

Payload Powerdown

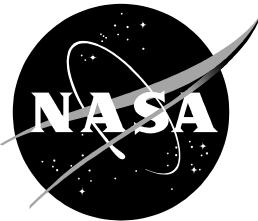
STS-120

**Mission Operations Directorate
Operations Division**

**Final, Rev A
September 11, 2007**

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas



United Space Alliance

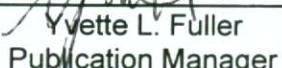
JSC-48097-120

MISSION OPERATIONS DIRECTORATE

**PAYLOAD POWERDOWN
STS-120**

FINAL, REVISION A
September 11, 2007

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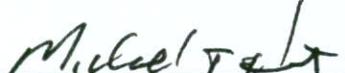
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PL PWR/120/FIN A

Incorporates the following:
482#: PL PWR-0114
PL PWR-0115

AREAS OF TECHNICAL RESPONSIBILITY

Publication Manager	DO35/Y. Fuller	281-244-1174
Alternate Publication Manager	DO35/L. Giles	281-244-9068
ORB PWRDNS	DF73/C. Sweitzer	281-483-6355
PL PWRDN	DO5/I. Kozhukhov	281-483-1701

NOTES

1. Section 1 of this book is inserted at the back of the Ascent Pocket Checklist.
2. Sections 2 and 3 of this book are inserted at the back of the Orbit Pocket Checklist.
3. Section 4 of this book is inserted at the back of the Entry Pocket Checklist.

PAYLOAD POWERDOWN
STS-120

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REV A	09/11/07

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* – Omit from flight book

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PL PWR/120/FIN A

PL PWRDN – ASCENT

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PL PWRDN
ASC

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PL 1-1

PL PWR/120/A/FIN A

**PL PWRDN
ASC**

PL PWRDN MATRIX

PROCEDURE	ACTION
PWRDN FOR LOSS OF:	
2 CAB FANS	N/A
CAB PRESS	
(MINOR PWRDN; from step 4)	N/A
(MAJOR PWRDN; from step 5)	N/A
2 H2O LOOPS	
[PLT PWRDN, SYS AOA, <u>2 H2O LOOPS (AOA);</u> (CDR/PLT PWRDNS)]	N/A
(POST OMS-2)	N/A
1 FREON LOOP	N/A
HI LOAD EVAP	N/A
2 FREON LOOPS	
[PLT PWRDN, SYS AOA, <u>2 FREON LOOPS (AOA);</u> (CDR/PLT PWRDNS)]	N/A
(POST OMS-2)	N/A
FES/1 FC	N/A
2nd FC	N/A
MN BUS UNDERVOLTS/FC VOLTS	
(from step 6; permanent loss of PL PRI)	N/A
(from step 14; temporary loss of PL PRI)	N/A

ACTION

A	PWRDN	PWRUP
N/A		N/A

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PL 1-2

PL PWR/120/A/FIN A

PL PWRDN – ORBIT

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PL PWRDN
ORB

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PL 2-1

PL PWR/120/O/FIN A

**PL PWRDN
ORB**

PL PWRDN MATRIX

PROCEDURE	ACTION
PWRDN FOR LOSS OF:	
HI LOAD EVAP	N/A
1 FREON LOOP	PP3A*,PP3B** (on MCC call) as reqd
1 FC	PP3A*,PP3B** (on MCC call) as reqd until ORB kW < 17
FES (ON ORBIT)	N/A
(DEORBIT PREP)	N/A
MN BUS UNDERVOLTS/FC VOLTS	
(from step 6; permanent loss of PL PRI)	N/A
(from step 17; temporary loss of PL PRI)	N/A
PRIORITY PWRDN GROUP 3	PP3A*,PP3B** (on MCC call) as reqd

*PRIORITY PWRDN 3A (PP3A) contains recoverable PL ops pwrndn steps.

**PRIORITY PWRDN 3B (PP3B) is a total PL pwrndn that may cause PL ops to be nonrecoverable

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PL 2-2

PL PWR/120/O/FIN A

ACTION

PP3A	PRIORITY PWRDN (Recoverable) (On MCC call only)	PWRUP
<u>FLT DECK/MIDDECK</u>		√MCC
L11	1. Exit programs, pwr dn all non-essential PGSCs 2. DC PWR CAB PL1 – OFF If APCU 1 powers NODE2 LTA Heaters on MCC GO: 3. APCU 1 CONV – OFF OUTPUT – OFF	
A15		
	If addnl pwrndn reqd: 4. Go to PRIORITY PWRDN 3B (PP3B)	
PP3B	PRIORITY PWRDN (Non-Recoverable) (On MCC call only)	PWRUP
<u>OBSS¹</u>		√MCC
	1. LCC DEACT (Cue Card, <u>LCS</u>) LCH DEACT (Cue Card, <u>LCS</u>) LDRI/ITVC DEACT (Cue Card, <u>LDRI/ITVC</u>)	
<u>FLT DECK/MIDDECK</u>		
L12	2. OIU PWR – OFF (ctr) (tb-bp) <u>NOTE</u> MCC will turn off the PSP; expect 'BCE BYP PSP' msg. MCC will config PCMMU, PDI as reqd	
R1	3. PL CAB – OFF AUX – OFF √AFT MNB – OFF √MNC – OFF	

¹ APCU 2 provides power to OBSS and NODE2 LTA Heaters string 2 in parallel

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PL 2-3

PL PWR/120/O/FIN A

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PL PWR/120/O/FIN A

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OIU	PL 3-3
FLT DECK/MIDDECK.....	PL 3-3

PL SAFING
ORB

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PL 3-1

PL PWR/120/O/FIN A

PL SAFING MATRIX

PROCEDURE	ACTION
9.101 JOINT EXPEDITED UNDOCKING AND SEPARATION, from step 18b (SODF: JOINT OPS, <u>EMERGENCY RESPONSE</u> ; JEUS)	PL SAFING A
PWRDN FOR LOSS OF:	
2 CAB FANS	ISS SAFING* if docked, PL SAFING A
2 H2O LOOPS	PL SAFING A
CAB PRESS	PL SAFING A
2nd FC (TIG < 4 hr) (from step 5)	ISS SAFING* if docked, PL SAFING A
(TIG > 4 hr) (from step 15)	ISS SAFING* if docked, PL SAFING A
2 FREON LOOPS	PL SAFING A

*ISS SAFING (SODF: JOINT OPS, EMERGENCY RESPONSE)

**PL SAFING
ORB**

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PL 3-2

PL PWR/120/O/FIN A

ACTION

A	PL SAFING
<u>MIDDECK</u>	
<u>OIU</u>	
L12U 1. OIU PWR – OFF (ctr) (tb-bp)	
<u>FLT DECK/MIDDECK</u>	
R1	2. √PL PRI MNB,FC3, MNC (three) – OFF (tb-OFF) 3. AUX – OFF 4. CAB – OFF 5. √AFT MNB – OFF 6. √MNC – OFF 7. When PL SAFING completed, return to calling procedure, if reqd

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PL 3-3

PL PWR/120/O/FIN A

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PL 3-4

PL PWR/120/O/FIN A

PL PWRDN – ENTRY

PL PWRDN MATRIX..... PL 4-2
ACTION..... PL 4-2
PWRDN A PL 4-2

PL PWRDN
ENT

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PL 4-1

PL PWR/120/E/FIN A

PL PWRDN MATRIX

PROCEDURE	ACTION
PWRDN FOR LOSS OF:	
2 CAB FANS	N/A
2 H ₂ O LOOPS (ENTRY)	N/A
CAB PRESS	N/A
1 FREON LOOP (ENTRY)	N/A
HI LOAD EVAP (ENTRY)	N/A
FES	N/A
2 FREON LOOPS (ENTRY)	N/A
1 FC	N/A
2nd FC (ENTRY)	N/A
MN BUS UNDERVOLTS/FC VOLTS	
(from step 6; permanent loss of PL PRI)	N/A
(from step 14; temporary loss of PL PRI)	N/A

ACTION

A	PWRDN	PWRUP
N/A		N/A

PL PWRDN
ENT

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PL 4-2

PL PWR/120/E/FIN A

Space Shuttle Program
FLIGHT DATA FILE

JSC-48097-120
FINAL, REV A



**PAYLOAD
POWERDOWN**

**STS
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Flight Cover (trim bottom to expose tabs)