

Reset Heater Group protection
File: H_CRP_TCS_HCPR.xls
Author: E. Picallo



Procedure Summary

Objectives

This procedure describes the steps to reset the on-board protection against high dissipation of HCS.

This protection can be disabled only by Ground. No status of this protection is available, thus in case a high dissipation is detected on-board the CDMS ASW sends the command to enable the protection and if the temperature is still Out Of Limit the protection triggers the related HPS & HCSs switch OFF.

Once this protection has been fired in order to reset it the HPS needs to be commanded OFF before being commanded ON

Summary of Constraints

This procedure is only to be used :

- after the on-board protection has been fired;
- no reconfiguration has taken place;
- if the HPS needs to be switched back ON.

Spacecraft Configuration

Start of Procedure

CDMU in default configuration;
Thermal Control Management function active;
One heater group switched OFF by the on-board thermal protection.

End of Procedure

CDMU in default configuration;
Thermal Control Management function active;
The heater group switched back ON.

Reference File(s)

Input Command Sequences

Output Command Sequences

Referenced Displays

ANDs	GRDs	SLDs
WAHT1584		
ZAZ7K999		
WAHT2584		
ZAZ7L999		
WAHT3584		

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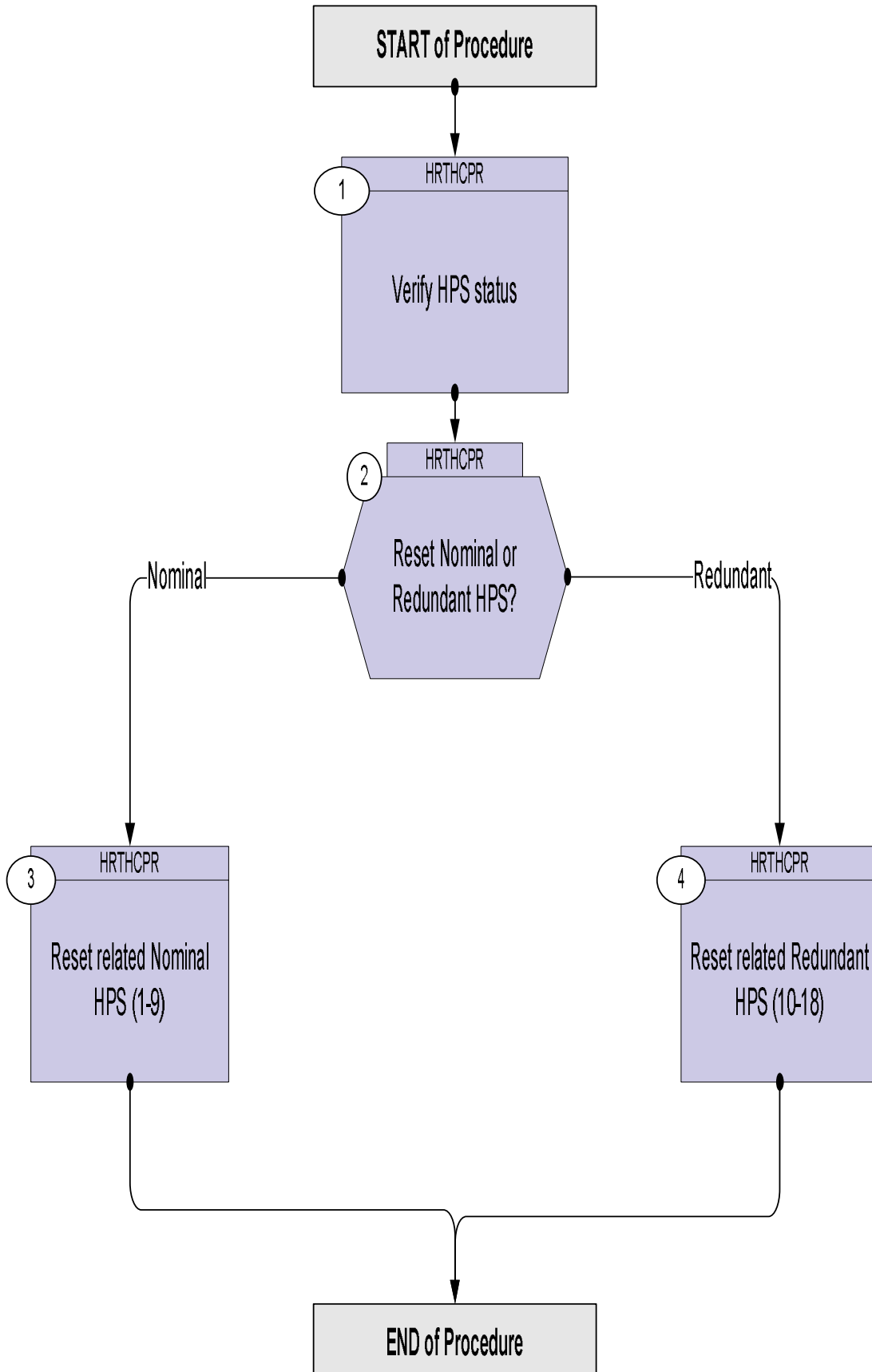
Configuration Control Information

DATE	FOP ISSUE	VERSION	MODIFICATION DESCRIPTION	AUTHOR	SPR REF
28/07/08	1	1	Created	E. Picallo	
08/12/08	2	2	Display mode update	E. Picallo	

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Procedure Flowchart Overview



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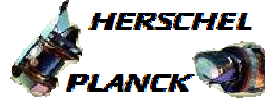
Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
Beginning of Procedure				
TC Seq. Name : HRTHCPR (Reset HCS protection) Reset Heater Group protection TimeTag Type: N Sub Schedule ID: <input type="checkbox"/>				
1		Verify HPS status		Next Step: 2
1.1		If Heater Group 1 failure		<input type="checkbox"/>
		Verify Telemetry GRP1_HPS_STS WM12G565 = OFF		AND=WAHT1584
		Verify Telemetry Hps1FuncSts DEG77170 = On		AND=ZAZ7K999
1.2		If Heater Group 2 failure		<input type="checkbox"/>
		OR Verify Telemetry GRP2_HPS_STS WM22G565 = OFF		AND=WAHT1584
		Verify Telemetry Hps2FuncSts DEG81170 = On		AND=ZAZ7K999
1.3		If Heater Group 3 failure		<input type="checkbox"/>
		OR Verify Telemetry GRP3_HPS_STS WM22H565 = OFF		AND=WAHT1584
		Verify Telemetry Hps3FuncSts DEG85170 = On		AND=ZAZ7K999
1.4		If Heater Group 4 failure		<input type="checkbox"/>
		OR Verify Telemetry GRP4_HPS_STS WM32G565 = OFF		AND=WAHT1584
		Verify Telemetry Hps4FuncSts DEG89170 = On		AND=ZAZ7K999
1.5		If Heater Group 5 failure		<input type="checkbox"/>
		OR Verify Telemetry GRP5_HPS_STS WM32H565 = OFF		AND=WAHT1584
		Verify Telemetry Hps5FuncSts DEG93170 = On		AND=ZAZ7K999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
1.6		<i>If Heater Group 6 failure</i>		<input type="checkbox"/>
		OR Verify Telemetry GRP6_HPS_STS WM42G565	= OFF	AND=WAHT1584
		Verify Telemetry Hps6FuncSts DEG97170	= On	AND=ZAZ7K999
1.7		<i>If Heater Group 7 failure</i>		<input type="checkbox"/>
		OR Verify Telemetry GRP7_HPS_STS WM42H565	= OFF	AND=WAHT2584
		Verify Telemetry Hps7FuncSts DEH01170	= On	AND=ZAZ7K999
1.8		<i>If Heater Group 8 failure</i>		<input type="checkbox"/>
		OR Verify Telemetry GRP8_HPS_STS WM52G565	= OFF	AND=WAHT2584
		Verify Telemetry Hps8FuncSts DEH05170	= On	AND=ZAZ7K999
1.9		<i>If Heater Group 9 failure</i>		<input type="checkbox"/>
		OR Verify Telemetry GRP9_HPS_STS WM52H565	= OFF	AND=WAHT2584
		Verify Telemetry Hps9FuncSts DEH09170	= On	AND=ZAZ7L999
1.10		<i>If Heater Group 10 failure</i>		<input type="checkbox"/>
		Verify Telemetry GRP10_HPS_STS WM62G565	= OFF	AND=WAHT2584
		Verify Telemetry Hps10FuncSts DEG41170	= On	AND=ZAZ7L999
1.11		<i>If Heater Group 11 failure</i>		<input type="checkbox"/>
		OR Verify Telemetry GRP11_HPS_STS WM62H565	= OFF	AND=WAHT2584
		Verify Telemetry Hps11FuncSts DEG45170	= On	AND=ZAZ7K999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
1.12		<i>If Heater Group 12 failure</i>		<input type="checkbox"/>
		OR Verify Telemetry GRP12_HPS_STS WM72G565	= OFF	AND=WAHT2584
		Verify Telemetry Hps12FuncSts DEG49170	= On	AND=ZAZ7K999
1.13		<i>If Heater Group 13 failure</i>		<input type="checkbox"/>
		OR Verify Telemetry GRP13_HPS_STS WM72H565	= OFF	AND=WAHT3584
		Verify Telemetry Hps13FuncSts DEG53170	= On	AND=ZAZ7K999
1.14		<i>If Heater Group 14 failure</i>		<input type="checkbox"/>
		OR Verify Telemetry GRP14_HPS_STS WM82G565	= OFF	AND=WAHT3584
		Verify Telemetry Hps14FuncSts DEG57170	= On	AND=ZAZ7K999
1.15		<i>If Heater Group 15 failure</i>		<input type="checkbox"/>
		OR Verify Telemetry GRP15_HPS_STS WM82H565	= OFF	AND=WAHT3584
		Verify Telemetry Hps15FuncSts DEG61170	= On	AND=ZAZ7K999
1.16		<i>If Heater Group 16 failure</i>		<input type="checkbox"/>
		OR Verify Telemetry GRP16_HPS_STS WM92G565	= OFF	AND=WAHT3584
		Verify Telemetry Hps16FuncSts DEG65170	= On	AND=ZAZ7K999
1.17		<i>If Heater Group 17 failure</i>		<input type="checkbox"/>
		OR Verify Telemetry GRP17_HPS_STS WM92H565	= OFF	AND=WAHT3584
		Verify Telemetry Hps17FuncSts DEG69170	= On	AND=ZAZ7K999

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
1.18		<i>If Heater Group 18 failure</i>		<input type="checkbox"/>
		OR Verify Telemetry GRP18_HPS_STS WMA2G565	= OFF	AND=WAHT3584
		Verify Telemetry Hps18FuncSts DEG73170	= On	AND=ZAZ7K999
2		<i>Reset Nominal or Redundant HPS?</i>		Next Step: Redundant 4 Nominal 3
		Once HCS high dissipation protection has been fired the related HPS shall be switched OFF. Although the related entry in the UIU table is not updated (remains ON).		
3		<i>Reset related Nominal HPS (1-9)</i>		Next Step: END
		The thermal protection having fired, one needs to reset it by switching the related Heater Group first OFF and then back ON.		
3.1		<i>Switch OFF related Nominal HPS</i>		<input type="checkbox"/>
		Execute Procedure: H_CRP_TCS_HPNO Nominal HPS switch OFF		
3.2		<i>Switch ON related Nominal HPS</i>		<input type="checkbox"/>
		Execute Procedure: H_CRP_TCS_HPNI Nominal HPS switch ON		
4		<i>Reset related Redundant HPS (10-18)</i>		Next Step: END
		The thermal protection having fired, one needs to reset it by switching the related Heater Group first OFF and then back ON.		
4.1		<i>Switch OFF related Redundant HPS</i>		<input type="checkbox"/>

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Step No.	Time	Activity/Remarks	TC/TLM	Display/ Branch
		Execute Procedure: H_CRP_TCS_HPRO Redundant HPS switch OFF		
4.2		Switch ON related Redundant HPS		<input type="checkbox"/>
		Execute Procedure: H_CRP_TCS_HPR1 Redundant HPS switch ON		
End of Procedure				