11	C2TC	C2IP	RF COUPLER TO AUTO	
121		12	CLTC	C2IP	FREQ MEAS CAL SWITCH OFF	
151		13	CUTC	CUIP	MEASUREMENT TRANSFER - OFF S-II BURN TEST & S-IVB COAST TEST - OFF (60X-607A6 - CCIS PANEL)	
161		14	C4TC	C4IP	PRELAUNCH CHECKOUT GROUP OFF	
111		15	CLTC	CVTS	RANGE CLEARANCE FOR S-II TM NO LONGER REQUIRED.	TCPI

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 5 HRS 451 0"	181	1	C1TC	CSAC	VERIFY S/A 4, 5, 6, 7, & 8 TIPS EXTENDED	
	121	2	C1TC	CLTC	S/A 4, 5, 6, 7, & 8 TIPS EXTENDED AND CLEARED FOR ACCESS DOOR REMOVAL,	
	111	3	CLTC	CVTS	S/A 8 TIP HAS BEEN EXTENDED AND IS OPEN FOR ACCESS,	TCPI
	121	4	CLTC	C2TC C4TC CUTC	S/A 4, 5, 6, 7 & 8 TIPS EXTENDED, CLEAR FOR CARRIER SECURING AND ACCESS DOOR REMOVAL,	
		4-1	C2TC		*****WARNING***** * * NO S-II WORK IS TO BE * * ALLOWED IN THE S/A 4 * * AND S/A 5 UMBILICAL * * AREAS, EXCEPT FOR * * UMBILICAL SAFING PIN * * INSTALLATION, UNTIL THE * * UMBILICAL WITHDRAWAL * * LANYARDS HAVE BEEN * * DETACHED * * *****	
	161	5	C4TC	S4MF	SAFE FORWARD CARRIER PER V-30539, SECT V, REPORT WHEN COMPLETE,	
	161	6	C4TC	S4MA	SAFE AFT CARRIER PER V-30539, SECT V, REPORT WHEN COMPLETE,	
	181	7	C1TC	CWCP	SECURE IWS PER V-36113	
	171	8	C2TC	U2MU	SECURE S/A 5 UMBILICALS PER V-30029 (M020) TASK 57, REPORT WHEN COMPLETE,	
	171	9	C2TC	U2SE	START REMOVAL OF S-II FWD ACCESS DOOR WHEN S/A 5 UMBILICALS ARE SECURED, U2SY START SNIFFER CHECKS WHEN DOOR IS OPEN, REPORT TO C2TC ON CH 171	
151	10		CUTC	UUVH	START REMOVAL OF IU ACCESS DOOR PER IV-34046,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 5 HRS 45' 0"	121	11	CLTC	LCDC L1PS	POWER DOWN THE 28V POWER SUPPLY (X02-1256A2) IN THE ML COUNTDOWN, REMOVE AUTOSTART PLUG & REAPPLY POWER, REPORT WHEN COMPLETE,	
	181	12	CSAC	C1TC	S/A'S 2 & 3 HAVE BEEN EXTENDED,	
	121	13	C1TC	CLTC	S/A'S 2 & 3 HAVE BEEN EXTENDED,	
	181	14	C1TC	C1PE	START REMOVAL OF S-IC FWD ACCESS DOOR, START SNIFFER CHECKS WHEN DOOR IS OPEN, REPORT WHEN COMPLETE,	
	121	15	CLTC	C1TC	POSITION AND RAISE LLP,	
	181	16	C1TC	CPDC	POSITION AND RAISE LLP PER V-36070,	
* 5 HRS 50' 0"	161	1	C4TC	S4MA	REMOVE S-IVB AFT ACCESS DOOR PER V-30539, SECT V,	
	181	2	CSAC	C1TC	S/A SYSTEMS ARE SECURED	
	181	3	CTS1	C1TC	ISM SYSTEMS ARE SECURED	
	181	4	C1TC	CHCU	SECURE HCU PER V-36079	
* 6 HRS 0' 0"	121	1	CVTS	CLTC	MSS IS ON MOUNTS READY FOR AUX DAMPER CONNECTION	TCPI
		2			NOTE ----- FOR THE NEXT 15 MINUTES, CSAD REQUIRES CONTROL OF CAMERA 37,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
6 HRS 01 07						
121		3	CLTC	C1TC	CONNECT AUX DAMPER,	
181		4	C1TC	CSAD	CONNECT AUX DAMPER PER V-36086, REPORT WHEN COMPLETE,	
181		5	C1TC	CSAC	DISCONNECT AND SECURE Q-BALL COVER RETRACT SYSTEM PER V-36112,	
181		6	C1TC	C1PE	VERIFY S-1C FWD ACCESS DOOR REMOVAL AND SNIFFER CHECKS ARE COMPLETE,	
121		7	C1TC	CLTC	S-1C FWD ACCESS DOOR REMOVED AND SNIFFER CHECKS ARE COMPLETE,	
111		8	CLTC	CVTS	VERIFY CPSS HAS APPROVED LV ACCESS THROUGH S/A 2 (S-1C FWD)	TCPI
121		9	CLTC	C1TC	INSTALL S-1C FWD SKIRT ACCESS KIT AND STAGE LIGHTING FOR S&A OPERATION,	
181		10	C1TC	C1PE C1NE	INSTALL S-1C FWD ACCESS KIT, STAGE LIGHTING AND OIS FOR S&A OPERATIONS PER V-21035, V-24010 & V-24011,	
171		11	U2SE	C2TC	S-1I FWD ACCESS DOOR IS OPEN & SNIFFER CHECKS HAVE BEEN ACCOMPLISHED	
6 HRS 151 07						
151		1	UUVH	CUTC	IU ACCESS DOOR IS REMOVED,	
161		2	C4TC	S4SY	VERIFY SNIFFER CHECKS COMPLETE,	
121		3	CLTC	C2TC C4TC CUTC	VERIFY ACCESS DOORS REMOVED AND SNIFFER CHECKS ARE COMPLETE (IU, S-1VB AFT, S-1I FWD)	
111		4	CLTC	CVTS	VERIFY CPSS HAS APPROVED LV ACCESS THROUGH S/A 5, 6 & 7 DOORS (S-1I FWD, S-1VB AFT & IU)	TCPI

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 6 HRS 151 0"	121	5	CLTC	CUTC	REMOVE STAGE POWER; REPORT WHEN COMPLETE,	
	161	6	CUTC	C4TC	VERIFY READY FOR REMOVAL OF IU STAGE POWER,	
	151	7	CUTC	CUNP	REMOVE IU STAGE POWER PER V-21223, 6D110 BUS MUST REMAIN UP TO PROVIDE SWITCH SELECTOR POWER, REPORT WHEN COMPLETE,	
	121	8	CLTC	C2TC C4TC	INSTALL S-II & S-IVB FWD ACCESS KIT	
	171	9	C2TC	U2SI	START INSTALLATION OF S-II FWD ACCESS KIT PER V-26489 (G138) AS REQUIRED FOR S&A AND S-IVB BATTERY REMOVAL,	
	161	10	C4TC	S4MF	START INSTALLATION OF S-IVB FWD ACCESS KIT (REQUIRED FOR S&A AND S-IVB AND IU BATTERY REMOVAL) PER V-30539, SECT V,	
	121	11	C1TC	CLTC	AUX DAMPER IS CONNECTED	
	111	12	CLTC	CVTS	AUX DAMPER IS CONNECTED	
* 6 HRS 301 0"	121	1	CLTC	C2TC	S/A 3 IS CONNECTED & TIP EXTENDED, OPEN AFT DOOR,	
	171	2	C2TC	U2SE	S/A 3 TIP IS EXTENDED, OPEN S-II AFT ACCESS DOOR, U2SY START SNIFFER CHECKS WHEN DOOR IS OPEN, REPORT RESULTS TO C2TC ON CH, 171,	
	171	3	C2TC	U2MU	SECURE S/A 4 UMBILICALS PER V-30029 (M020) TASK 58, REPORT WHEN COMPLETE,	
	171	4	C2TC	C2NP	START S-II FLIGHT BATTERY ACTIVATION PER V-21101 (B012) AT COUNTDOWN TIME DIRECTED BY CLTC (CD ONLY),	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
6 HRS 30' 0"	261	5	C2TC	BOSC	S-II WILL BE READY FOR LH TANK H2 CONTENT GHE SAMPLES (2 EACH) ON S/A 5 AND LUT 180 FT LEVEL AND A7-71 LH HEAT EXCHANGER H2 CONTENT GHE SAMPLES (2 EACH) ON LUT 180 FT LEVEL IN 30 MINUTES, (LVN-8, LVN-15)	TCP1
	151	6	CUTC	CUNE	START IU FLIGHT BATTERY ACTIVATION PER IV-21254,	XB- 240-23
6 HRS 45' 0"	171	1	U2SE	C2TC	S-II AFT ACCESS DOOR IS OPEN & SNIFFER CHECKS HAVE BEEN ACCOMPLISHED	
	171	2	C2TC	C2SP	START PRESSURIZATION SYSTEM 7 PSIG LEAK CHECKS PER V-30029 (M020) TASK 83, REPORT WHEN COMPLETE,	
	171	3	C2TC	C2SP	START ACTUATION PRESSURE LINE LEAK CHECKS PER V-30029 (M020) TASK 84, REPORT WHEN COMPLETE,	
	121	4	C2TC	CLTC	S-II AFT ACCESS DOOR IS OPEN AND SNIFFER CHECKS HAVE BEEN ACCOMPLISHED,	
	111	5	CLTC	CVTS	VERIFY CPSS HAS APPROVED LV ACCESS THROUGH S/A 3 DOOR (S-II AFT)	TCP1
	121	6	C1TC	CLTC	REQUEST PCMU BE RETURNED TO PAD BY SUPPORT,	
	261	7	CLTC	BOSC	RETURN PCMU TO PAD	TCP1
7 HRS 01' 0"	171	1	C2TC	C2GP	SECURE GROUND PNEUMATICS PER V-30029 (M020) TASK 56, REPORT WHEN COMPLETE,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 7 HRS 01 0"	171	2	C2TC	C2GP	AFTER PNEUMATICS IS SECURED, REMOVE THE ATMOSPHERIC SENSE PURGE LINES (V7-490876-109 & -110), CAP ORIFICES AND PACKAGE LINES FOR REINSTALLATION,	
* 7 HRS 151 0"	161	1	C4TC	S4MF	VERIFY PARTIAL FWD ACCESS KIT INSTALLED FOR S&A AND S-IVB & IU BATTERY REMOVAL,	
	121	2	CLTC	C2TC C4TC	VERIFY S-II & S-IVB ACCESS KITS ARE INSTALLED & READY FOR S&A OPERATIONS	
	161	3	C4TC	C4PS	VERIFY TANK PURGES COMPLETE AND SAMPLES SATISFACTORY,	
	181	4	C1TC	C1PE	VERIFY S-IC FWD SKIRT ACCESS KIT IS INSTALLED FOR S&A OPERATION,	
	121	5	CLTC	C1TC	VERIFY S-IC FWD SKIRT ACCESS KIT IS INSTALLED FOR S&A OPERATION,	
	188	6	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL CLEAR THE CONTROL AREA FOR LV S&A ORDNANCE OPERATIONS,	TCP!
		6-1			*****WARNING***** * * THE CONTROL AREA FOR LV * * S&A DISCONNECTION IS * * THE S/V INTERIOR EXCEPT * * FOR THE CSM AND S-IC * * BOATTAIL, * * *****	
	121	7	CLTC	C1TC C2TC C4TC CUTC	SPECIAL CONTROL AREA IS OPEN FOR PERSONNEL REQUIRED FOR S&A OPERATIONS,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 7 HRS 151 0"	161	8	C4TC	C4SM	START ORDNANCE PANEL SETUP PER V-30539, SECT V, REPORT WHEN COMPLETE,	
	171	9	C2TC	U2PM	START PROPELLANT FILL SECURING OPERATIONS PER V-30029 (M020) TASK 59, REPORT WHEN COMPLETE,	
	181	10	C1TC	CPDC	VERIFY LLP RAISING COMPLETE,	
	181	11	C1TC	C1PE	START F-1 ENGINE SECURING PER V-34012, REPORT WHEN COMPLETE,	
	181	12	C1TC	CPDC	RAISE ESP PER V-36070	
	181	13	C1TC	CHDA	INSERT HDA SAFETY PINS, REPORT WHEN COMPLETE	
	181	14	C1TC	C1PE	REMOVE BASE HEAT SHIELD ACCESS PANEL FOR S-1C AFT BATTERY REMOVAL	
	121	15	C1TC	CLTC	LLP RAISING COMPLETE, ESP RAISING STARTED,	
* 7 HRS 301 0"	261	16	C1TC	BOSC	CLOSE CIRCUIT BREAKERS CB10, 12 & 14 IN PANEL L-22, ROOM 2A,	TCPI
	121	1	CLTC	CUTC	PREPARE IU STAGE FOR RF SILENCE AND CONTROLLED SWITCHING PER V-31062, APPENDIX C,	
	181	2	C1TC	C1DP	VERIFY STATUS SYSTEM SWITCH SAFE AND S&A SWITCH SAFE,	
	181	3	C1TC	C1DP	VERIFY S&A SAFE INDICATION ON	
	181	4	C1TC	C1NP	VERIFY/PLACE SWITCH SELECTOR INHIBIT TO ON AND RESET STAGE LOGIC, VERIFY STAGE LOGIC ZERO ON,	
	121	5	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR RF SILENCE & LV CONTROLLED SWITCHING	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
7 HRS 30' 0"		5-1		CLTC C1TC	*** NOTE S-IC LOX TANK VENT VALVE HARDWARE SWITCHING WILL BE REQUIRED DURING S&A OPERATIONS	
111	6	CLTC	CVTS		REQUEST RF SILENCE; LV CONTROLLED SWITCHING AND LV/SC INTERFACE CONTROLLED SWITCHING ARE NOW IN EFFECT,	TCPI
188	7	CVTS	PA		RF SILENCE IS NOW IN EFFECT, CONTROLLED SWITCHING ON THE LV AND ACROSS THE LV/SC INTERFACE IS NOW IN EFFECT, SWITCHING REQUESTS ARE TO BE COORDINATED THROUGH TEST CONDUCTORS WITH CVTS,	TCPI
181	8	C1TC	C1PE C1NE		VERIFY READY FOR S&A OPERATIONS,	
121	9	CLTC	C1TC C2TC C4TC		VERIFY READY TO START S&A OPERATIONS,	
111	10	CLTC	CVTS		REQUEST CPSS VERIFY READY FOR PD DETONATOR AND CDF DISCONNECTION,	TCPI
121	11	CLTC	C1TC C2TC C4TC		DISCONNECT PD DETONATORS & CDF,	
181	12	C1TC	C1NE C1PE		DISCONNECT PD DETONATORS AND CDF PER V-21009 & V-29003, AND CONNECT PD PULSE SENSORS, START S&A SCRUB OPERATIONS PER V-29003, REPORT WHEN COMPLETE,	
171	13	C2TC	U2HO U2EO		DISCONNECT PD EBW FIRING CABLES & CDF, REINSTALL PD PULSE SENSORS AND CONNECT PER V-30029 (M020) TASK 60,	
161	14	C4TC	C4SM		DISCONNECT CDF & RECONFIGURE S&A PER V-30539, SECT V,	

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* 7 HRS 45' 0"	181	1	C1TC	C1PE	VERIFY BASE HEAT SHIELD ACCESS PANEL REMOVED, START INSTALLATION OF QUAD "A" PLATFORMS NO. 6 & 7,	
	181	2	C1TC	CPDC	VERIFY ESP RAISING COMPLETE,	
	121	3	C1TC	CLTC	ESP RAISING COMPLETE,	
* 8 HRS 15' 0"	121	1	CLTC	C1TC C2TC C4TC	VERIFY S&A OPERATIONS COMPLETE & READY TO REMOVE RF SILENCE & CONTROLLED SWITCHING	
	111	2	CLTC	CVTS	S&A OPERATIONS COMPLETE, LV READY TO REMOVE RF SILENCE & CONTROLLED SWITCHING	TCPI
	188	3	CVTS	PA	LV S&A OPERATIONS ARE COMPLETE, RF SILENCE & CONTROLLED SWITCHING ARE NO LONGER IN EFFECT, THE CONTROL AREA IS OPEN FOR NORMAL WORK,	TCPI
	151	4	CUTC	SUVM SUVE	INSTALL IU LIGHTS & OIS, CONNECT LIGHTING SYSTEM GN2 PURGE PER IV-26178, REPORT WHEN COMPLETE,	
	181	5	CWCP	C1TC	IWS SECURING COMPLETE,	
	121	6	CLTC	C2TC	REMOVE STAGE POWER, REPORT WHEN COMPLETE,	
	171	7	C2TC	C2NP	SECURE S-11 STAGE AND ESE POWER PER V-21103 (B011)	
	181	8	C1TC	LEBS	RECHARGE EMERGENCY BACK-UP BATTERIES PER V-21439,	
	171	9	C2TC	U2SI	CONTINUE INSTALLATION OF FWD ACCESS KIT PER V-26489 (G138) AS REQUIRED FOR S-1VE BATTERY REMOVAL,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 8 HRS 30' 0"	151	1	CUTC	SUVM	INSTALL COMPONENT HANDLING EQUIPMENT PER IV-34047,	
	121	2	CLTC	C4TC	REMOVE STAGE POWER, REPORT WHEN COMPLETE,	
	161	3	C4TC	C4ES	SECURE POWER AND DISCONNECT FORWARD BATTERIES PER V-30539, SEC V, REPORT WHEN COMPLETE,	
	161	4	C4TC	S4MA	INSTALL S-IVB AFT ACCESS KIT PER V-30539, SECT V,	
	121	5	CLTC	C1TC	INSTALL S-IC FWD SKIRT ACCESS KIT AND STAGE LIGHTING FOR S-II BATTERY REMOVAL,	
	161	6	C1TC	C1PE C1NE	INSTALL OIS, STAGE LIGHTING AND S-IC FWD SKIRT ACCESS KIT TO PROTECT S-IC DURING S-II FLIGHT BATTERY REMOVAL PER V-21035, V-24010 & V-24011,	
* 8 HRS 45' 0"	161	1	C4TC	S4MF	START S-IVB FWD BATTERY REMOVAL PER V-30539, SECT V,	
	151	2	SUVM	CUTC	COMPONENT HANDLING EQUIPMENT INSTALLATION COMPLETE,	
	171	3	C2GP	C2TC	GROUND PNEUMATICS SECURED	
	171	4	C2TC	C2SP	START PRESSURIZATION UMBILICAL VERIFICATION PER V-30029 (M020) TASK 1. REPORT WHEN COMPLETE,	
* 9 HRS 15' 0"	171	1	U2SI	C2TC	FWD SKIRT ACCESS KIT INSTALLED AS REQUIRED TO SUPPORT S-IVB BATTERY REMOVAL (CD ONLY),	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 9 HRS 15' 0"	161	2	C2TC	C4TC	S-II READY FOR S-IVB BATTERY REMOVAL,	
	121	3	CLTC	C1TC	VERIFY OK FOR S-II TO PROCEED WITH AFT ACCESS KIT INSTALLATION,	
	121	4	CLTC	C2TC	START S-II AFT ACCESS KIT INSTALLATION FOR BATTERY REMOVAL (CD ONLY),	
	171	5	C2TC	U2SI	INSTALL S-II AFT KIT PER V-26489 (G138) AS REQUIRED FOR BATTERY REMOVAL (CD ONLY),	
	161	6	S4MA	C4TC	ACCESS KIT INSTALLATION SATISFACTORY FOR BATTERY REMOVAL,	
	161	7	C4TC	C4ES	DISCONNECT AFT BATTERIES PER V-30539, SECT V, REPORT WHEN COMPLETE,	
	161	8	C4TC	S4MA	REMOVE S-IVB AFT BATTERY PER V-30539, SECT V,	
	171	9	U2PE	C2TC	PROPELLANT FILL SECURING OPERATIONS ARE COMPLETE,	
	181	10	C1TC	C1PE	VERIFY E-1 ENGINE SECURING COMPLETE PER V-34012,	
	121	1	C4TC	CLTC	REQUEST MSS PLAT 2 BE CLOSED AT STATION 3034,	
* 9 HRS 45' 0"	111	2	CLTC	CVTS	S-IVB READY FOR MSS PLAT 2 CLOSE AT STATION 3034 (TO BE COMPLETE IN 15 MIN),	TCP1
	171	3	C1TC	C2TC	S-IC READY FOR S-II BATTERY REMOVAL (CD ONLY),	
	181	4	C1TC	C1PE	VERIFY QUAD A PLATFORMS 6 & 7 INSTALLED,	
	181	5	C1TC	C1NE	REMOVE S-IC AFT FLIGHT BATTERIES PER V-21204, (CD ONLY)	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 9 HRS 45' 0"	161	6	S4MF	C4TC	S-IVB FWD BATTERY REMOVAL COMPLETE,	
*10 HRS 0' 0"	181	1	C1TC	C1PE	INSTALL FORWARD UMBILICAL CARRIER PER V-24320,	
	131	2	CUTC	SUVM	START PARTIAL REMOVAL OF THERMAL ISOLATION BOTTOM SHROUDS PER V-31062, PART VI,	
	121	3	C1TC	CLTC	REQUEST BOSC PROVIDE SUPPORT TO RECONNECT PCMU	
	261	4	CLTC	BOSC	VERIFY READY TO SUPPORT PCMU RECONNECTION	TCPI
*10 HRS 20' 0"	151	1	CUTC	SUVM	REMOVE IU BATTERIES PER IV-34047,	
*10 HRS 45' 0"	171	1	U2SI	C2TC	S-II AFT ACCESS KIT INSTALLED FOR BATTERY REMOVAL (CD ONLY),	
	171	2	C2TC	U2LN	START S-II BATTERY REMOVAL PER V-21249 (B016) (CD ONLY),	
	171	3	C2TC	U2SI	CONTINUE AFT ACCESS KIT INSTALLATION PER V-26489 (G138) AS REQUIRED FOR RECYCLE,	
	171	4	C2TC	U2MH	START S-II ENGINE ACT, SECURING OPERATIONS PER V-30029 (M020) TASK 63, REPORT WHEN COMPLETE,	
	171	5	C2TC	U2J2	START PROPELLANT FEED SYSTEM VACUUM JACKETED LINE CHECKS PER V-24116 (J001) AS ACCESS IS AVAILABLE, REPORT WHEN COMPLETE,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
*10 HRS 45' 0"						
	181	6	C1TC	C1PE	RECONNECT PCMU/FUSU PER V-24327, REPORT WHEN COMPLETE,	
	161	7	S4MA	C4TC	S-IVB AFT BATTERY REMOVAL COMPLETE,	
	161	8	C4TC	S4MA	CONTINUE AFT ACCESS KIT INSTALLATION AS REQUIRED FOR SCRUB AND RECYCLE,	
	121	9	C4TC	CLTC	S-IVB FLIGHT BATTERY REMOVAL COMPLETE,	
	161	10	C4TC	S4CE	CONNECT S-IVB TM RERADIATION SYSTEM PER V-30539, SECT V,	
	181	11	C4TC	C4ES	START PREPOWER PREPS PER V-30539, APP A,	
	151	12	CUTC	SUTM	INSTALL IU TM RERADIATION ANTENNA PER V-31062, PART VI,	
*11 HRS 0' 0"						
	121	1	CVTS	CLTC	REMOVE W/R MSS DOOR LOCK,	TCP!
	121	2	CLTC	C1TC	REMOVE W/R MSS DOOR LOCK,	
	181	3	C1TC	CSA9	REMOVE W/R MSS DOOR LOCK, REPORT WHEN COMPLETE,	
*11 HRS 15' 0"						
	161	1	C4TC	C4ES	START BATTERY ACTIVATION PER V-21322, V-21323 & V-21324,	
		2		C1TC	START S-IC FLIGHT BATTERY ACTIVATION PER V-21018 (CD ONLY)	
		3			DELETED	B- 300-25
		4			DELETED	B- 300-25
						B- 300-25

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
*11 HRS 15' 0"		5			DELETED	B- 300-25
		6			DELETED	B- 300-25
*11 HRS 45' 0"						
	181	1	C1TC	C1NE	VERIFY S-IC FLIGHT BATTERIES REMOVED, (CD ONLY)	B- 300-25
	121	2	C1TC	CLTC	S-IC FLIGHT BATTERIES REMOVED, (CD ONLY)	B- 300-25
	181	3	C1TC	C1PE	SECURE STAGE PNEUMATICS PER V-24327, REPORT WHEN COMPLETE,	
	161	4	C4TC	S4MF	VERIFY SHE PLATFORM AND ONE STEP HAS BEEN INSTALLED OR INSTALL PER V-30539 SECT V AND APP D,	
	151	5	CUTC	SUTM	PIN ALL FLOWMETERS; REPORT WHEN COMPLETE,	
	151	6	SUVM	CUTC	IU BATTERY REMOVAL COMPLETE,	
	151	7	CUTC	SUVM	INSTALL ST-124M PURGE LINE, SUBLIMATOR COVER AND PLENUM CHECK VALVE PER V-31062, PART VI,	
	151	8	CUTC	SUVE	INSTALL SHE IU CABLE RACK COVER ASSY, REPORT WHEN COMPLETE,	
	121	9	CUTC	CLTC	IU MECHANICAL TASKS ARE COMPLETE, READY FOR LM SHE GSE INSTALLATION,	
	111	10	CLTC	CVTS	IU READY FOR LM SHE GSE INSTALLATION,	TCPI
		11			DELETED	B- 300-25

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
*11 HRS 45' 0"		12			DELETED	B- 300-25
		13			DELETED	B- 300-25
	181	14	C1TC	C1NE C1PE	VERIFY FORWARD UMBILICAL CARRIER CONNECTION IS COMPLETE,	
	121	15	C1TC	CLTC	S-1C FORWARD UMBILICAL CARRIER CONNECTION IS COMPLETE,	
*12 HRS 0' 0"						
	181	1	C1TC	LPLX	START PTCS PREPS FOR S-II & S-IVB PU CHECKS PER V-25159	
	171	2	C2SP	C2TC	PRESSURIZATION UMBILICAL VERIFICATION IS COMPLETE,	
	121	3	C2TC	CLTC	PRESSURIZATION UMBILICAL VERIFICATION IS COMPLETE,	
*12 HRS 15' 0"						
	151	1	CUTC	SUVH	VERIFY ST-124M PURGE LINE, SUBLIMATOR COVER AND PLENUM CHECK VALVE INSTALLED	
	121	2	CLTC	CUTC	APPLY STAGE POWER,	
	151	3	CUTC	CUNP	APPLY IU STAGE POWER PER V-21223, REPORT WHEN COMPLETE,	
	181	4	C1TC	C1PE	VERIFY PNEUMATICS SECURE AND READY TO REMOVE STAGE POWER,	
	181	5	C1TC	C1NE	REMOVE S-1C STAGE POWER PER V-21097, REPORT WHEN COMPLETE,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+12 HRS 30' 0"						
	161	1	C4ES	C4TC	S-IVB PREPOWER PREPS COMPLETE,	
	161	2	S4CE	C4TC	S-IVB TM RERADIATION CONNECTION TO MSS COMPLETE,	
	121	3	C4TC	CLTC	S-IVB TM RERADIATION CONNECTION TO MSS COMPLETE,	
		4		C2TC	NOTE ---- THE REQUIREMENT FOR PU PREPS AND CALIBRATION WILL BE DETERMINED BY C2TC,	
	171	4-1	C2TC	U2PM	START PU PREPS,	
	171	4-2	C2TC	U2PM	VERIFY PRESSURE IN PU COMPUTER IS 10 +/- 1.0 PSIG. IF PRESSURE IS NOT WITHIN SPECIFIED TOLERANCE, PRESSURIZE COMPUTER PER V-30029 (H020) SECTION VI, TASK 93, REPORT WHEN COMPLETE,	
	171	5	C2TC	U2PM	START MEGGER CHECKS AND C7-84 HOOKUP PER SECTIONS D2 THRU D3 OF V-25151 (H013) VERIFY SECTION D1 COMPLETED,	
	121	6	CUTC	CLTC	STAGE POWER ON AND COOLING IS SUPPORTING	
	121	7	CLTC	C4TC	IU POWER AND COOLING APPLIED,	
	161	8	C4TC	C4ES	APPLY S-IVB POWER PER V-30539, APP B, REPORT WHEN COMPLETE,	
+12 HRS 45' 0"						
	171	1	U2LN	C2TC	S-II BATTERY REMOVAL COMPLETE (CD ONLY),	
	121	2	C2TC	CLTC	S-II BATTERY REMOVAL COMPLETE (CD ONLY),	
	111	3	CLTC	CVTS	LV BATTERY REMOVAL COMPLETE	TCPI
	161	4	C4TC	C4PS	START PROP SYSTEM FUNCTIONALS,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+13 HRS 01' 0"	161	1	C4TC	C4PS	RECONFIGURE LH2 CVS AND NPV NOZZLE COVERS TO CHECKOUT CONFIGURATION, REPORT WHEN COMPLETE,	
+13 HRS 15' 0"	121	1	C4TC	CLTC	REQUEST MSS PLAT 2 BE POSITIONED TO STATION 2697 FOR RECONFIGURATION OF LOX NPV NOZZLE COVERS,	
	111	2	CLTC	CVTS	S-IVB READY FOR MSS PLAT 2 MOVE TO STATION 2697 (TO BE COMPLETE IN 15 MINUTES),	TCP!
	181	3	C1TC	C1PE C1NE	VERIFY S-IC FWD SKIRT ACCESS KIT, STAGE LIGHTING & OIS INSTALLATION COMPLETED,	
	121	4	C1TC	CLTC	S-IC FWD SKIRT ACCESS KIT, STAGE LIGHTING & OIS INSTALLATION COMPLETE,	
+13 HRS 30' 0"	161	1	C4TC	C4PS	RECONFIGURE LOX NPV NOZZLE COVERS TO CHECKOUT CONFIGURATION, REPORT WHEN COMPLETE,	
	121	2	C2TC	CLTC	REQUEST MSS PLATFORM 1 BE POSITIONED AT LV STA 1800 FOR S-II INSULATION INSPECTION,	
	111	3	CLTC	CVTS	REQUEST MSS PLATFORM 1 BE POSITIONED AT LV STA 1800 FOR S-II INSULATION INSPECTION,	
+13 HRS 45' 0"	171	1	U2SI	C2TC	AFT ACCESS KIT INSTALLATION FOR RECYCLE IS COMPLETE (360 DEG AT STA 30, 90 DEG AT STA 114),	

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+13 HRS 45' 0"						
	121	2	C2TC	CLTC	S-II AFT KIT INSTALLATION COMPLETE.	
	121	3	CLTC	C2TC	APPLY STAGE AND ESE POWER PER QAPO.	
	181	4	C1TC	CPDC	VERIFY Q-BALL SECURING COMPLETE.	
	171	5	C2TC	U2PM	VERIFY READY FOR STAGE POWER.	
	171	6	C2TC	C2NP	APPLY S-II STAGE AND ESE POWER PER QAPO OR V-21103 (B011) INCLUDING PM POWER.	
+14 HRS 0' 0"						
	171	1	C2NP	C2TC	STAGE AND ESE POWER (INCLUDING PM POWER) HAS BEEN APPLIED.	
	171	2	C2TC	B2TM	START PCM/DDAS CHECKS PER V-28144 (R014) MODE 1, REPORT WHEN COMPLETE.	
	171	3	C2TC	C2GP	ACTIVATE GROUND PNEUMATICS PER V-24256 (G046) AS REQUIRED TO SUPPORT LH2 FACILITY SYSTEM PURGE PER V-35015, SECT. 3.	
	171	4	U2J2	C2TC	VACUUM JACKETED LINE CHECKS COMPLETE.	
	121	5	C2TC	CLTC	VACUUM JACKETED LINE CHECKS ARE COMPLETE	
+14 HRS 15' 0"						
	181	1	C1TC	CCLH	START LH2 SYSTEM PURGE PER V-35015.	
+14 HRS 30' 0"						
	171	1	C2GP	C2TC	GROUND PNEUMATICS ACTIVATED, READY TO SUPPORT.	
	171	2	C2TC	C2SP	VERIFY PRESS SYS READY FOR PU CALIB.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+14 HRS 30' 0"						
	121	3	C2TC	CLTC	STARTING S-II PU CALS,	
	171	4	C2TC	U2PM	START FINAL PU CALIB PER V-25151 (H013),	
	171	5	U2MH	C2TC	S-II ENGINE ACTUATION SYSTEM SECURING OPERATIONS COMPLETED,	
	171	6	C2TC	U2EC	START ECS INSPECTION PER V-30029 (M020) TASK 11, REPORT WHEN COMPLETE,	
+15 HRS 0' 0"						
	161	1	C4TC	C4PU	PU OVEN AND INVERTER POWER ON THEN AUTO	
	171	2	U2EC	C2TC	ECS INSPECTION COMPLETE,	
+15 HRS 45' 0"						
	161	1	C4TC	C4PS	VERIFY READY FOR PU QUICK LOOKS	
	161	2	C4TC	C4ES	START PU QUICK LOOKS	
	161	3	C4ES	C4NK	REQUEST & EXECUTE XAPU	
	121	4	CVTS	CLTC	MSS PLATFORM 1 IS AVAILABLE FOR ACCESS,	TCPI
	121	5	CLTC	C2TC	MSS PLATFORM 1 IS AVAILABLE FOR S-II INSULATION INSPECTION,	
	171	6	C2TC	C2PV	START CLOSEOUT OF MSS PLATFORM 1 PER V-30029 (M020) TASK 9,	
	171	7	C2TC	C2PV	START INSPECTION OF S-II INSULATION UTILIZING MSS PLATFORM 1,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
*16 HRS 15' 0"	181	1	CCLO	C1TC	LOX STORAGE TANK FILL AND SAMPLING IS COMPLETE,	
*16 HRS 45' 0"	181	1	C1TC	LPLX	VERIFY PTCS PREPS COMPLETE AND READY TO SUPPORT S-II & S-IVB PU CALS	
	161	2	C4TC	C4PS	VERIFY PROP SYSTEM FUNCTIONALS COMPLETE	
	161	3	C4TC	C4ES	VERIFY PU QUICK LOOKS COMPLETE	
	161	4	C4TC	C4ES	SECURE S-IVB STAGE POWER PER V-30539, APP C1	
*16 HRS 15' 0"	188	1	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR LM SHE SERVICE OPERATIONS	TCP!
		1=1			*****WARNING***** * * THE CONTROL AREA FOR LM * * SHE SERVICE CONSISTS OF * * THE IU & LM DESCENT * * AREA INTERNAL TO THE * * SLA * * *****	TCP!
*19 HRS 0' 0"	121	1	C4TC	CLTC	S-IVB STAGE POWER IS SECURED, IU SUPPORT IS NO LONGER REQUIRED,	
	121	2	CLTC	CUTC	REMOVE STAGE POWER, REPORT WHEN COMPLETE,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+19 HRS 01 00						
		151	3	CUTC	CUNP REMOVE IU STAGE POWER PER PROCEDURE V-21223, 6D100 BUS MUST REMAIN UP TO PROVIDE SW SELECTOR POWER FOR S-II PU FUNCTIONALS, REPORT WHEN COMPLETE,	
		171	4	C2TC	C2GP SECURE STAGE PNEUMATICS TO SUPPORT STAGE POWER REMOVAL FOR PU CHECKS,	
		171	5	U2PM	C2TC S-II PU CALIB COMPLETE,	
		121	6	C2TC	CLTC S-II PU SYSTEM CALIBRATION COMPLETE,	
		171	7	C2TC	C2NP REMOVE S-II STAGE POWER INCLUDING 2D119 PER V-21103 (B011) (AFTER STAGE PNEUMATICS SECURED)	
		121	8	C2TC	C1TC REMOVE PTCS POWER,	
		9			NOTE ----- STAGE POWER APPLICATION AND REMOVAL MUST BE COORDINATED BETWEEN LPLX, C2NP & U2PM,	
		171	10	C2TC	U2PM CONFIGURE PU SYSTEM FOR PTCS INTERFACE CHECKS, PER V-25151 (H013), REPORT WHEN COMPLETE,	
		171	11	U2PM	C2TC PU SYSTEM CONFIGURED FOR PTCS INTERFACE CHECK,	
		171	12	C2TC	R2SC VERIFY READY FOR STAGE POWER,	
		171	13	C2TC	C2NP APPLY S-II STAGE POWER PER QAPO OR V-21103 (B011),	
		171	14	C2TC	B2TM START STAGE PCM/DDAS CHECKS PER V-28144 (R014) MODE 1, REPORT WHEN COMPLETE,	
		121	15	C2TC	C1TC REAPPLY PTCS POWER AND VERIFY PTCS READY TO SUPPORT S-II PTCS INTERFACE CHECKS,	
		181	16	C1TC	BRFS START DRSCS STATION PREPS PER V-38000 TO SUPPORT S-IC DRSCS S/A 2 CABLE RETEST,	

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+19 HRS 30' 0"	171	1	C2TC	U2PM	START PTCS INTERFACE CHECKS PER V-25151 (H013),	
+19 HRS 45' 0"	181	1	C1TC	C1NE	APPLY S-IC STAGE POWER PER V-21038,	B- 299-24
	181	2	C1TC	B1RF	START DRSCS RF AND AUDIO LINE RETEST PER V-21035, REPORT WHEN COMPLETE,	B- 299-24
+20 HRS 30' 0"	181	1	C1TC	CCLO	START TOTAL LOX SYSTEM DEWPOINT CHECKS PER V-25344,	
	171	2	U2PM	C2TC	S-II PTCS INTERFACE CHECKS COMPLETED,	
	171	3	C2TC	C2NP	REMOVE PM POWER PER V-21103 (B011),	
	171	4	C2TC	U2PM	CONFIGURE PU SYSTEM TO FLIGHT CONFIGURATION PER V-25151 (H013), REPORT WHEN COMPLETE,	
+20 HRS 35' 0"	171	1	U2PM	C2TC	PU SYSTEM IS IN FLIGHT CONFIGURATION,	
	171	2	C2TC	C2NP	APPLY PM POWER,	
	121	3	C2TC	CLTC	S-II READY FOR PROPELLANT SYSTEM FUNCTIONAL TEST AUTO PROGRAM QALS & QAPU	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
*20 HRS 45' 0"						
181		1	C2TC	C1TC	VERIFY S-II PTCS PRA'S ARE ON,	
181		2	C1TC	C2OU C2HU	VERIFY S-II PRA'S ARE ON,	
181		3	LPLX	C1TC	PTCS/PU (S-II & S-IVB) CHECKS COMPLETE AND PTCS POWER REMOVED,	
171		4	C2TC	C2NK	START PROP SYS FUNCTIONAL PER V-30029 (M020) TASK 10 (QALS & QAPU), REPORT WHEN COMPLETE,	
*21 HRS 15' 0"						
171		1	C2NK	C2TC	PU SYSTEM TEST PROGRAMS HAVE COMPLETED EXECUTION,	
171		2	C2PU	C2TC	PU FUNCTIONAL IS COMPLETE,	
121		3	C2TC	CLTC	AUTO PROGRAMS QALS & QAPU ARE COMPLETE IU GROUND POWER (6D110) SUPPORT NO LONGER REQUIRED,	
151		4	CLTC	CUTC	REQUEST BGCC REMOVE LINE PRINTER DATA FROM TEST PROGRAM QAPU FOR C2NK, SECURE IU GROUND POWER, REPORT WHEN COMPLETE,	
151		5	CUTC	CUNP	REMOVE IU GROUND POWER PER V-21223, REPORT WHEN COMPLETE,	
171		6	C2TC	C2NP	REMOVE PM POWER,	
181		7	C2TC	C1TC	REMOVE PTCS POWER,	
181		8	C1TC	CCLH	VERIFY S-II & S-IVB SUPPORT OF LH2 FACILITY SYSTEM PURGES COMPLETE,	
171		9	C1TC	C2TC	SUPPORT REQUIRED FOR LH2 FACILITY SYSTEM PURGES COMPLETE,	
171		10	C2TC	C2GP	LH2 FACILITY SYSTEM PURGES ARE COMPLETE, SECURE GND PNEUMATICS PER V-30029 (M020) TASK 96, REPORT WHEN COMPLETE,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
*21 HRS 15' 0"						
	171	11	C2TC	C2NP	REMOVE STAGE AND ESE PWR PER V-21103 (B011), WHEN GND PNEU SECURED,	
	161	12	C1TC	C4TC	SUPPORT REQUIRED FOR LH2 FACILITY SYSTEM PURGES COMPLETE,	
	161	13	C4PS	C4TC	GROUND PNEUMATICS SECURE, ESE POWER NO LONGER REQUIRED,	
	161	14	C4TC	C4ES	REMOVE S-IVB ESE POWER PER V-30539 APPENDIX C, REPORT WHEN COMPLETE,	
	121	15	CLTC	CUTC	SECURE LV ELECTRICAL SUPPORT EQUIPMENT PER V-31062, APPENDIX A, REPORT WHEN COMPLETE,	
	181	16	B1RF	C1TC	DRSCS S/A 2 CABLE RETEST COMPLETE,	B- 299-24
	181	17	C1TC	C1NE	REMOVE STAGE POWER PER V-21097	B- 299-24
	181	18	BRFS	C1TC	DRSCS GSE IS SECURED PER V-38000	B- 299-24
*21 HRS 45' 0"						
	188	1	CVTS	PA	LM SHE RESERVICE IS COMPLETE, THE CONTROL AREA IS OPEN FOR NORMAL WORK,	TCPI
*22 HRS 15' 0"						
	181	1	CCLH	C1TC	LH2 STORAGE TANK SAMPLING AND STORAGE TANK FILL IS COMPLETE,	
	171	2	C2PV	C2TC	INSULATION INSPECTION AND MSS PLATFORM 1 CLOSEOUT COMPLETE,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
22 HRS 15: 0"						
	121	3	C2TC	CLTC	MSS PLATFORM 1 CLOSED OUT,	
7:25:45 1 DAY 1 HRS 45: 0"						
	188	1	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR CSM CRYO RESERVICING,	TCPI
		1-1			*****WARNING***** * * THE CONTROL AREA FOR * * CSM CRYO RESERVICING * * CONSISTS OF THE 1100 * * FOOT RADIUS AROUND THE * * S/V, LV COMPUTER * * MAINTENANCE AND ECS GN2 * * HANDVALVE PERSONNEL ARE * * PERMITTED TO REMAIN IN * * ROOMS 10 & 15A AND ECS * * ROOM DURING CSM CRYO * * RESERVICING, * * *****	TCPI
	121	2	CVTS	CLTC	SCO PERSONNEL READY FOR SMDPS CHANGE TO 2 SWITCH MODE, REPORT WHEN COMPLETE,	TCPI
	121	3	CLTC	C1TC	SCO PERSONNEL READY FOR SMDPS TO BE PUT IN THE 2 SWITCH MODE, REPORT WHEN COMPLETE,	
	181	4	C1TC	CPDC	CHANGE THE SMDPS FROM 2 SWITCH 1 VALVE MODE TO 2 SWITCH MODE, REPORT WHEN COMPLETE,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+26:15 * 1 DAY 2 HRS 15' 0"		1			NOTE ----- THE FOLLOWING SEQUENCES ARE TO BE PERFORMED AFTER THE PAD IS CLEAR OF ALL NON-ESSENTIAL PERSONNEL	
	121	1-1	CVTS	CLTC	READY FOR SMDPS CHANGE TO 1 SWITCH MODE, REPORT WHEN COMPLETE,	TCP!
	121	1-2	CLTC	C1TC	CHANGE THE SMDPS TO 1 SWITCH MODE, REPORT WHEN COMPLETE,	
	181	1-3	C1TC	CPDC	CHANGE THE SMDPS TO 1 SWITCH MODE, REPORT WHEN COMPLETE,	
T+30:15 * 1 DAY 6 HRS 15' 0"		1	CCLO	C1TC	TOTAL LOX SYSTEM DEWPOINT CHECKS ARE COMPLETE PER V-25344,	
T+34:00 * 1 DAY 10 HRS 0' 0"		1	CVTS	PA	ALL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR CSM LO2 AND LH2 TANK PRESSURIZATION,	TCP!
		1-1			*****WARNING***** * THE CONTROL AREA FOR * * CSM LO2 AND LH2 TANK * * PRESSURIZATION CONSISTS * * OF THE AREA CONFINED BY * * THE COMPLEX PERIMETER * * FENCE; * *****	TCP!
	121	2	CLTC	C1TC C2TC C4TC CUTC	VERIFY ALL COMPARTMENTS CLEAR AND READY TO SWITCH ECS FROM AIR TO GN2 STANDBY	

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T+34:00 + 1 DAY 10 HRS 01 00"						
	111	3	CLTC	CVTS	REQUEST CPSS VERIFY READY FOR ECS GN2 STANDBY	TCPI
	121	4	CLTC	C1TC	CONFIGURE ECS FOR STANDBY GN2 AND START CLEARING THE PAD	
		5			*****WARNING***** * * AN INERT ATMOSPHERE * * HAZARD WILL EXIST IN * * THE ECS ROOM AND ALL * * S/V COMPARTMENTS, * * EXCEPT THE CM, WHILE * * THE ECS PURGE GN2 HAND * * VALVES ARE OPEN, * * *****	
	181	6	C1TC	CECS	CONFIGURE ECS FOR STANDBY GN2 (HANDVALVES OPEN) PER V-36074 PART B AND START CLEARING THE PAD	
T+35:30 + 1 DAY 11 HRS 30 00"						
	151	1	CUTC	CUNE PUPL	VERIFY IU BATTERY ACTIVATION COMPLETE AND TRANSFER BATTERIES TO PAD,	
	161	2	C4TC	C4ES	VERIFY S-1VB FLIGHT BATTERY ACTIVATION COMPLETE AND TRANSFER BATTERIES TO PAD,	
	171	3	C2TC	C2NP	VERIFY S-1I FLIGHT BATTERY ACTIVATION COMPLETE AND TRANSFER BATTERIES TO PAD,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+36:00 + 1 DAY 12 HRS 0' 0"	188	1	CVTS	PA	SC CRYO OPERATIONS ARE COMPLETE, THE PAD IS OPEN FOR NORMAL WORK,	TCPI
	181	2	C1TC	CECS	SEND ECS PERSONNEL TO PAD TO SECURE GN2 HAND VALVES, REPORT WHEN CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED),	
		2=1			*****WARNING***** * * ECS IS TO BE CONFIGURED * * FOR GN2 STANDBY WITH * * HANDVALVES CLOSED WHILE * * ALSEP IS INSTALLED IN * * VEHICLE, FOR FCA * * EMERGENCY, THE * * HANDVALVES WILL NOT BE * * OPENED UNTIL DIRECTED * * BY CVTS, * * *****	
	181	3	CECS	C1TC	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	
		3=1			*****WARNING***** * * END OF ECS INERT * * ATMOSPHERE HAZARD, * * RESUME PREVIOUS HAZARD * * LEVEL, * * *****	
	121	4	C1TC	CLTC	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	
111		5	CLTC	CVTS	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	TCPI
121		6	CVTS	CLTC	CHANGE THE SMDPS FROM 1 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE,	TCPI

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
T+36:00 + 1 DAY 12 HRS 01 00						
	121	7	CLTC	CLTC	CHANGE THE SMDPS FROM 1 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE,	
	181	8	CLTC	CPDC	TURN PANEL POWER OFF TO DISARM THE GN2 DELUGE SYSTEM AND CLOSE GN2 INLET HANDVALVE, VERIFY SMDPS IS IN 2 SWITCH 1 VALVE MODE,	
		8-1		CPDC LPDC	NOTE ----- BETWEEN NOW AND START OF LV PROPELLANT LOADING, CPDC SHOULD STANDBY FOR EMERGENCY ARMING OF THE SMDPS, IN THE EVENT OF EMERGENCY EVACUATION OF THE LUT, LPDC MUST OPEN THE GN2 INLET VALVE TO THE SMDPP PRIOR TO EVACUATING, CPDC WILL TURN HIS PANEL POWER ON AT THE DIRECTION OF CVTS, CLTC OR CLTC ONLY, THIS DIRECTION WILL BE GIVEN ONLY AFTER VERIFICATION THAT IU AND SC HAVE BEEN CLEARED OF PERSONNEL.	
	121	9	CVTS	CLTC	VERIFY READY TO PICKUP THE COUNT AT T-1 DAY 4 HRS,	TCPI
	188	10	CLTC	ALL	ALL PERSONNEL PROCEED WITH LV COUNTDOWN AT T-28 HRS IN VOLUME II,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 3 HRS 45: 0"					PART 4 ----- LV SCRUB FOR 28 DAY TURNAROUND ----- (INITIAL 24 HOURS ONLY) ASSUMED INITIAL CONDITIONS: * S/A 2 HAS RETRACTED (T-16, 2 SEC) * IGNITION HAS NOT OCCURRED (T-8, 9 SEC) * LV DRAIN COMPLETE PER VOL II APP C * LM SNE VENTING REQUIRED * SC CRYO DRAIN IS REQUIRED * LV FLIGHT BATT REMOVAL REQUIRED * ALSEP FCA TO BE REMOVED DOWN MSS * RADIATION AREA CONTROL IN EFFECT * IU ECS FLOW STAYS AT 200 LB/MIN * S-1VB ECS CHECKS ARE REQUIRED	
	111	1	CLTC	CVTS	LV IS STARTING TURNAROUND OPERATIONS, RESET COUNT CLOCK TO T+4 HRS 45 MIN AND CONTINUE COUNTING UP. REQUEST RANGE CLEARANCE FOR S-11, TM LINKS BF-1 & BF-2 (241,5 MHZ AND 234,0 MHZ)	TCPI
+ 4 HRS 45: 0"						
	188	1	CVTS	PA	THE CONTROL AREA IS NOW OPEN FOR NORMAL WORK. RADIATION AREA CONTROL REMAINS IN EFFECT.	TCPI
	121	2	CLTC	C1TC C2TC C4TC CUTC	START RECYCLE OPERATIONS,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 4 HRS 45: 00						
121		3	CVTS	CLTC	CHANGE SMDPS FROM 1 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE,	TCPI
121		4	CLTC	C1TC	CHANGE SMDPS FROM 1 SWITCH MODE TO 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE,	
181		5	C1TC	CPDC	CONFIGURE SMDPS IN 2 SWITCH 1 VALVE MODE, REPORT WHEN COMPLETE,	
181		6	C1TC	CECS	REPORT WHEN CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	
		6=1			*****WARNING***** * ECS IS TO BE CONFIGURED * * FOR GN2 STANDBY WITH * * HANDVALVES CLOSED WHILE * * ALSEP IS INSTALLED IN * * VEHICLE, FOR FCA * * EMERGENCY, THE * * HANDVALVES WILL NOT BE * * OPENED UNTIL DIRECTED * * BY CVTS, * *****	
181		7	CECS	C1TC	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	
		7=1			*****WARNING***** * END OF ECS INERT * * ATMOSPHERE HAZARD, * * RESUME PREVIOUS HAZARD * * LEVEL * *****	
121		8	C1TC	CLTC	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	

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* 4 HRS 45: 0"						
	111	9	CLTC	CVTS	ECS IS CONFIGURED FOR GN2 STANDBY (HANDVALVES CLOSED)	TCP1
	121	10	CLTC	CLQS	START/VERIFY START OF LV-QAL INSPECTION OF MSS PLATFORMS 1 & 2 PER LV-QAL ICL-5 FOR MSS MOVE,	
	261	11	CLTC	BOSC	VERIFY READY TO SUPPORT ESP TRANSPORTER MOVE,	TCP1
	181	12	CLTC	CPDC	PREP AND MOVE ESP/LLP TRANSPORTER TO SERVICE POSITION PER V-36070, REPORT WHEN COMPLETE,	
	261	13	CLTC	BOSC	REQUEST BCPN SWITCH TO CH 161 TO SUPPORT GH2 SYSTEM SECURING,	TCP1
	161	14	C4TC	BCPN	START GH2 SYSTEM SECURING, REPORT WHEN READY TO SUPPORT S-1VB HEX GH2 INTERFACE PURGE,	XB- 240-23
	261	15	C1TC	BOSC	RETURN STAGE MONITOR SHACK AND S-1C STAGE SECURITY BARRIER TO ML ZERO LEVEL,	XB- 240-23 TCP1
	161	16	C4TC	C4PS	START HEX GH2 INTERFACE PURGE PER V-30539, SECT V,	
	171	17	C2TC	C2PV	SECURE PURGE VACUUM OPERATIONS PER V-25311 (L009)	
	181	18	C1TC	CPDC	START WINCH INSTALLATION FOR LLP RAISING,	
	181	19	C1TC	C1IP	CONFIGURE MEASUREMENT PANEL FOR MT01, REPORT WHEN COMPLETE,	B- 300-25
	171	20	C2TC	C2NP	RACS POWER ON	
	121	21	CLTC	B2TM	VERIFY TCE SETUP PER V-28181 (G125)	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 4 HRS 45: 0"	121	22	CLTC	BTMC	VERIFY READY TO SUPPORT TM TAPE RECORDING OF BF1 AND BF2	
	121	23	CLTC	C2IP	RF COUPLER TO ANTENNA	
	121	24	CLTC	BTMC	TM TAPE RECORDING ON	
	121	25	CLTC	C2IP	F1, F2 TRANSMITTERS ON	
	121	26	CLTC	C2IP	FREQ MEAS CAL SWITCH ON	
	151	27	CUTC	CUIP	MEASUREMENT TRANSFER TO AUTO, S-11 BURN TEST AND S-1VB COAST TEST AUTO (60X-607A6 - CCIS PANEL)	
	151	28	CUTC	BGCC	VERIFY/MOUNT MT01 TAPE	
	121	29	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR MT01 (LV MEAS SCAN)	
	121	30	CLTC	C4IP	PRELAUNCH CHECKOUT GROUP -- ON	
	121	31	CLTC	CLIK	ISSUE S-1VB ALL RACS RUN	
	121	32	CLTC	C2NP	RACS POWER ON	
	121	33	CLTC	CLIK	COMMAND S-11 ALL - ALL RUN	
	168	34	CLTC	ALL	STAGE MEASUREMENTS WILL BE INTERRUPTED DURING MT01 (LV MEAS SCAN)	
	121	35	CLTC	CLIK	REQUEST & EXECUTE MT01 (LV MEAS SCAN)	
		35-1			DELETED	

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5 HRS 01 00						
	121	1	CLQS	CLTC	LV-QAL INSPECTION OF MSS PLATFORMS 1 & 2 PER LV-QAL ICL-5 IS COMPLETE,	
		2			NOTE ----- FOR NEXT 15 MIN CSAD REQUIRES CONTROL OF TV CAMERAS 37 & 39,	
	111	3	CLTC	CVTS	VERIFY PREVAILING WINDS DO NOT EXCEED REDLINE VALUES FOR FREE STANDING S/V	TCPI
		3-1			NOTE ----- REDLINE WINDSPEED IS 39 KNOTS PEAK WINDS AT 530 FT ABOVE GROUND LEVEL. IF HIGHER WINDS PREDICTED, DAMPER SWITCHOVER MAY PROCEED ONLY IF BENDING MOMENT ASSESSMENT INDICATES SATISFACTORY CONDITIONS. (LO DIRECTOR'S CONCURRENCE WITH ASSESSMENT IS REQUIRED)	XB-239-27
	121	4	CVTS	CLTC	CLEAR TO DISCONNECT AND RETRACT PRIMARY DAMPER,	TCPI
	161	5	C4TC	S4MM	VERIFY MSS PLATFORM MONITORS ON STATION	
	121	6	CLTC	C1TC	DISCONNECT PRIMARY DAMPER & TILT TSM 3-4 TOWER	
		7			*****WARNING***** * THE FOLLOWING STEP IS * * HAZARDOUS DUE TO ARM * * MOTION * *****	
	181	8	C1TC	CSAD	DISCONNECT PRIMARY DAMPER PER V-36086, REPORT WHEN COMPLETE,	
	181	9	C1TC	CSPP	OPEN LBE OVERRIDE POWER MODULE CIRCUIT BREAKER PER V-31045, REPORT WHEN COMPLETE,	
	181	10	C1TC	LTSM	START TSM 3-4 PROTECTIVE TOWER TILT BACK PER V-86039, REPORT WHEN COMPLETE,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
5 HRS 15:00						
	121	1	CLTC	C1TC	EXTEND S/A'S 2 & 3 AND ALL S/A TIPS	
	181	2	C1TC	CSAC	EXTEND S/A'S 2 & 3, ALL S/A TIPS AND SECURE ARMS,	
		3			*****WARNING***** * * THE FOLLOWING TWO STEPS * * ARE HAZARDOUS DUE TO * * ARM MOTION * * *****	
	118	4	CSAC	CSA2 CSA3	EXTEND S/A'S 2 & 3, ALL S/A TIPS AND SECURE ARMS,	
	118	5	CSAC	CSA1 CSA4 CSA5 CSA6 CSA7 CSA8	EXTEND ARM TIPS & SECURE ARMS,	
	181	6	C1TC	LAS1	HDA EXPLOSIVE RELEASE #1 & #2 POWER MODULES OFF AND VERIFY,	
	151	7	CUTC	LUNW	ST-124M HEATERS TO STANDBY	
	151	8	CUTC	UUPC	MANUALLY ADJUST HIGH PRESSURE REGULATOR AND REDUNDANT REGULATOR FROM 3100 +/- 100 TO 1700 +/- 100 PER IV-36038, REPORT WHEN COMPLETE,	
	181	9	C1TC	CHDA	VERIFY HDA SECONDARY RELEASE POWER SUPPLY #1 AND #2 AVAILABLE OFF, SECURE HDA/SACS PER V-36069, REPORT WHEN COMPLETE,	
	181	10	C1TC	CPDC	SECURE S-1C UMBILICAL PURGE PANEL PER V-26222, REPORT WHEN COMPLETE,	
	181	11	C1TC	LTSM	VERIFY TSM 3-4 PROTECTIVE TOWER RETRACTED TO CLEAR MSS	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 5 HRS 15' 0"	181	12	C1TC	CSAD	VERIFY PRIMARY DAMPER RETRACTED AND LATCHED,	
	121	13	C1TC	CLTC	PRIMARY DAMPER IS DISCONNECTED & TSM TOWER RETRACTED	
	111	14	CLTC	CVTS	REQUEST PEHE PERFORM SNIFFER CHECKS IN S-1C FWD, S-1I AFT, S-1I FWD, S-1VB AFT & 1U/S-1VB FWD AREAS WHEN ACCESS DOORS ARE OPENED,	TCPI
	121	15	CLTC	C2TC C4TC CUTC	VERIFY READY FOR MSS MATE,	
	111	16	CLTC	CVTS	PRIMARY DAMPER IS DISCONNECTED AND TSM TOWER RETRACTED, READY FOR MSS MATE,	TCPI
	181	17	C1TC	CPDC	SECURE FACILITY AIR STANDBY PANEL PER V-26222, REPORT WHEN COMPLETE,	
		18			*****WARNING***** * THE FACILITY AIR SYSTEM * * HAS BEEN PURGED OF GN2 * * AND IS BACK IN NORMAL * * CONFIGURATION, RESUME * * PREVIOUS HAZARD LEVEL, * * *****	
* 5 HRS 30' 0"	121	1	CL1K	CLTC	MT01 IS COMPLETE	
	121	2	CLTC	C1TC C2TC C4TC CUTC	MT01 IS COMPLETE	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 5 HRS 30' 0"	181	3	C1TC	C1IP	MT01 IS COMPLETE, CONFIGURE MEASUREMENT PANEL FOR NORMAL OPERATIONS	B- 300-25
	121	4	CLTC	BTMC	TM TAPE RECORDING OFF	
	171	5	C2TC	C2NP	RACS POWER OFF	
	121	6	CLTC	C2IP	F1, F2 TRANSMITTERS OFF	
	121	7	CLTC	C2IP	RF COUPLER TO AUTO	
	121	8	CLTC	C2IP	FREQ MEAS CAL SWITCH OFF	
	151	9	CUTC	CUIP	MEASUREMENT TRANSFER - OFF S-II BURN TEST & S-IVB COAST TEST - OFF (60X-607A6 - CCIS PANEL)	
	161	10	C4TC	C4IP	PRELAUNCH CHECKOUT GROUP OFF	
	111	11	CLTC	CVTS	RANGE CLEARANCE FOR S-II TM NO LONGER REQUIRED,	TCPI
	121	12	CVTS	CLTC	MSS IS OVER MOUNTS, REPORT WHEN TSM 3-4 TOWER IS ERECTED AND MSS CAN BE LOWERED,	TCPI
	121	13	CLTC	C1TC	ERECT TSM 3-4 TOWER, REPORT WHEN COMPLETE,	
	161	14	C1TC	LTSM	ERECT TSM 3-4 TOWER PER V-36039, REPORT WHEN ERECTED,	
	111	15	CLTC	CVTS	TSM 3-4 TOWER ERECTED AND CLEAR FOR LOWERING MSS ON MOUNTS, NOTIFY CLTC IF MSS MUST BE REPOSITIONED PRIOR TO LOWERING,	TCPI
+ 5 HRS 45' 0"	181	1	C1TC	CSAC	VERIFY S/A 4, 5, 6, 7, & 8 TIPS EXTENDED	
	121	2	C1TC	CLTC	S/A 4, 5, 6, 7, & 8 TIPS EXTENDED AND CLEARED FOR ACCESS DOOR REMOVAL,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 5 HRS 45: 0"						
111		3	CLTC	CVTS	S/A 8 TIP HAS BEEN EXTENDED AND IS OPEN FOR ACCESS,	TCPI
121		4	CLTC	C2TC C4TC CUTC	S/A 4, 5, 6, 7 & 8 TIPS EXTENDED, CLEAR FOR CARRIER SECURING AND ACCESS DOOR REMOVAL,	
		4-1		C2TC	*****WARNING***** * * NO S-II WORK IS TO BE * ALLOWED IN THE S/A 4 * AND S/A 5 UMBILICAL * AREAS, EXCEPT FOR * UMBILICAL SAFING PIN * INSTALLATION, UNTIL THE * UMBILICAL WITHDRAWAL * LANYARDS HAVE BEEN * DETACHED * *****	
161		5	C4TC	S4MF	SAFE FORWARD CARRIER PER V-30539, SECT V, REPORT WHEN COMPLETE,	
161		6	C4TC	S4MA	SAFE AFT CARRIER PER V-30539, SECT V, REPORT WHEN COMPLETE,	
181		7	C1TC	CWCP	SECURE IWS PER V-36113	
171		8	C2TC	U2MU	SECURE S/A 5 UMBILICALS PER V-30029 (M020) TASK 57, REPORT WHEN COMPLETE,	
171		9	C2TC	U2SE	START REMOVAL OF S-II FWD ACCESS DOOR WHEN S/A 5 UMBILICALS ARE SECURED, U2SY START SNIFFER CHECKS WHEN DOOR IS OPEN, REPORT TO C2TC ON CH 171,	
151		10	CUTC	UUVN	START REMOVAL OF IU ACCESS DOOR PER IV-34046,	
121		11	CLTC	LCDC L1PS	POWER DOWN THE 28V POWER SUPPLY (X02-1256A2) IN THE ML COUNTDOWN, REMOVE AUTOSTART PLUG & REAPPLY POWER, REPORT WHEN COMPLETE,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 5 HRS 45' 0"						
	181	12	CSAC	C1TC	S/A'S 2 & 3 HAVE BEEN EXTENDED,	
	121	13	C1TC	CLTC	S/A'S 2 & 3 HAVE BEEN EXTENDED,	
	181	14	C1TC	C1PE	START REMOVAL OF S-IC FWD ACCESS DOOR, START SNIFFER CHECKS WHEN DOOR IS OPEN, REPORT WHEN COMPLETE,	
	121	15	CLTC	C1TC	POSITION AND RAISE LLP,	
	181	16	C1TC	CPDC	POSITION AND RAISE LLP PER V-36070,	
+ 5 HRS 50' 0"						
	181	1	C4TC	S4MA	REMOVE S-IVB AFT ACCESS DOOR PER V-30539, SECT V,	
	181	2	CSAC	C1TC	S/A SYSTEMS ARE SECURED	
	181	3	CTS1	C1TC	ISM SYSTEMS ARE SECURED	
	181	4	C1TC	CHCU	SECURE HCU PER V-36079	
+ 6 HRS 0' 0"						
	121	1	CVTS	CLTC	MSS IS ON MOUNTS READY FOR AUX DAMPER CONNECTION,	TCP1
		2			NOTE ----	
					FOR THE NEXT 15 MIN CSAD REQUIRES CONTROL OF CAMERA 37,	
	121	3	CLTC	C1TC	CONNECT AUX DAMPER,	
	181	4	C1TC	CSAD	CONNECT AUX DAMPER PER V-36086, REPORT WHEN COMPLETE,	
	181	5	C1TC	CSAC	DISCONNECT & SECURE Q-BALL COVER RETRACT SYSTEM PER V-36112,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 6 HRS 01 00"	181	6	C1TC	C1PE	VERIFY S-1C FWD ACCESS DOOR REMOVAL AND SNIFFER CHECKS ARE COMPLETE,	
	121	7	C1TC	CLTC	S-1C FWD ACCESS DOOR REMOVED AND SNIFFER CHECKS ARE COMPLETE,	
	111	8	CLTC	CVTS	VERIFY CPSS HAS APPROVED LV ACCESS THROUGH S/A 2 (S-1C FWD)	TCPI
	121	9	CLTC	C1TC	INSTALL S-1C FWD SKIRT ACCESS KIT AND STAGE LIGHTING FOR S&A OPERATION	
	181	10	C1TC	C1PE C1NE	INSTALL S-1C FWD ACCESS KIT, STAGE LIGHTING & OIS FOR S&A OPERATION PER V-21035, V-24010 & V-24011	
	171	11	U2SE	C2TC	S-11 FWD ACCESS DOOR IS OPEN & SNIFFER CHECKS HAVE BEEN ACCOMPLISHED	
+ 6 HRS 151 00"	121	1	CVTS	CLTC	STANDBY FOR OIS TRANSFER FROM CRAWLER TRANSPORTER TO PAD	TCPI
	121	2	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR MSS OIS CONNECTION TO PAD,	
	151	3	UUVN	CUTC	IU ACCESS DOOR IS REMOVED,	
	161	4	C4TC	S4SY	VERIFY SNIFFER CHECKS COMPLETE.	
	121	5	CLTC	C2TC C4TC CUTC	VERIFY ACCESS DOORS REMOVED AND SNIFFER CHECKS ARE COMPLETE, (IU, S-1VB AFT, S-11 FWD)	
	121	6	CLTC	CUTC	REMOVE STAGE POWER; REPORT WHEN COMPLETE,	

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* 6 HRS 151 0"	161	7	CUTC	C4TC	VERIFY READY FOR REMOVAL OF IU STAGE POWER,	
	151	8	CUTC	CUNP	REMOVE IU STAGE POWER PER V-21223; 6D110 BUS MUST REMAIN UP TO PROVIDE SWITCH SELECTOR POWER, REPORT WHEN COMPLETE,	
	111	9	CLTC	CVTS	VERIFY CPSS HAS APPROVED LV ACCESS THROUGH S/A 5, 6 & 7 DOORS, (S-II FWD, S-IVB AFT & IU/S-IVB FWD)	TCPI
	121	10	CLTC	C2TC C4TC	INSTALL S-II & S-IVB FWD ACCESS KIT	
	171	11	C2TC	U2SI	START INSTALLATION OF S-II FWD ACCESS KIT PER V-26489 (G138) AS REQUIRED FOR S&A AND S-IVB BATTERY REMOVAL, (CD ONLY)	
	161	12	C4TC	S4MF	START INSTALLATION OF S-IVB FWD ACCESS KIT (REQUIRED FOR S&A AND S-IVB AND IU BATTERY REMOVAL) PER V-30539, SECT V,	
	121	13	C1TC	CLTC	AUX DAMPER IS CONNECTED,	
	111	14	CLTC	CVTS	AUX DAMPER IS CONNECTED,	TCPI
	121	1	CVTS	CLTC	MSS OIS CONNECTED TO PAD,	TCPI
	121	2	CLTC	C2TC	S/A 3 IS CONNECTED & TIP EXTENDED, OPEN AFT DOOR,	
	171	3	C2TC	U2SE	S/A 3 TIP IS EXTENDED, OPEN S-II AFT ACCESS DOOR, U2SY START SNIFFER CHECKS WHEN DOOR IS OPEN, REPORT RESULTS TO C2TC ON CH 171,	
	171	4	C2TC	U2MU	SECURE S/A 4 UMBILICALS PER V-30029 (M020) TASK 56, REPORT WHEN COMPLETE,	
* 6 HRS 301 0"						

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+ 6 HRS 30' 0"	261	5	C2TC	BOSC	S-II WILL BE READY FOR LH TANK H2 CONTENT GHE SAMPLES (2 EACH) ON S/A 5 AND LUT 180 FT LEVEL AND A7-71 LH HEAT EXCHANGER H2 CONTENT GHE SAMPLES (2 EACH) ON LUT 180 FT LEVEL IN 30 MINUTES (LVN-8, LVN-15)	TCPI XB- 240-23
+ 6 HRS 45' 0"	171	1	U2SE	C2TC	S-II AFT ACCESS DOOR IS OPEN & SNIFFER CHECKS HAVE BEEN ACCOMPLISHED	
	121	2	C2TC	CLTC	S-II AFT ACCESS DOOR IS OPEN AND SNIFFER CHECKS HAVE BEEN ACCOMPLISHED,	
	111	3	CLTC	CVTS	VERIFY CPSS HAS APPROVED LV ACCESS THROUGH S/A 3 DOOR, (S-II AFT)	TCPI
	121	4	C1TC	CLTC	REQUEST PCMU BE RETURNED TO PAD BY SUPPORT,	
	261	5	CLTC	BOSC	RETURN PCMU TO PAD	TCPI
+ 7 HRS 0' 0"	171	1	C2TC	C2GP	SECURE GROUND PNEUMATICS PER V-30029 (M020) TASK 56. REPORT WHEN COMPLETE,	
+ 7 HRS 15' 0"	161	1	C4TC	S4MF	VERIFY PARTIAL FWD ACCESS KIT INSTALLED FOR S&A AND S-IVB & IU BATTERY REMOVAL,	
	121	2	CLTC	C2TC C4TC	VERIFY S-II & S-IVB ACCESS KITS ARE INSTALLED & READY FOR S&A OPERATIONS	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 7 HRS 151 0"						
161		3	C4TC	C4PS	VERIFY TANK PURGES COMPLETE AND SAMPLES SATISFACTORY,	
181		4	C1TC	C1PE	VERIFY S-IC FWD SKIRT ACCESS KIT IS INSTALLED FOR S&A OPERATION,	
121		5	CLTC	C1TC	VERIFY S-IC FWD SKIRT ACCESS KIT IS INSTALLED FOR S&A OPERATION,	
111		6	CLTC	CVTS	CLEAR CONTROL AREA FOR LV S&A OPERATIONS	TCP!
188		7	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL, EXCEPT PERSONNEL WORKING IN THE CSM, CLEAR THE CONTROL AREA FOR LV S&A ORDNANCE OPERATIONS;	TCP!
		7-1			*****WARNING***** * * THE CONTROL AREA FOR LV * * S&A DISCONNECTION IS * * THE S/V INTERIOR EXCEPT * * FOR THE CSM AND S-IC * * BOATTAIL, * * *****	
121		8	CLTC	C1TC C2TC C4TC CUTC	SPECIAL CONTROL AREA IS OPEN FOR PERSONNEL REQUIRED FOR S&A OPERATIONS,	
161		9	C4TC	C4SM	START ORDNANCE PANEL SETUP PER V-30539, SECT V, REPORT WHEN COMPLETE,	
171		10	C2TC	02PM	START PROPELLANT FILL SECURING OPERATIONS PER V-30029 (M020) TASK 59, REPORT WHEN COMPLETE,	
181		11	C1TC	CPDC	VERIFY LLP RAISING COMPLETE,	
		12			*****WARNING***** * * THE FOLLOWING STEP IS * * HAZARDOUS * * *****	

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* 7 HRS 13: 0"						
181		13	C1TC	C1PE	START F-1 ENGINE SECURING PER V-34012, REPORT WHEN COMPLETE,	
181		14	C1TC	CPDC	RAISE ESP PER V-36070	
181		15	C1TC	CHDA	INSERT HDA SAFETY PINS, REPORT WHEN COMPLETE,	
181		16	C1TC	C1PE	REMOVE BASE HEAT SHIELD ACCESS PANEL FOR S-1C AFT BATTERY REMOVAL,	
121		17	C1TC	CLTC	LLP RAISING COMPLETE, ESP RAISING STARTED,	
261		18	C1TC	BOSC	CLOSE CIRCUIT BREAKERS CB10, 12 & 14 IN PANEL L-22, ROOM 2A,	TCPI
171		19	C2TC	C2DP	START ORDNANCE AND PD PANEL CONFIGURATION PER V-30029 (M020) TASK 28,	
171		20	C2DP	C2TC	S-11 ORDNANCE AND PD PANEL READY FOR S&A OPERATIONS	
* 7 HRS 30: 0"						
121		1	CLTC	CUTC	PREPARE IU STAGE FOR RF SILENCE AND CONTROLLED SWITCHING PER V-31062, APPENDIX C,	
181		2	C1TC	C1DP	VERIFY STATUS SYSTEM SWITCH SAFE AND S&A SWITCH SAFE,	
181		3	C1TC	C1DP	VERIFY S&A SAFE INDICATION ON,	
181		4	C1TC	C1NP	VERIFY/PLACE SWITCH SELECTOR INHIBIT TO ON AND RESET STAGE LOGIC, VERIFY STAGE LOGIC ZERO ON,	
121		5	CLTC	C1TC C2TC C4TC CUTC	VERIFY READY FOR RF SILENCE & LV CONTROLLED SWITCHING	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
* 7 HRS 30' 0"						
		5-1		CLTC C1TC	*** NOTE S-IC LOX TANK VENT VALVE HARDWARE SWITCHING WILL BE REQUIRED DURING S&A OPERATIONS,	
111	6		CLTC	CVTS	REQUEST RF SILENCE, LV CONTROLLED SWITCHING AND LV/SC INTERFACE CONTROLLED SWITCHING ARE NOW IN EFFECT,	TCPI
188	7		CVTS	PA	RF SILENCE IS NOW IN EFFECT, CONTROLLED SWITCHING ON THE LV AND ACROSS THE LV/SC INTERFACE IS NOW IN EFFECT, SWITCHING REQUESTS ARE TO BE COORDINATED THROUGH TEST CONDUCTORS WITH CVTS,	TCPI
181	8		C1TC	C1PE C1NE	VERIFY READY FOR S&A OPERATIONS,	
121	9		CLTC	C1TC C2TC C4TC	VERIFY READY TO START S&A OPERATIONS,	
111	10		CLTC	CVTS	REQUEST CPSS VERIFY READY FOR PD DETONATOR AND CDF DISCONNECTION,	TCPI
121	11		CLTC	C1TC C2TC C4TC	DISCONNECT PD DETONATORS & CDF,	
181	12		C1TC	C1NE C1PE	DISCONNECT PD DETONATORS AND CDF PER V-21009 & V-29003, AND CONNECT PD PULSE SENSORS, START S&A SCRUB OPERATIONS PER V-29003, REPORT WHEN COMPLETE,	
171	13		C2TC	U2HO U2EO	DISCONNECT PD BBW FIRING CABLES & CDF, REINSTALL PD PULSE SENSORS AND CONNECT PER V-30029 (M020) TASK 60,	
171	14		C2TC	U2HO	REMOVE THE FLIGHT S&A DEVICE AND REINSTALL THE INERT S&A DEVICE PER V-29024 (K008)	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 7 HRS 30' 0"	161	15	C4TC	C4SM	DISCONNECT CDF & RECONFIGURE S&A PER V-30539, SECT V,	
+ 7 HRS 45' 0"	181	1	C1TC	C1PE	VERIFY BASE HEAT SHIELD ACCESS PANEL REMOVED, START INSTALLATION OF QUAD "A" PLATFORMS NO, 6 & 7,	
	181	2	C1TC	CPDC	VERIFY ESP RAISING COMPLETE,	
	121	3	C1TC	CLTC	ESP RAISING COMPLETE,	
+ 8 HRS 15' 0"	121	1	CLTC	C1TC C2TC C4TC	VERIFY S&A OPERATIONS COMPLETE & READY TO REMOVE RF SILENCE & CONTROLLED SWITCHING,	
	111	2	CLTC	CVTS	S&A OPERATIONS COMPLETE, LV READY TO REMOVE RF SILENCE & CONTROLLED SWITCHING	TCPI
	188	3	CVTS	PA	LV S&A OPERATIONS ARE COMPLETE, RF SILENCE & CONTROLLED SWITCHING ARE NO LONGER IN EFFECT, THE CONTROL AREA IS OPEN FOR NORMAL WORK,	TCPI
	151	4	CUTC	SUVM SUVE	INSTALL IU LIGHTS & OIS, CONNECT LIGHTING SYSTEM GN2 PURGE PER IV-26178, REPORT WHEN COMPLETE,	
	181	5	CWCP	C1TC	IWS SECURING COMPLETE,	
	121	6	CLTC	C2TC	REMOVE STAGE POWER, REPORT WHEN COMPLETE,	
	171	7	C2GP	C2TC	GROUND PNEUMATICS SECURED,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 8 HRS 15' 0"	171	8	C2TC	C2GP	UPON COMPLETION OF STAGE ACCESS PLATFORM INSTALLATION, START PRESSURIZATION SYSTEM 7 PSIG LEAK CHECKS PER V-30029 (M020) TASK 83, REPORT WHEN COMPLETE,	
	171	9	C2TC	C2SP	UPON COMPLETION OF STAGE ACCESS PLATFORM INSTALLATION AND WHEN STAGE AND ESE POWER IS AVAILABLE, START ACTUATION PRESSURE LINE LEAK CHECKS PER V-30029 (M020) TASK 84, REPORT WHEN COMPLETE,	
	171	10	C2TC	C2GP	AFTER GROUND PNEUMATICS ARE SECURED, REMOVE THE ATMOSPHERIC SENSE LINES (V7-490876-1098 110), CAP ORIFICES AND PACKAGE LINES FOR RE-INSTALLATION,	
	171	11	C2TC	C2NP	SECURE S-II STAGE AND ESE POWER PER V-21103 (B011)	
	171	12	C2TC	C2SI	CONTINUE INSTALLATION OF FWD ACCESS KIT PER V-26489 (G138) AS REQUIRED FOR S-IVB BATTERY REMOVAL (CD ONLY)	
+ 8 HRS 30' 0"	151	1	CUTC	SUVM	INSTALL COMPONENT HANDLING EQUIPMENT PER IV-34047,	
	121	2	CLTC	C4TC	REMOVE STAGE POWER, REPORT WHEN COMPLETE,	
	161	3	C4TC	C4ES	SECURE POWER AND DISCONNECT FORWARD BATTERIES PER V-30539, SEC V, REPORT WHEN COMPLETE,	
	161	4	C4TC	S4MA	INSTALL S-IVB AFT ACCESS KIT PER V-30539, SECT V,	
	121	5	C4TC	CLTC	S-IVB POWER IS SECURED, ID GROUND POWER IS NO LONGER REQUIRED,	
	121	6	CLTC	CUTC	REMOVE GROUND POWER, REPORT WHEN COMPLETE,	

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+ 8 HRS 30' 0"						
	151	7	CUTC	CUNP	REMOVE IU GROUND POWER PER V-21223, REPORT WHEN COMPLETE,	
	121	8	CLTC	C1TC	INSTALL S-IC FWD SKIRT ACCESS KIT AND STAGE LIGHTING FOR S-II BATTERY REMOVAL,	
	181	9	C1TC	C1PE C1NE	INSTALL OIS, STAGE LIGHTING AND S-IC FWD SKIRT ACCESS KIT TO PROTECT S-IC DURING S-II FLIGHT BATTERY REMOVAL PER V-21035, V-24010 & V-24011,	
+ 8 HRS 45' 0"						
	161	1	C4TC	S4MF	START S-IVB FWD BATTERY REMOVAL PER V-30539, SECT V,	
	151	2	SUVM	CUTC	COMPONENT HANDLING EQUIPMENT INSTALLATION COMPLETE,	
+ 9 HRS 15' 0"						
	171	1	U2SI	C2TC	FWD SKIRT ACCESS KIT INSTALLED AS REQUIRED TO SUPPORT S-IVB BATTERY REMOVAL, (CD ONLY)	
	161	2	C2TC	C4TC	S-II READY FOR S-IVB BATTERY REMOVAL, (CD ONLY)	
	121	3	CLTC	C1TC	VERIFY OK FOR S-II TO PROCEED WITH AFT ACCESS KIT INSTALLATION,	
	121	4	CLTC	C2TC	START S-II AFT ACCESS KIT INSTALLATION FOR BATTERY REMOVAL, (CD ONLY)	
	171	5	C2TC	U2SI	INSTALL S-II AFT KIT PER V-26489 (G138) AS REQUIRED FOR BATTERY REMOVAL, (CD ONLY),	
	161	6	S4MA	C4TC	ACCESS KIT INSTALLATION SATISFACTORY FOR BATTERY REMOVAL,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+ 9 HRS 151 0"	161	7	C4TC	S4ES	DISCONNECT AFT BATTERIES AND REMOVE ESE POWER PER V-30539, SECT V, REPORT WHEN COMPLETE,	
	161	8	C4TC	S4MA	REMOVE S-IVB AFT BATTERY PER V-30539, SECT V,	
	171	9	U2PE	C2TC	PROPELLANT FILL SECURING OPERATIONS ARE COMPLETE,	
	181	10	C1TC	C1PE	VERIFY E-1 ENGINE SECURING COMPLETE PER V-34012,	
+ 9 HRS 451 0"	171	1	C1TC	C2TC	S-1C READY FOR S-1I BATTERY REMOVAL, (CD ONLY)	
	181	2	C1TC	C1PE	VERIFY QUAD A PLATFORMS 6 & 7 INSTALLED,	
	181	3	C1TC	C1NE	REMOVE S-1C AFT FLIGHT BATTERIES PER V-21204, (CD ONLY)	
	121	4	C4TC	CLTC	REQUEST MSS PLAT 2 BE CLOSED AT STATION 3034,	B- 300-25
	111	5	CLTC	CVTS	S-IVB READY FOR MSS PLAT 2 CLOSE AT STATION 3034 (TO BE COMPLETE IN 15 MIN),	TCPI
	161	6	S4MF	C4TC	S-IVB FWD BATTERY REMOVAL COMPLETE,	
+10 HRS 01 0"	181	1	C1TC	C1PE	INSTALL FORWARD UMBILICAL CARRIER PER V-24320,	
	151	2	CUTC	SUVM	START PARTIAL REMOVAL OF THERMAL ISOLATION BOTTOM SHROUDS PER V-31062, PART VI,	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+10 HRS 0' 0"						
	121	3	C1TC	CLTC	REQUEST BOSC PROVIDE SUPPORT TO RECONNECT PCMU.	
	261	4	CLTC	BOSC	VERIFY READY TO SUPPORT PCMU RECONNECTION.	TCPI
+10 HRS 20' 0"						
	151	1	CUTC	SUVM	REMOVE IU BATTERIES PER IV-34047.	
+10 HRS 45' 0"						
	171	1	U2SI	C2TC	S-II AFT ACCESS KIT INSTALLED FOR BATTERY REMOVAL.	
	171	2	C2TC	U2LN	START S-II BATTERY REMOVAL PER V-21249 (B016)	
	171	3	C2TC	U2SI	CONTINUE AFT ACCESS KIT INSTALLATION PER V-26489 (G138) AS REQUIRED FOR RECYCLE.	
	171	4	C2TC	U2MH	START S-II ENGINE ACTUATION SECURING OPERATIONS PER V-30029 (M020) TASK 63, REPORT WHEN COMPLETE.	
	171	5	C2TC	U2J2	START PROPELLANT FEED SYSTEM VACUUM JACKETED LINE CHECKS PER V-24116 (J001) AS ACCESS IS AVAILABLE, REPORT WHEN COMPLETE.	
	181	6	C1TC	C1PE	RECONNECT PCMU/FUSU PER V-24327, REPORT WHEN COMPLETE.	
	161	7	S4MA	C4TC	S-IVB AFT BATTERY REMOVAL COMPLETE.	
	161	8	C4TC	S4MA	CONTINUE AFT ACCESS KIT INSTALLATION AS REQUIRED FOR SCRUB AND RECYCLE.	
	121	9	C4TC	CLTC	S-IVB FLIGHT BATTERY REMOVAL COMPLETE.	
	161	10	C4TC	S4CE	CONNECT S-IVB TM RERADIATION SYSTEM PER V-30539, SECT V.	

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TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+10 HRS 45' 0"	151	11	CUTC	SUTM	INSTALL IU TM RERADIATION ANTENNA PER V-31062, PART VI,	
+11 HRS 0' 0"	121	1	CVTS	CLTC	REMOVE W/R MSS DOOR LOCK,	TCPI
	121	2	CLTC	C1TC	REMOVE W/R MSS DOOR LOCK,	
	181	3	C1TC	CSA9	REMOVE W/R MSS DOOR LOCK, REPORT WHEN COMPLETE,	
+11 HRS 15' 0"					DELETED 4 SEQUENCES	B- 300-2
+11 HRS 45' 0"	181	1	C1TC	C1NE	VERIFY S-IC FLIGHT BATTERIES REMOVED, (CD ONLY)	B- 300-25
	121	2	C1TC	CLTC	S-IC FLIGHT BATTERIES REMOVED, (CD ONLY)	B- 300-25
	181	3	C1TC	C1PE	SECURE STAGE PNEUMATICS PER V-24327, REPORT WHEN COMPLETE,	
	161	4	C4TC	S4MF	VERIFY SHE PLATFORM AND ONE STEP HAS BEEN INSTALLED OR INSTALL PER V-30539 SECT V AND APP D,	
	151	5	CUTC	SUTM	PIN ALL FLOWMETERS; REPORT WHEN COMPLETE,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+11 HRS 45' 0"	151	6	SUVM	CUTC	IU BATTERY REMOVAL COMPLETE.	
	151	7	CUTC	SUVM	INSTALL ST-124M PURGE LINE, SUBLIMATOR COVER AND PLENUM CHECK VALVE PER V-31062, PART VI.	
	151	8	CUTC	SUVE	INSTALL SHE IU CABLE RACK COVER ASSY, REPORT WHEN COMPLETE.	
	121	9	CUTC	CLTC	IU MECHANICAL TASKS ARE COMPLETE, READY FOR LM SHE GSE INSTALLATION.	
	111	10	CLTC	CVTS	IU READY FOR LM SHE GSE INSTALLATION.	TCPI
		11			DELETED	B- 300-25
		12			DELETED	B- 300-25
		13			DELETED	B- 300-25
	181	14	C1TC	C1NE C1PE	VERIFY FORWARD UMBILICAL CARRIER CONNECTION IS COMPLETE.	
	121	15	C1TC	CLTC	S-1C FORWARD UMBILICAL CARRIER CONNECTION IS COMPLETE.	
	181	16	C1TC	B1RF	SCHEDULE AND COORDINATE S/A 2 DRSCS RF AND AUDIO CABLE RETEST PER V-21035, REPORT WHEN COMPLETE.	B- 299-24
+12 HRS 15' 0"	151	1	CUTC	SUVM	VERIFY ST-124M PURGE LINE, SUBLIMATOR COVER AND PLENUM CHECK VALVE INSTALLED.	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+12 HRS 15' 0"	181	2	C1TC	C1PE	VERIFY PNEUMATICS SECURE AND READY TO REMOVE STAGE POWER;	
	181	3	C1TC	C1NE	REMOVE S-1C STAGE POWER PER V-21097, REPORT WHEN COMPLETE;	
	121	4	C1TC	CLTC	S-1C STAGE POWER HAS BEEN REMOVED;	
	171	5	CLTC	CUTC	SECURE LV ELECTRICAL SUPPORT EQUIPMENT PER V-31062, APPENDIX A, REPORT WHEN COMPLETE;	
	161	6	S4CE	C4TC	S-1VB TM RERADIATION CONNECTION TO MSS COMPLETE;	
	121	7	C4TC	CLTC	S-1VB TM RERADIATION CONNECTION TO MSS COMPLETE;	
+12 HRS 45' 0"	171	1	U2LN	C2TC	S-11 BATTERY REMOVAL COMPLETE, (CD ONLY)	
	121	2	C2TC	CLTC	S-11 BATTERY REMOVAL COMPLETE, (CD ONLY)	
	111	3	CLTC	CVTS	LV BATTERY REMOVAL IS COMPLETE;	TCPI
	121	4	CVTS	CLTC	IU WATER DELUGE SYSTEM IS DEACTIVATED, CLEAR TO INSTALL IU WATER NOZZLE, REPORT WHEN COMPLETE, (IU WATER DELUGE/FACILITIES HANDVALVES V-4 CLOSED AND V-128 OPEN, SYSTEM ENABLE AND ARM SWITCHES ARE OFF);	TCPI
	121	5	CLTC	C4TC	IU WATER DELUGE SYSTEM IS DEACTIVATED, CLEAR TO INSTALL IU WATER NOZZLE, REPORT WHEN COMPLETE, (IU WATER DELUGE/FACILITIES HANDVALVES V-4 CLOSED AND V-128 OPEN, SYSTEM ENABLE AND ARM SWITCHES ARE OFF);	TCPI
	161	6	C4TC	S4MF	INSTALL IU WATER DELUGE NOZZLE PER V-30539 SECT V, REPORT WHEN COMPLETE;	

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+13 HRS 01 0"	161	1	C4TC	C4PS	RECONFIGURE LH2 CVS AND NPV NOZZLE COVERS TO CHECKOUT CONFIGURATION, REPORT WHEN COMPLETE,	
+13 HRS 15 0"	181	1	C1TC	C1PE C1NE	VERIFY S-IC FWD SKIRT ACCESS KIT, STAGE LIGHTING & OIS INSTALLATION COMPLETED,	
	121	2	C1TC	CLTC	S-IC FWD SKIRT ACCESS KIT, STAGE LIGHTING & OIS INSTALLATION COMPLETE,	
	121	3	C4TC	CLTC	REQUEST MSS PLAT 2 BE POSITIONED TO STATION 2697 FOR RECONFIGURATION OF LOX NPV NOZZLE COVERS,	
	111	4	CLTC	CVTS	S-IVB READY FOR MSS PLAT 2 MOVE TO STATION 2697 (TO BE COMPLETE IN 15 MINUTES),	TCPI
+13 HRS 30 0"	161	1	C4TC	C4PS	RECONFIGURE LOX NPV NOZZLE COVERS TO CHECKOUT CONFIGURATION, REPORT WHEN COMPLETE,	
	121	2	C2TC	CLTC	REQUEST MSS PLAT 1 BE POSITIONED AT LV STA 1800 FOR S-II INSULATION INSPECTION,	
	111	3	CLTC	CVTS	REQUEST MSS PLAT 1 BE POSITIONED AT LV STA 1800 FOR S-II INSULATION INSPECTION,	TCPI
+13 HRS 45 0"	171	1	U2SI	C2TC	AFT ACCESS KIT INSTALLATION FOR RECYCLE IS COMPLETE (360 DEG AT STA 30, 90 DEG AT STA 114),	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+13 HRS 45' 0"	121	2	C2TC	CLTC	S-II AFT KIT INSTALLATION COMPLETE,	
	181	3	C1TC	CSAC	VERIFY Q-BALL SECURING COMPLETE,	
+14 HRS 0' 0"	121	1	CVTS	CLTC	REDUCE S/A 8 ECS FLOW RATE TO MINIMUM, REPORT WHEN COMPLETE,	TCPI
	121	2	CLTC	C1TC	REDUCE S/A 8 ECS FLOW RATE TO MINIMUM, REPORT WHEN COMPLETE,	
	181	3	C1TC	CECS	ESTABLISH MINIMUM POSSIBLE FLOW FOR SM DUCT AND JUMPER LIMIT SWITCH ON FLOW CONTROL VALVE, REPORT WHEN COMPLETE,	
	121	4	CVTS	CLTC	INSTALL S/A 8 ECS "Y", REPORT WHEN COMPLETE,	TCPI
	121	5	CLTC	C1TC	INSTALL S/A 8 ECS "Y", REPORT WHEN COMPLETE,	
	181	6	C1TC	CSAB	RECONFIGURE S/A 8 ECS DUCT TO STANDBY CONFIGURATION, REPORT WHEN COMPLETE,	
	171	7	U2J2	C2TC	VACUUM JACKETED LINE CHECKS COMPLETE,	
	121	8	C2TC	CLTC	VACUUM JACKETED LINE CHECKS ARE COMPLETE	
	171	9	U2MH	C2TC	S-II ENGINE ACTUATION SYSTEM SECURING OPERATIONS COMPLETED,	
	171	10	C2TC	U2EC	START ECS INSPECTION PER V-30029 (M020) TASK 11, REPORT WHEN COMPLETE,	
+15 HRS 0' 0"	171	1	U2EC	C2TC	ECS INSPECTION COMPLETE,	

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+15 HRS 30' 0"						
	121	1	CVTS	CLTC	INCREASE S/A 8 ECS FLOW RATE TO 100 LB/MIN,	TCPI XB-242-21
	121	2	CLTC	C1TC	INCREASE S/A 8 ECS FLOW RATE TO 100 LB/MIN,	TCPI XB-242-21
	181	3	C1TC	CECS	INCREASE S/A 8 ECS FLOW RATE TO 100 LB/MIN,	TCPI XB-242-21
+15 HRS 45' 0"						
	121	1	CVTS	CLTC	MSS PLAT 1 IS AVAILABLE FOR ACCESS.	TCPI
	121	2	CLTC	C2TC	MSS PLAT 1 IS AVAILABLE FOR S-II STAGE INSULATION INSPECTION,	
	171	3	C2TC	C2PV	START CLOSEOUT OF MSS PLAT 1 PER V-30029 (M020) TASK 9,	
	171	4	C2TC	C2PV	START INSPECTION OF S-II INSULATION UTILIZING MSS PLAT 1,	
	171	5	C2TC	C2SP	MSS PLAT 1 IS AVAILABLE, REINSTALL THE ENGINE CUTOFF SENSOR CAPS & STREAMERS, REPORT WHEN COMPLETE,	
+16 HRS 0' 0"						
	188	1	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR ALSEP FCA REMOVAL. RADIATION AREA CONTROL IS STILL IN EFFECT,	TCPI
		1-1			*****WARNING***** * * THE CONTROL AREA FOR * ALSEP FCA REMOVAL * CONSISTS OF THE SLA, * IU, S-IVB FWD, S/A 7 * AND A 10 FT PATHWAY * DOWN THE MSS TO THE PAD * APRON, * *****	TCPI

TIME	COMM. CH.	SEQUENCE	COMMAND STA.	RESPONSE STA.	DESCRIPTION	REMARKS
+16 HRS 01 00	121	2	CVTS	CLTC	DECREASE IU ECS FLOW RATE TO 135 LB/MIN.	TCPI
	121	3	CLTC	C1TC	DECREASE IU ECS FLOW RATE TO 135 LB/MIN.	
	181	4	C1TC	CECS	DECREASE IU ECS FLOW RATE TO 135 LB/MIN, REPORT WHEN COMPLETE,	
+18 HRS 01 00	188	1	CVTS	PA	RADIATION AREA CONTROL IS NO LONGER IN EFFECT,	TCPI
	121	2	CVTS	CLTC	ECS CONFIGURED FOR GN2 STANDBY WITH HANDVALVES CLOSED IS NO LONGER REQUIRED,	TCPI
	121	3	CLTC	C1TC	SECURE ECS FROM ALSEP SUPPORT,	
	181	4	C1TC	CECS	SECURE ECS FROM ALSEP SUPPORT,	
	261	5	C1TC	BOSC	LOW PRESSURE GN2 SUPPORT NO LONGER REQUIRED BY ECS,	TCPI
+19 HRS 01 00	188	1	CVTS	PA	ALL NON-ESSENTIAL PERSONNEL ARE TO CLEAR THE CONTROL AREA FOR LM SHE VENT,	TCPI
		1-1			*****WARNING***** * THE CONTROL AREA FOR LM * * PROPELLANT VENT LINE * * CONNECTION CONSISTS OF * * THE AREA INTERNAL TO * * THE SLA, IU & S-IVB * * FWD, * *****	TCPI

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+24 HRS 01 00	188	1	CVTS	PA	LM SHE VENT IS COMPLETE, THE CONTROL AREA IS OPEN FOR NORMAL WORK,	TCPI
END OF TEST PROCEDURE V-20060, VOL III						

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 REGISTE, B. J. LV-GDC-31, VAB 3D6 1
 HARPER, R. Z. LV-GDC-31, VAR 3D8 3
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 CONAWAY, J. D. LV-INS-A, LCC 2R19 4
 MC MATH, D. LV-INS-1, LCC 2R23 1
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 FANNIN, L. E. LV-MEC, O&C 2014 3
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 COOK, H. D. LV-PLN-13A 2
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 BELL, J. H. LV-TMO-A, LCC 2R18 2
 MC PHERSON, G. MAS, NASA HQS, ZIP 20546 8
 HICKEY, W. P. MAS-4, NASA HQS, ZIP 20546 1
 MSFC REPOSITORY MS-D, HOSC 1
 LEE, C. H. MSO 1321 2
 (MISSION DIRECTOR) BOX 2500, DAYTONE BEACH OPS 1
 CAHALAN, P. S. RCC-CKAFS, M/U 5050 2
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 SELLS, H. R. S&E-ASTR-SI 5
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 MOSES, C. S. SO-OPN-1, LCC 1P12A 1
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 BRANTLEY, R. A. SO-TSD-402, LCC 1P9 1
 COOK, J. P. TS-NTS-2 1
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NOTE

TO ARRANGE CORRECTIONS,
 CHANGES, ADDITIONS OR
 DELETIONS, PLEASE SUBMIT AN
 AVO TO LV-OMO-1, LCC 2R17.

DELIVER ALL EXTRAS TO LCC 2R17.

DELIVER ORIGINALS TO VAB 2L3 (J. C. REED)

LIST REVISED 1/5/71