Space Shuttle Program
FLIGHT DATA FILE

JSC-48097-126

Payload Powerdown

STS-126

Mission Operations Directorate
Operations Division

Final, Rev A
October 17, 2008

National Aeronautics and
Space Administration

Lyndon B. Johnson Space Center
Houston, Texas

United Space Alliance

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JSC-48097-126

MISSION OPERATIONS DIRECTORATE

PAYLOAD POWERDOWN
STS-126

FINAL, REVISION A
October 17, 2008

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PL PWR/126/FIN A

Incorporates the following:		
482#:	PL PWR-0128	PL PWR-0130

AREAS OF TECHNICAL RESPONSIBILITY

Publication Manager	DO35/Y. Fuller	281-244-1174
Alternate Publication Manager	DO35/L. Giles	281-244-9068
ORB PWRDNS	DS43/C. Sweitzer	281-483-6355
PL PWRDN	DO5/K. Standridge	281-244-2240

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-126

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REV A 10/17/08

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PL PWRDN ASC

PL PWRDN MATRIX

PROCEDURE	ACTION
PWRDN FOR LOSS OF:	
2 CAB FANS	A
CAB PRESS	
(MINOR PWRDN; from step 4)	A
(MAJOR PWRDN; from step 5)	A
AV BAY COOLING/AV BAY FIRE	A (AV BAY 2 only)
2 H2O LOOPS [PLT PWRDN, SYS AOA, 2 H2O LOOPS (AOA); (CDR/PLT PWRDNS)]	A
(POST OMS-2)	A
1 FREON LOOP	N/A
2 FREON LOOPS [PLT PWRDN, SYS AOA, 2 FREON LOOPS (AOA); (CDR/PLT PWRDNS)]	A
(POST OMS-2)	A
HI LOAD EVAP	N/A
FES/1 FC	N/A
2nd FC	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
	MIDDECK PAYLOADS	N/A
	NOTE When orbiter power removed, science degradation or loss will occur to GLACIER (30 min)	
	GLACIER	
MF28E/G	1. √BATTERY – ON (lt on)	
	2. cb POWER – op (lt off)	
ML86B	3. cb MNB MAR 1 – op	
	CGBA	
MF71E	4. cb MAIN POWER – op	
MO63P	5. 10A J4 – OFF	
	6. cb CB4/J4 – op	

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PL PWRDN – ORBIT

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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 required*
AV BAY COOLING (from MAL GPC FRP-7)	C
1 FC	PP3A*,PP3B* (on MCC call) as required until ORB kW < 17
FES (ON ORBIT)	PP3A*,PP3B** (on MCC call) as required*
(DEORBIT PREP)	A
MN BUS UNDERVOLTS/FC VOLTS (from step 6; permanent loss of PL PRI)	B
(from step 17; temporary loss of PL PRI)	B
AV BAY FIRE	C (if AV BAY 2)
PRIORITY PWRDN GROUP 3	PP3A,PP3B (on MCC call) as required*

***PRIORITY PWRDN 3A (PP3A) contains recoverable Payload Operations Powerdown steps

****PRIORITY PWRDN 3B (PP3B) is a total Payload Powerdown that may cause Payload Operations to be nonrecoverable

ACTION

PP3A	PRIORITY PWRDN (Recoverable) (On MCC call only)	PWRUP
<u>MPLM</u>		√MCC
L12U (SSP 1)	1. MPLM CH 1,2 HTR PWR (two) – OFF (tb-bp)	
<u>PCS</u>		
	2. Exit programs, power off PCS	
L11(PDIP)	3. DC PWR 1 – OFF	
<u>OIU</u>		
L12U (SSP 1)	4. OIU PWR – OFF (tb-bp)	
If additional powerdown required:		
	5. Go to PRIORITY PWRDN 3B (PP3B)	

PP3B	PRIORITY PWRDN (Non-Recoverable) (On MCC call only)	PWRUP
PSSC		
R1	1. PL AFT MNB – OFF	
MIDDECK PAYLOADS		
GLACIER		
	NOTE When orbiter power removed, science degradation or loss will occur to GLACIER (30 min)	
MF28E/G	2. pb Left (MENU) → Press (one time) QUICK STATUS 1/5	
	3. pb Left (NEXT) → Press (four times) SHUTDOWN 5/5	
	4. pb Center (SELECT) → Press (one time) SHUTDOWN 1/2	
	5. pb Center (SELECT) → Press (one time) Confirm Shutdown	
	6. pb Left (APPLY) → Press (one time) Shutting Down Please Wait	
	7. √Display Shutdown Complete TURN POWER OFF	
	8. √BATTERY – ON (lt on)	
	9. cb POWER – op (lt off)	
ML86B	10. cb MNB MAR 1 – op	
CGBA		
	NOTE When orbiter power removed, science degradation or loss will occur to CGBA (30 min)	

PP3B (Cont)	PRIORITY PWRDN (Non-Recoverable) (On MCC call only)	PWRUP
MF71E	11. pb MENU → Press 12. pb 7 Shutdown → Press 13. pb ENTER → Press 14. pb 1 Shutdown System → Press 15. pb ENTER → Press 16. Verify display indicates OK TO POWERDOWN 17. cb MAIN POWER – op	
MO63P	18. 10A J4 – OFF 19. cb CB4/J4 – op	
LMC		
R1	20. PL AFT MNC – OFF	
OBSS		
	21. LCC DEACT (Cue Card, LCS) LCH DEACT (Cue Card, LCS) LDRI/ITVC DEACT (Cue Card, LDRI/ITVC)	
PL BUS DEACT		
R1	22. PL CAB – OFF AUX – OFF PRI MNC – OFF (tb-OFF)	

A	PWRDN (to reduce internal cabin heat loads)	PWRUP
ORBITER Exit software programs, powerdown all non-essential PGSCs and orbiter equipment (OCAC, Ergometer, Battery Chargers, etc)		√MCC

B	PWRDN (PL PRI permanently or temporarily lost)
MPLM	
L12U	1. MPLM CH 1,2 HTR PWR (two) – OFF (tb-bp)
	PWRUP (PL PRI recovered)
R1	1. PL PRI MNC – ON (tb-ON)
MPLM If required (on MCC GO):	
L12U	2. MPLM CH 1,2 HTR PWR (two) – ON (tb-gray)

C	PWRDN	PWRUP
MIDDECK REAR-BREATHER PAYLOADS NOTE When orbiter power removed, science degradation or loss will occur to GLACIER (30 min) GLACIER MF28E/G 1. √BATTERY – ON (lt on) 2. cb POWER – op (lt off) ML86B 3. cb MNB MAR 1 – op		N/A

PL SAFING – ORBIT

PL SAFING MATRIX ..... PL 3-2
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PL SAFING (HC) ..... PL 3-3
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PAYLOAD BUSES ..... PL 3-3

PL SAFING MATRIX

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

PL SAFING
ORB

ACTION

PL SAFING (HC)

MIDDECK TRANSFER (IF NOT ALREADY PERFORMED)

If transfer hardware in ODS:
1. Complete transfer to ISS

Else:
2. Stow in Middeck

MIDDECK PAYLOADS

GLACIER

ML86B 3. cb MNB MAR 1 – op

CGBA

MO63P 4. 10A J4 – OFF
5. cb CB4/J4 – op

OIU

SSP1 6. OIU PWR 1(2) – OFF (tb-bp)

APCU

A15 7. APCU 1,2 CONV (two) – OFF
8. OUTPUT (two) – OFF

PAYLOAD BUSES

R1 9. PL PRI MNC – OFF (tb-OFF)
√MNB,FC3 (two) – ctr (tb-OFF)
10. AUX – OFF
11. CAB – OFF
12. AFT MNB – OFF
MNC – OFF

Once PL SAFING completed, return to calling procedure, if required

Once calling procedure completed, stow all non-essential orbiter equipment (OCAC,Cycle Ergometer,Battery Chargers, etc)

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PL PWRDN – ENTRY

PL PWRDN MATRIX..... PL 4-2
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PWRDN A ..... PL 4-2
MIDDECK REAR-BREATHER PAYLOADS ..... PL 4-2
GLACIER ..... PL 4-2

PL PWRDN MATRIX

PROCEDURE	ACTION
PWRDN FOR LOSS OF:	
2 CAB FANS	A
2 H2O LOOPS (ENTRY)	A
CAB PRESS	A
AV BAY COOLING (ENTRY)	A (AV BAY 2 only)
1 FREON LOOP (ENTRY)/HI LOAD EVAP (ENTRY)	N/A
FES	N/A
1 FC (ENTRY)	N/A
2 FREON LOOPS (ENTRY)	A
2nd FC (ENTRY)	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
	MIDDECK REAR-BREATHER PAYLOADS NOTE When orbiter power removed, science degradation or loss will occur to GLACIER (30 min) GLACIER MF28E/G 1. √BATTERY – ON (lt on) 2. cb POWER – op (lt off) ML86B 3. cb MNB MAR 1 – op	N/A

PL PWRDN ENT

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Flight Cover (trim bottom to expose tabs)