SPIRE-AST-REP-002633

Title: **PACS-SPIRE PARALLEL MODE IN EQM IMT**

CI-No: 153300 - 153200

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Issue	Date	Sheet	Description of Change	Release
1	10/11/ 2005		First Issue	

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1 Scope

1.1 Objective

This test report describes the results of the PACS-SPIRE parallel mode test. This test is part of the EQM IMT test campaign.

The test was performed at ASED in Ottobrunn from 7/11/2005 to 10/11/2005.

1.2 Summary

Detailed results are given in the as-run-procedure in Chapter 7

The following NCR's have been raised:

- HP-112000-ASED-NC-1688 - Evaporator temperature not correct wrt L0 temperature (see Appendix 3)

The following NCR's have been altered:

- N/A

An overview can be found in chapter 10.2

Conclusion:

The first parallel cooler recycle does not provide a good image since both the starting condition and the temperatures during night were not good.

All tests have been restarted on the second day with much better starting condition. This test showed that the parallel cooler recycles were successfully. Detailed analysis by PACS and SPIRE should provide insight in whether there is an influence on one another. No big problems were detected during the instruments tests after cooler recycle.

Also the TM/TC traffic was tested during this test with the new bus profile (PACS_SPIRE_par.pst). No problems were detected.

Extra Comments:

N/A

2 Documents/Drawings

2.1 Applicable Documents

INSTRUMENT PLM EQM LEVEL TEST PROCEDURE

HP-2-ASED-PR-0051, issue 1.1 from 24.06.2005

EGSE CONFIGURATION PROCEDURE

HP-2-ASED-PR-0035, Issue 4 from 09.11.2005

INSTRUMENT TEST PROCEDURE

PACS-ME-TP-024, Issue 1.2 from 03.11.2005

2.2 Reference Documents

N/A

2.3 OtherDocuments

N/A

3 Configuration

3.1 PLM Configuration

SVM integrated with cryostat. Cryostat is at He II level (~1.7 K).

3.2 Environment

Environmental	Actual
Clean Room Class	100.000
Temperature	~21 °C
Rel. Humidity	~52.10 %
Pressure	~857 mbar

4 Conditions

4.1 Personnel

Responsibility	Name / Organization
Test Manager	S. Idler
Test Engineer	S. Ilsen
EGSE Operator	S. Ilsen
Instrument Engineer	H Feuchtgruber (PACS), E. Wiezorrek (PACS), L. Spencer (SPIRE)
PA Responsible	D. Hendry
ESA/Alcatel Representative	W. Pinter-Krainer, / G. Doubrovik

4.2 Environmental

See chapter 3.2

4.3 General Precautions and Safety

N/A

4.3.1 General Safety Requirements, Precautions

N/A

4.3.2 ESD constraints

N/A

4.3.3 Special QA Requirements

N/A

4.4 EGSE

4.4.1 Hardware: CCS, EGSE's and DFE's

Item	Hardware Id	Serial No.
CCS	N/A	HPCCS 4
PLM SCOE	SE8426	03/001
CDMU DFE	SE8455	03/002
CRYO SCOE	EQM	N/A
IEGSE	N/A	N/A

4.4.2 Hardware: Prime Instrument

Item	Model	Remark
DPU	AVM	
SPU	AVM	
DEC/MEC	EM	

4.4.3 Software

Prime Instrument: PACS

SW Ident	Issue /Version	Responsible	Comment
Inst OBS SPU	11.7	Inst	
Inst SPU boot OBSW	1.4	Inst	
Inst OBS DECMEC	5.0.25 Version for Mech control cold	Inst	V 5.0.24 Mech controller hot
Inst DECMEC boot OBSW	1.1	Inst	
Inst OBS DPU	7.65	Inst	
Inst DPU Boot OBSW	1.0	Inst	

Standby Instrument: HIFI

SW Ident	Issue /Version	Responsible	Comment
Inst ICU OBS	2.22	Inst	18.05.2005
Inst LCU OBS	17.0	Inst	01.10.2004

Standby Instrument: SPIRE

SW Ident	Issue /Version	Responsible	Comment
Inst DPU OBS	2.0.A1	Inst	
Inst DRCU OBS	Boot SW June 2003	Inst	

IEGSE Configuration PACS

SW Ident	Issue /Version	Responsible	Comment
MIB on I-EGSE	7_18	Inst	
HCSS Build Version	687	Inst	
PACS Build	20050706A	Inst	

IEGSE Configuration SPIRE

SW Ident	Issue /Version	Responsible	Comment
MIB on I-EGSE	SPIRE_MIB_CQM2_2.0.A2_after_WUC_08	Inst	
HCSS Build Version	644	Inst	
PACS Build	159	Inst	

CCS Configuration

SW Ident	Issue /Version	Responsible	Comment
TCL Scripts HIFI	ist_cus_0.7_tcl.zip	ASP	Delivered on 19.08.2005
TCL Scripts PACS	PACS_TCL_20051104_B	ASP	Delivered on 04.11.2005
TCL Scripts SPIRE	SPIRE-SFTs-09092005.tar.gz + adapted script: SFT-SPIRE-CCS-DRCU-ON-STEP2.tcl + SPIRE_EQM_PARALLEL_1_1.zip	ASP	Delivered on 09.09.2005 + 12.09.2005 + 04.11.2005
CCS MIB Bridge files	CCS_Her_PLM__01_v1_2.zip	ASP	2005-09-08
CCS S/W Release	2.0.637	Terma	Updated on 06.10.2005

CDMU DFE Configuration

SW Ident	Issue /Version	Responsible	Comment
CDMU DFE CMS	2.3.0.0	SSBV	Part of CDMU DFE Workstation
CDMU DFE Pipe I/F (IPC Handler P7001)	2.4.0.0	SSBV	Part of CDMU DFE Workstation

CDMU DFE Pipe I/F (IPC Handler Pipe P 7002)	1.2.1.0	SSBV	Part of CDMU DFE Workstation
CDMU archive Browser	2.2.2.72	SSBV	Part of CDMU DFE Workstation
Mil-STD-1553b BusMonitor	1.11.1.87	SSBV	Part of CDMU DFE Workstation
CDMU DFE IPC Handler object implementation	2.4.0.18	SSBV	Part of CDMU DFE Workstation
SimFE	1.5.0.0	SSBV	Part of CDMU DFE Platform
HLBC	1.07.00	SSBV	Part of CDMU DFE Platform

PLM SCOE Configuration

SW Ident	Issue /Version	Responsible	Comment
PLM SCOE CMS	1.5.0.0	SSBV	Part of PLM SCOE Workstation
PLM SCOE archive browser	2.2.1.70	SSBV	Part of PLM SCOE Workstation
PLM SCOE pipe I/F	1.3.0.0	SSBV	Part of PLM SCOE Workstation
PLM SCOE IPC Handler object implementation	2.1.0.7	SSBV	Part of PLM SCOE Workstation
PDU Controller	1.5.0.0	SSBV	Part of PLM SCOE Platform

Bus Profiles

The following bus profiles are loaded on the CDMU DFE. They are provided, checked and validated by Patrice Couzin (ASP). They were delivered by email on 01.09.2005

- PACS_prime_inst.PST
- SPIRE_prime_inst.PST
- HIFI_prime_inst.PST
- PACS_SPIRE_par.PST
- PACS_burst_mode.PST
- Inst_sdby.PST

The profiles allow one instrument in PRIME mode, while the others are in standby mode. This test will use only the following bus profile(s):

- PACS_SPIRE_par.PST (see Appendix 1)

4.4.4 Special Equipment

N/A

4.5 MIB

4.5.1 Version

The used MIB has reference: CCS_Her_PLM__01_v1_2.zip

And reference date: 2005-09-08

The MIB was received by email from Sonia Dos-Santos (ASP) on 08/09/2005

4.5.2 Configuration & Manual changes

The following files have been manually changed by Alcatel after the generation process (taken from the configuration.txt file included in the MIB):

- CDF.DAT

  HPSDB does not allows fixed counter flags (ie CDF_ELTYPR=F for counters) HPSDB NCR 478

- CDF.DAT

  Problem on the (PTC,PFC)=(7,0) Variable octect string (PP004380).

  PACS has the following data:

  PC010380 E 8 32 PP004380 R

  On HPSDB this line is generated

  PC010380 E 0 32 0 PP004380 R

  For now has been manually replaced.

- DPC.DAT

  Add the line

  HA000289 HU035197 63 1 Y N

  HPSDB NCR, not possible to add User parameters on an alphanumeric display (NCR 495)

  Note: The parameter HU035197 can not be loaded via S2K files, because is not associated to a Packet (NCR created 475)

  Error HPSDB Solution: The parameter as been loaded by the an XML file Add_Parameter_HU035197.xml, to correct this problem.

- PLF.DAT

  (HPSDB NCR 474) error when loading/generating SCOS TM packets has fixed and variable but with diferent definitions, (the following packet has the

parameter repeated 16 times on plf.dat, and repeated 0 times (variable) on the vpd.dat table)

The vpd.dat is corrected generated but not the plf.dat

replace the line (manual)

HM057190 80044289 0 0 1 0 0 0

by

HM056190 80044289 16 0 1 0 0 0

HM057190 80044289 17 0 64 0 0 0

- TCD.DAT

  Generated empty by HPSDB, NCR 497 replaced by the one used on the tests week 28

- SCO.DAT

  replaced by the one used on the tests week 28. This file shall be discussed with S. Ilsen because of the SCOE's names, HPSDB generates the names of the real elements.

- TMD.DAT

  Add packets sent by SPIRE team by email on 31/08/2005

- PCF.DAT

  Change PCF_VALPAR=0 on the parameter HU035197 inside of the pcf.dat. This was ok on HIFI, but not done on the XML file loaded

  Add_Parameter_HU035197.xml

- PLF.DAT

  Change the field PLF_LOGCC from NULL to 32 bits (see email from Luc Dubbeldam- HIFI on 06/09/2005)

  HM057190 80044289 17 0 64 32 0 0

The following files have been changed manually by ASED OTN (Stijn Ilsen):

- CAP.DAT – The decimal separator for the EQM CRYO SCOE calibration is manually changed from “,” to “.”. This also to solve problems with the EQM CRYO SCOE calibrations. EQM CRYO SCOE MIB will be updated by ASED to avoid this problem in the future.
- TMD.DAT – The EQM CRYO packets have been added to the tmd.dat file on the CCS to make sure all EQM CRYO SCOE packets are forwarded to the IEGSE.

Remark: Because of NCR 1482, a MIB change was necessary after the first day of IMT. The CDF.DAT file is changed. Command PC162420 allows 8 entries for parameter PP067420, this is changed into 9.

5 Step by Step Procedure: Configure CCS and EGSE

The CCS session was still running from the PACS IMT part 2 (HP-2-ASED-TR-0102). The session name is:
2005_11_02_07_21_ilsens_hpws42_REALTIME_P_IMT_p3

The selected bus profile is PACS_SPIRE_par.pst (changed from PACS_prime_inst.pst before start of PACS-SPIRE parallel mode test).

6 Step by Step Procedure: Power On Instruments

All instruments were already powered and configured to STANDBY mode since last week (PACS IMT part 2). More details can be found in HP-2-ASED-TR-0102.

7 Step by Step Procedure: PACS/SPIRE parallel mode results

7.1 SPIRE Cooler Recycle

Follow procedure SPIRE-IMT-CREC as given in CCS-SPIRE-IMT_002512, Issue1.1, 23-09-2005.

Purpose: Cooler Recycle – same procedure to be run for all subsequent recycles. This procedure will be run manually from the CCS to determine the parameters needed to prepare an automated TCL script. This automated script can then be run overnight as necessary.

Preconditions:

Step #	Action	Comments	Check
1	SCU AC and DC thermometry is on		**OK**
2	Level 0 Detector Box and Pump are at 2 K and the Level 0 Evaporator is at 1.85 K		**OK**

Initial Conditions:

- SPIRE DPU is on and generating HK
- SCU PARAMETERS display is selected on the CCS

Step #	Action	Comments		Check
Extra	Execute: SPIRE-IMT-START-TEST.tcl **Executed at: 13h52m56s UTC**	**This step was included on demand of SPIRE personnel**		**OK**
1	Execute: SPIRE-IMT-CREC.tcl **Executed at: 13h55m00s UTC**	STEP Time (UT) SPHSV PUMPHSTEMP EVAPHSTEMP	**1** **13h55m05s UTC** **0.0** **4.64 K** **4.37 K**	**OK**
2	Wait for PUMPHSTEMP to go just below 12 K and then click on OK to apply 300 mW power to Pump Heater	**This step is only needed in case the cooler has been recycled recently. In this case, the 300 mW can be applied to the pump heater immediately.**		**OK**
		STEP Time (UT) ΔTime (minutes) SPHTRV	**2** **13h56m25s UTC** **1 minute** **565.06 mV**	

3	Wait for PUMPHTRTEMP to increase to 45 K and then click on OK to reduce power to Pump Heater to 40mW	STEP Time (UT) ΔTime (minutes) SPHTRV PUMPHTRTEMP	**3** **14h43m39s UTC** **47 minutes** **4.01 V** **45.02 K**	**OK**
4	Wait for SUBKTEMP to fall below 2 K and then click on OK to switch off power to the Pump Heater and Evaporator Heat Switch. IMPORTANT: This step should be executed even if SUBKTEMP is above 2 K but more than an hour has elapsed since the start of the recycle procedure.	STEP Time (UT) ΔTime (minutes) SPHSV SPHTRV PUMPHSTEMP EVAPHSTEMP	**4** **14h53m40s UTC** **10 minutes** **0** **0** **5.21 K** **19.05 K**	**OK**
5	Wait for EVAPHSTEMP to fall below ~ 16 K and then click on OK to switch on power to the Pump Heat Switch The TCL script ends after execution of this step	STEP Time (UT) ΔTime (minutes) EVHSV SUBKTEMP PUMPHSTEMP	**5** **14h58m50s UTC** **5 minutes** **565 mV** **1.94 K** **7.17 K**	**OK**
6	Monitor SUBKTEMP and PUMPHSTEMP. Cooler recycle procedure completes when SUBKTEMP reaches ~ 0.285 K and PUMPHSTEMP reaches ~16.5 K.	Time (UT) ΔTime (minutes) SUBKTEMP PUMPHSTEMP	**6** **16h40m05s UTC** **0.289 K** **16.4 K**	**OK**
Extra	Execute: SPIRE-IMT-END-TEST.tcl	**This step was included on demand of SPIRE personnel**		

Final Configuration: SPIRE is in REDY mode

During the cooler recycle it is noticed that the start conditions for SPIRE are not normal compared to the L0 temperatures. The L0 temperature was constant at 1.95-2 K. The

SUBKTEMP was however at 1.68 K. An NCR is raised to track this problem (HP-112000-ASED-NC-1688).

7.2 PACS Cooler Recycle

Step #	Action	Comments	Check
1	Execute: BOLO_cooler_OBS_shell.tcl **Executed at:** **14h25m02s UTC** **During the recycling PACS saw some 'abnormal-slow' behaviour, they will investigate.**	Heater currents are set as commanded	**OK**
		TEMP_EV should be close to 0.3 K after the execution of the script (110 min)	**OK**
		TEMP_EV should be below 300mK 120 min after starting of the recycling	**OK**

7.3 SPIRE tests

7.3.1 Switch to SPIRE CCS handler on I-EGSE

This task is executed by the SPIRE and PACS personal.

7.3.2 Load a Command List Table for PCAL flash

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-LOAD-COMMAND-LIST.tcl **Executed at:** **16h53m34s UTC**	Check that commands are successful	**OK**

7.3.3 SPIRE to photometer standby

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-PDET-ON-STEP1.tcl **Executed at:** **16h54m52s UTC**	LIA Status "on" LIA LEDs green on PSU	**OK**
2	Execute: SPIRE-PARALLEL-PDET-ON-STEP2.tcl **Executed at:** **17h03m53s UTC** **This script failed before any of the commands were send to the instrument. The TCL template expected 62 TC's, but only received 59 from the IEGSE. An updated version of the script is generated by SPIRE and patched into the running CCS session.**	On DCU_PARAMETERS display check: • PMLWJFETSTAT (0x30) • ~~PLWJFETVSS1 (-1.5V)~~ • PLWJFET1V (-1.5) • ~~PLWJFETVSS2 (-1.5V)~~ • PLWJFET2V (-1.5)	
Extra	Execute: SPIRE-PARALLEL-PDET-ON-STEP2.tcl **Executed at:** **17h25m44s UTC**	On DCU_PARAMETERS display check: • PMLWJFETSTAT (0x30) • ~~PLWJFETVSS1 (-1.5V)~~ • PLWJFET1V (-1.5) • ~~PLWJFETVSS2 (-1.5V)~~	**OK**

		• PLWJFET2V (-1.5)	

7.3.4 Set the nominal bias level for all three photometer arrays

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-NOMINAL-BIAS-P.tcl **Executed at:** **17h28m17s UTC**	On PHOT_PARAMETERS display check: • **PSWBIAS (16.47mV) = 10.43 mV** • **PMWBIAS (16.47mV) = 10.43 mV** • **PLWBIAS (16.47mV)** **Two bias values are not as expected. SPIRE to investigate whether this is normal.**	**NOK**

7.3.5 Stop data generation

Step #	Action	Comments	Check
1	Execute: SPIRE-IMT-STOP-P **Executed at:** **17h30m15s UTC**	Check that commands are successful	

7.3.6 Perform a PCAL Flash

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-PCAL-FLASH.tcl **Executed at:** **17h31m27s UTC**	Check that commands are successful	**OK**

7.3.7 Switch SPIRE to parallel mode and setup for full photometer data sampling at ~10Hz

Step #	Action	Comments	Check
1	Execute: SPIRE-PHOTSTBY-PARALLEL.tcl **Executed at:** **17h35m42s UTC**	On DPU_AND_OBS_PARAMETERS display • SPIRE MODE HK Parameter is PARALLEL	**OK**

7.3.8 Mark the SPIRE parallel mode science data with an OBSID

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-OBS-START **Executed at:** **17h37m28s UTC** **At the end of the script SPIRE detected that some commands were missing in the script. A new version of the script is generated and patched into the CCS session.**	Full photometer data frames transmitted to QLA and displayed on screen with the OBSID	**NOK**
Extra	Execute: SPIRE-PARALLEL-OBS-END **Executed at:** **17h55m43s UTC**		**OK**
Extra	Execute: SPIRE-PARALLEL-OBS-START **Executed at:** **17h56m18s UTC**	Full photometer data frames transmitted to QLA and displayed on screen with the OBSID	**OK**

This is the end of the 1st day of PACS-SPIRE parallel mode testing (7/11/2005).

7.3.9 SPIRE to STANDBY mode

Due to problems with the cryostat (empty AXT), the cooler recycle ended in the morning of the 2nd day of PACS-SPIRE parallel mode testing (8/11/2005). The AXT tank will be refilled and a new cooler recycle will be needed. PACS is already in STANDBY mode, SPIRE is still in PARALLEL PHOTOMETRY mode. To switch SPIRE to standby mode, the following steps are executed.

7.3.9.1 End the parallel observation

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-OBS-END.tcl **Executed at:** **07h48m28s UTC**	Full photometer data transmission stopped and OBSID reset to NULL (0xB0000000)	**OK**

7.3.9.2 SPIRE MODE HK Parameter is PHOTSTBY

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-PHOTSTBY.tcl **Executed at:** **07h49m08s UTC**	SPIRE MODE HK Parameter is PHOTSTBY	**OK**

7.3.9.3 Perform a PCAL Flash

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-PCAL-FLASH.tcl **Executed at:** **07h50m04s UTC**	Check that commands are successful	**OK**

7.3.9.4 Stop data generation

Step #	Action	Comments	Check
1	Execute: SPIRE-IMT-STOP-P **Executed at:** **07h53m00s UTC**	Check that commands are successful	**OK**

7.3.9.5 SPIRE to ready from photometer standby, switch off PLW JFETs, switch OFF LIAs

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-PDET-OFF.tcl **Executed at:** **07h53m37s UTC**	Check: • JFET status “off” • Vss to 0 V • LIA LEDs off on PSU	**OK**

7.4 Restart CCS & re-stabilise EQM cryostat

The CCS session is stopped and both server and workstations are restarted. All SCOE's are left configured and running. A new CCS session is started: 2005_11_08_08_13_ilsens_hpws42_REALTIME_P_SP_Par2

After successful restart, a connection is made to:

- **CDMU DFE**
- **PLM SCOE**
- **EQM CRYO SCOE**
- **IEGSE**

All connections were successful.

Because of problems with the cryostat, some additional tests could be done to investigate HP-113000-ASED-NC-1687. More details can be found in HP-2-SAED-SD-0066. For these additional tests, PACS is switched off temporarily.

The problems with the cryostat caused both coolers to exhaust. Therefore the cooler recycle of both PACS and SPIRE is repeated.

7.5 SPIRE Cooler Recycle

Follow procedure SPIRE-IMT-CREC as given in CCS-SPIRE-IMT_002512, Issue1.1, 23-09-2005.

Purpose: Cooler Recycle – same procedure to be run for all subsequent recycles. This procedure will be run manually from the CCS to determine the parameters needed to prepare an automated TCL script. This automated script can then be run overnight as necessary.

Preconditions:

Step #	Action	Comments	Check
1	SCU AC and DC thermometry is on		**OK**
2	Level 0 Detector Box and Pump are at 2 K and the Level 0 Evaporator is at 1.85 K		**OK**

Initial Conditions:

- SPIRE DPU is on and generating HK
- SCU PARAMETERS display is selected on the CCS

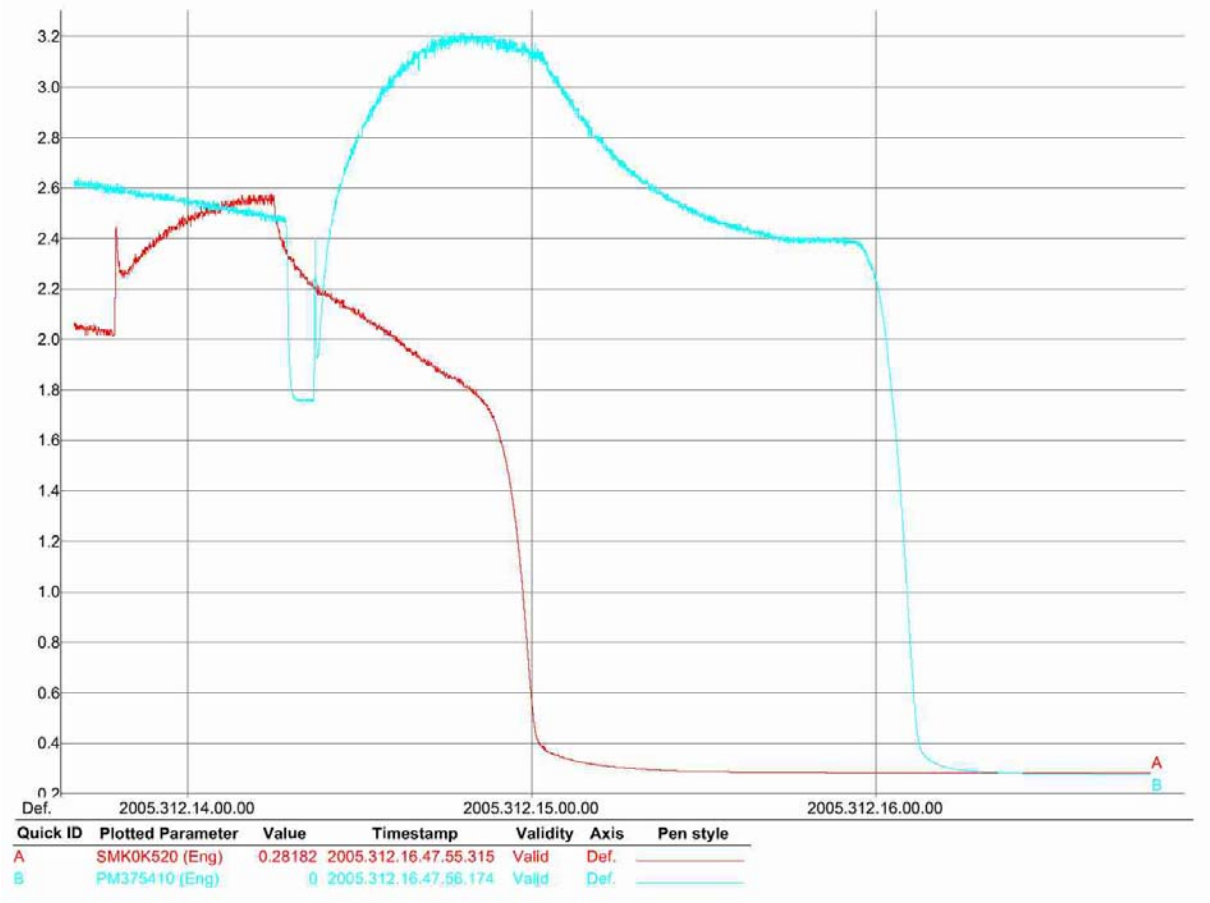
Step #	Action	Comments		Check
Extra	Execute: SPIRE-IMT-START-TEST.tcl **Executed at:** **13h38m21s UTC**	**This step was included on demand of SPIRE personnel**		**OK**
1	Execute: SPIRE-IMT-CREC.tcl **Executed at:** **13h41m31s UTC**	STEP Time (UT) SPHSV PUMPHSTEMP EVAPHSTEMP	**1** **13h41m32s UTC** **0** **1.72 K** **4.44 K**	**OK**
2	Wait for PUMPHSTEMP to go just below 12 K and then click on OK to apply 300 mW power to Pump Heater	**This step is only needed in case the cooler has been recycled recently. In this case, the 300 mW can be applied to the pump heater immediately.**		**OK**
		STEP Time (UT) ΔTime (minutes) SPHTRV	**2** **13h46m58s UTC** **5 minutes** **10.91 V**	
3	Wait for PUMPHTRTEMP to	STEP Time (UT)	**3** **14h35m07s UTC**	**OK**

	increase to 45 K and then click on OK to reduce power to Pump Heater to 40mW	ΔTime (minutes) SPHTRV PUMPHTRTEMP	**49 minutes** **4 V** **45 K**	
4	Wait for SUBKTEMP to fall below 2 K and then click on OK to switch off power to the Pump Heater and Evaporator Heat Switch. IMPORTANT: This step should be executed even if SUBKTEMP is above 2 K but more than an hour has elapsed since the start of the recycle procedure.	STEP Time (UT) ΔTime (minutes) SPHSV SPHTRV PUMPHSTEMP EVAPHSTEMP	**4** **14h36m44s UTC** **1.5 minute** **0** **0** **4.96 K** **18.75 K**	**OK**
5	Wait for EVAPHSTEMP to fall below ~ 16 K and then click on OK to switch on power to the Pump Heat Switch The TCL script ends after execution of this step	STEP Time (UT) ΔTime (minutes) EVHSV SUBKTEMP PUMPHSTEMP	**5** **14h42m17s UTC** **6 minutes** **565 mV** **1.89 K** **7.19 K**	**OK**
6	Monitor SUBKTEMP and PUMPHSTEMP. Cooler recycle procedure completes when SUBKTEMP reaches ~ 0.285 K and PUMPHSTEMP reaches ~16.5 K.	Time (UT) ΔTime (minutes) SUBKTEMP PUMPHSTEMP	**OK**	**OK**
Extra	Execute: SPIRE-IMT-END-TEST.tcl **Executed at:** **16h25m36s UTC**	**This step was included on demand of SPIRE personnel**		

Final Configuration: SPIRE is in REDY mode

7.6 PACS Cooler Recycle

Step #	Action	Comments	Check
1	Execute: BOLO_cooler_OBS_shell.tcl **Executed at:** **14h11m32s UTC**	Heater currents are set as commanded	**OK**
		TEMP_EV should be close to 0.3 K after the execution of the script (110 min)	**OK**
		TEMP_EV should be below 300mK 120 min after starting of the recycling	**OK**



7.7 SPIRE tests

7.7.1 Switch to SPIRE CCS handler on I-EGSE

This task is executed by the SPIRE and PACS personal.

7.7.2 Load a Command List Table for PCAL flash

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-LOAD-COMMAND-LIST.tcl **Executed at:** **16h26m23s UTC**	Check that commands are successful	**OK**

7.7.3 SPIRE to photometer standby

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-PDET-ON-STEP1.tcl **Executed at:** **16h27m42s UTC**	LIA Status “on” LIA LEDs green on PSU	**OK**
2	Execute: SPIRE-PARALLEL-PDET-ON-STEP2.tcl **Executed at:** **16h30m23s UTC**	On DCU_PARAMETERS display check: • PMLWJFETSTAT (0x30) • ~~PLWJFETVSS1 (-1.5V)~~ • PLWJFET1V (-1.5) • ~~PLWJFETVSS2 (-1.5V)~~ • PLWJFET2V (-1.5)	**OK**

7.7.4 Set the nominal bias level for all three photometer arrays

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-NOMINAL-BIAS-P.tcl	On PHOT_PARAMETERS display	**OK**

	Executed at: **16h32m31s UTC**	check: • **PSWBIAS (16.47mV)** • **PMWBIAS (16.47mV)** • **PLWBIAS (16.47mV)** **Two bias values are now as expected, but were not correct last time. Then this 'non-expected' behaviour was said to be normal. SPIRE to investigate.**	

7.7.5 Stop data generation

Step #	Action	Comments	Check
1	Execute: SPIRE-IMT-STOP-P **Executed at:** **16h34m04s UTC**	Check that commands are successful	**OK**

7.7.6 Perform a PCAL Flash

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-PCAL-FLASH.tcl **Executed at:** **16h36m10s UTC**	Check that commands are successful	**OK**

7.7.7 Switch SPIRE to parallel mode and setup for full photometer data sampling at ~10Hz

Step #	Action	Comments	Check
1	Execute: SPIRE-PHOTSTBY-PARALLEL.tcl **Executed at:** **16h39m36s UTC**	On DPU_AND_OBS_PARAMETERS display • SPIRE MODE HK Parameter is PARALLEL	**OK**

7.7.8 Mark the SPIRE parallel mode science data with an OBSID

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-OBS-START **Executed at:** **16h41m08s UTC**	Full photometer data frames transmitted to QLA and displayed on screen with the OBSID	**OK**

7.8 PACS tests

Before any PACS test is run, the CCSHandler is switched from SPIRE to PACS.

7.8.1 Thermal Behaviour Test in Photometry

Step #	Action	Comments	Check
1	Execute: PHOT_thermal_OBS_shell.tcl **Executed at:** **16h44m16s UTC**	Initial number indicates relative time in minutes: • 0 photometry HK packets are sent and temperature sensors are on • 1 Groups 1,3,5,6 are switched-on and bolometer temperature sensors are on • 6 Safe polarisations for M7 configuration are set • 11 Chopper is moving between the 2 CSs • 16 Both calibration sources are heating up • 36 The filter wheel changes positions every 15 sec • 39 Chopper moves between the 2 CSs • 44 Both CSs are switched-off • 46 Chopper and grating controller are switched-off • 48 Bolometer array groups 1,3,5,6 are switched-off • 53 HK list is set again to NonPrime	
2	Execute: ENTER_SAFE_Mode_Shell.tcl	Check that PACS is in SAFE mode	

This is the end of day 2 of PACS SPIRE parallel mode IMT.

7.8.2 Setup Photometry

This is the start of day 3 of PACS SPIRE parallel mode IMT. All cryostat temperatures look OK in the morning. Only the shields are somewhat too high (45 K). L0 is constant at 1.8 K, L1 at 4.75 (PACS). The cover is stable around 20 K.

Step #	Action	Comments	Check
1	Execute: PHOT_setup_OBS_shell.tcl **Executed at:** **07h11m06s UTC**	Photometry HK packets are sent	**OK**
		Filter wheel is at position 1, the chopper is near position 0 and the calibration sources are heating up	**OK**
		Groups 1,3,5,6 are switched on, the temperature sensors are on and indicate their expected LHe values and data frequency is 20 Hz	**OK**
		Safe biases are set for the M7 configuration for groups 1,3,5,6	**OK**
		Bolometer and HK data are sent to DMC, check if sequence mode is "Sbolo-Sref"	**OK**
		Check if correct operating biases are set for the M7 configuration for groups	**OK**
		Operating biases are set for the M7 configuration for groups 1,3,5,6	**OK**
		Sequence mode is set to "Sbolo - Sref"	**OK**
		Gain is set to "high"	**OK**

7.8.3 Single Band Photometry

Step #	Action	Comments	Check
1	Execute: PHOT_parallel_setup_obs_shell_01.tcl **Executed at:** **08h01m08s UTC**	Only red array is selected for science transmission	**OK**
2	Execute: PHOT_all_aots_OBS_shell_01.tcl.tcl **Executed at:** **08h01m43s UTC**	• Filter position is "A" • All 7 OBCPs finish correctly • Filter position is "B" (after approx. 13 min) • All 7 OBCPs finish correctly • Filter position is "A" • In total 14 TM (1,7) have been issued	**OK**

7.8.4 Dual Band Photometry

Step #	Action	Comments	Check
1	Execute: PHOT_parallel_setup_obs_shell_02.tcl **Executed at:** **08h28m55s UTC**	Both science arrays are transmitting data	**OK**
2	Execute: PHOT_all_aots_OBS_shell_02.tcl **Executed at:** **08h29m21s UTC**	• Filter position is "A" • All 7 OBCPs finish correctly • Filter position is "B" (after approx. 13 min) • All 7 OBCPs finish correctly • Filter position is "A" • In total 14 TM (1,7) have been issued **During this test, many Source Sequence Count errors were detected on the CCS. Most of them are related to ASED-NC-1247. However, some SSC errors are detected on the science data (type 21,2 packets). This is probably due to insufficient compression of the data. PACS will investigate this problem. More information about the missing packets can be found in Appendix 2.** **The difference between generation and reception time of these 21,2 packets is sometimes quite big (> 20 seconds). PACS indicates that this is normal due to buffering.**	**OK**
3	Execute: ENTER_SAFE_Mode_Shell.tcl **Executed at:** **08h58m54s UTC**	Check that PACS is in SAFE mode	**OK**

7.9 SPIRE tests

7.9.1 Switch to SPIRE CCS handler on I-EGSE and reset SPIRE detector offsets (if necessary)

This CCShandler switch is executed by the SPIRE and PACS personal.

SPIRE indicates that they would first do a PCAL flash before resetting the bias.

Step #	Action	Comments	Check
Extra	Execute: SPIRE-PARALLEL-OBS-END.tcl **Executed at:** **09h18m00s UTC**	Full photometer data transmission stopped and OBSID reset to NULL (0xB0000000)	**OK**
Extra	Execute: SPIRE-PARALLEL-PHOTSTBY.tcl **Executed at:** **09h18m51s UTC**	SPIRE MODE HK Parameter is PHOTSTBY	**OK**
Extra	Execute: SPIRE-PARALLEL-PCAL-FLASH.tcl **Executed at:** **09h19m58s UTC**	Check that commands are successful	**OK**
Extra	Execute: SPIRE-PHOTSTBY-PARALLEL.tcl **Executed at:** **09h24m49s UTC**	On DPU_AND_OBS_PARAMETERS display • SPIRE MODE HK Parameter is PARALLEL	

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-OBS-END.tcl	**This script should not be executed, since the observation already stopped before the PCAL flash**	**N/A**
2	Execute: SPIRE-IMT-RESETS-OFFSET-P.tcl **Executed at:** **09h26m45s UTC**		**OK**
3	Execute: SPIRE-PARALLEL-OBS-START.tcl **Executed at:** **09h29m12s UTC**		**OK**

7.9.2 End the parallel observation

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-OBS-END.tcl **Executed at:** **09h30m01s UTC**	Full photometer data transmission stopped and OBSID reset to NULL (0xB0000000)	**OK**

7.9.3 SPIRE MODE HK Parameter is PHOTSTBY

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-PHOTSTBY.tcl **Executed at:** **09h30m48s UTC**	SPIRE MODE HK Parameter is PHOTSTBY	**OK**

7.9.4 Perform a PCAL Flash

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-PCAL-FLASH.tcl **Executed at:** **09h32m06s UTC**	Check that commands are successful	**OK**

7.9.5 Stop data generation

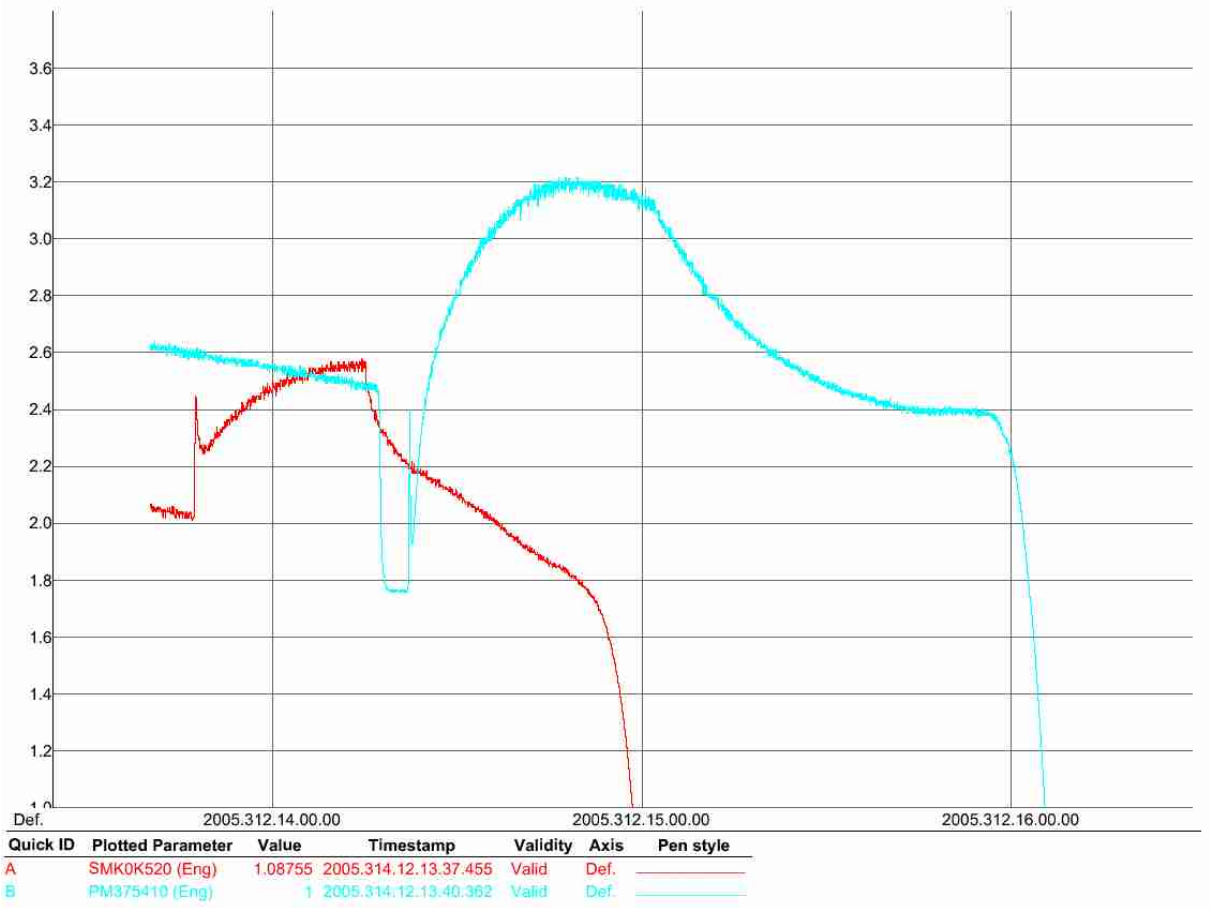
Step #	Action	Comments	Check
1	Execute: SPIRE-IMT-STOP-P **Executed at:** **09h35m11s UTC**	Check that commands are successful	**OK**

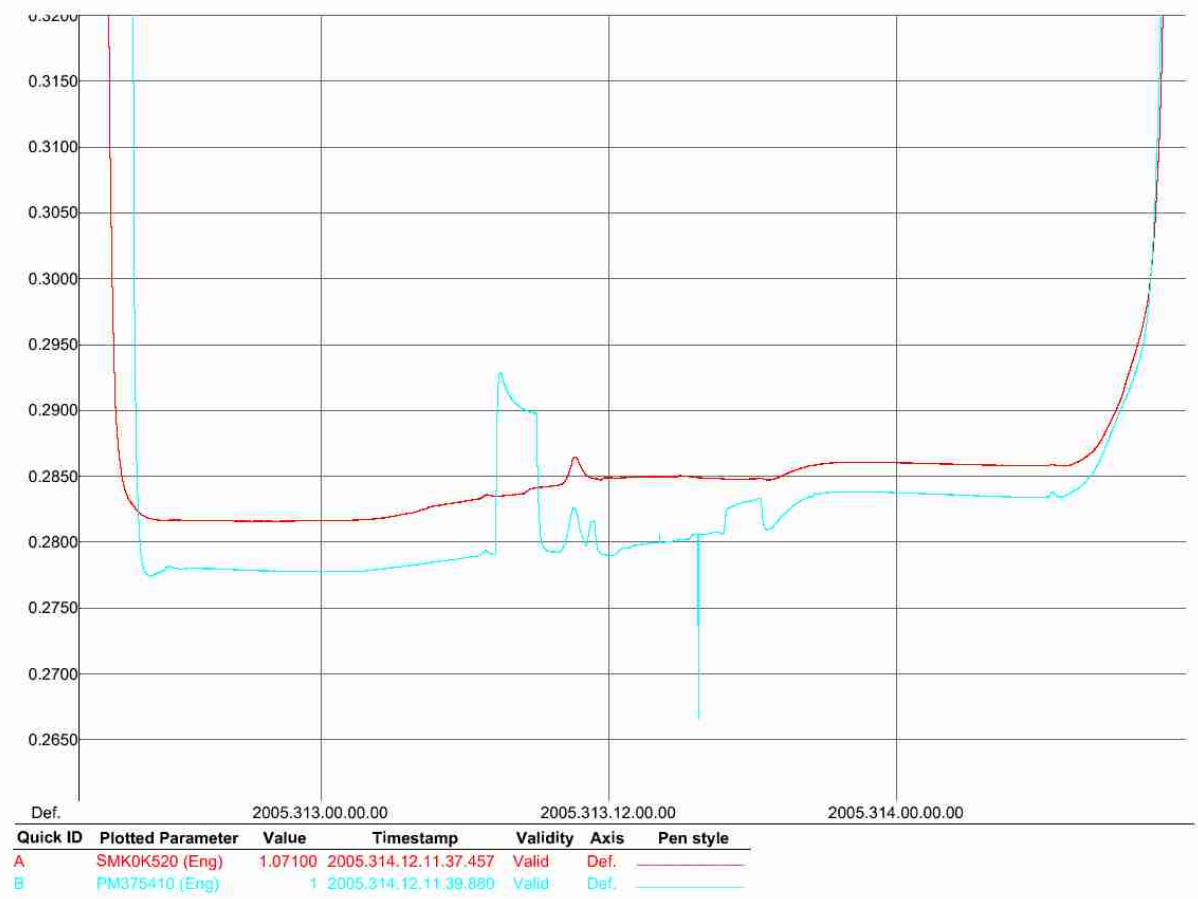
7.9.6 SPIRE to ready from photometer standby, switch off PLW JFETs, switch OFF LIAs

Step #	Action	Comments	Check
1	Execute: SPIRE-PARALLEL-PDET-OFF.tcl **Executed at:** **09h35m55s UTC**	Check: • JFET status “off” • Vss to 0 V • LIA LEDs off on PSU	**OK**

7.10 End of cooler recycles

The instruments are kept in nominal condition overnight to get a good idea about the total cooler recycle time. At 10h30, both coolers crossed the 0.3K simultaneously. This means the total holdtime for both coolers is about 43 hours. Below, 2 graphs of the cooler recycle are included.




0.3150
0.3100
0.3050
0.3000
0.2950
0.2900
0.2850
0.2800
0.2750
0.2700
0.2650
Def.
2005.313.00.00.00
2005.313.12.00.00
2005.314.00.00.00
Quick ID Plotted Parameter Value Timestamp Validity Axis Pen style
A SMK0K520 (Eng) 1.07100 2005.314.12.11.37.457 Valid Def.
B PM375410 (Eng) 1 2005.314.12.11.39.880 Valid Def.

8 Step by Step Procedure: Switch Off Instruments

8.1 Switch Off HIFI

According to Procedure(s):

- **HP-2-ASED-PR-0035 (Chapter 3: Order of Execution – Step 12)**
- **SRON-G/HIFI/PR/2005-101 chapter 2.4.3**

The following steps are executed automatically by the TCL script HIFI_POWER_OFF.tcl (see Appendix 4)

Step #	Action	Comments	Check
1	Select LCU_status AND	Verify LCU is in standby mode. Do not continue if this is not so!	**OK**
2	Switch off power to LCU	Check voltage and current go to zero.	**OK**
3	Switch off power to WEH	Check voltage and current go to zero.	**OK**
4	Switch off power to HRH	Check voltage and current go to zero.	**OK**
5	Switch off power to ICU	Check voltage and current go to zero.	**OK**

8.2 Switch Off PACS

According to Procedure(s):

- **HP-2-ASED-PR-0035 (Chapter 3: Order of Execution – Step 10)**
- **PACS-ME-TP-026 (Issue 1.0 – 29/08/05)**

Step #	Action	Comments	Check
1	Execute: PACS_POWER_OFF.tcl (see Appendix 5)	PACS is sending no TM packets anymore	**OK**
		28 V power is off	**OK**

8.3 Switch Off SPIRE

Remark: SPIRE was left on another night from 27/10/05 to 28/10/05. The switch off occurred on Saturday afternoon (28/10/05).

According to Procedure(s):

- **HP-2-ASED-PR-0035 (Chapter 3: Order of Execution – Step 10)**
- **SPIRE-RAL-PRC-002494 (Issue 1.1 Appendix 2 – 09/09/05)**

8.3.1 SFT-SPIRE-CCS-FUNC-THO

Purpose: Switch off SCU DC and AC thermometry – if necessary

Step #	Action	Comments				Check
1	Execute TCL script SFT-SPIRE-CCS-FUNC-THO.tcl					**OK**
2	A few seconds later record the value of parameter SCUTEMPSTAT	Check if the following parameters change value:				
		Parameter	**Start**	**During**	**End**	
		SCUTEMPSTAT	FFFF	-	0	**OK**
3	A few seconds later record the value of parameter SUBKSTAT	Check if the following parameters change value:				
		Parameter	**Start**	**During**	**End**	
		SUBKSTAT	1	-	0	**OK**
4	Note down the value of the MODE parameter on the DPU AND OBS PARAMETERS Display	Check if the following parameters change value:				
		Parameter	**Start**	**During**	**End**	
		MODE	REDY	-	ON	**OK**

8.3.2 SFT-SPIRE-CCS-DRCU-OFF

Purpose: Switch off the DRCU

Step #	Action	Comments	Check
1	Execute TCL script SFT-SPIRE-CCS-DRCU-ON-STEP1.tcl		**OK**
2	Check that THSK parameter is not refreshing anymore		**OK**
3	Check that TM2N parameter is not incrementing anymore		**OK**
4	Manual Switch off of the DRCU by the I-EGSE staff: • Switch off all 5 remote DCU switches in ANY order (see Figure 4) • Switch off secondary power to the SPIRE Power Bench (see Figure 5) • Switch off primary power to the SPIRE Power Bench (see Figure 2)		**OK**

8.3.3 SFT-SPIRE-CCS-DPU-OFF

Purpose: Switch off the DPU

Step #	Action	Comments	Check
1	Request the CCS staff to power off the SPIRE DPU using the CCS 28V Power Supply	**This action is performed with INST_POWER_OFF.tcl (see Appendix 6)**	**OK**

9 Step by Step Procedure: Set EGSE to OFFLINE

According to Procedure(s):

- **HP-2-ASED-PR-0035 (Chapter 3: Order of Execution – Step 13 to 15)**

Remark: This step is done manually.

Step #	Action	Comments	Check
1	Execute: "WARNING_LAMP_POWER_OFF.tcl"		**N/A**
2	Execute: "EGSE_OFFLINE_AUTO.tcl" (see Appendix 7)	Check: PLM SCOE HK packets stopped	**OK**
		Check: CDMU DFE HK packets stopped	**OK**
3	Shut down PLM EGSE		**OK**

10 Summary Sheets

10.1 Procedure Variation Summary

	Test Change	Curr. No.: Date Page of	
Test designation	Test Procedure	Issue	Rev.
Test step changed	Reason for Change		
Prepared by:	Resp. Test Leader	Project Engineer	
PA/QA	Prime	Customer	

Table 10.1-1: Procedure Variation Sheet

10.2 Non Conformance Report (NCR) Summary

NCR - No.	NCR - Title	Date	Open Closed
HP-112000-ASED-NC-1688	Evaporator temperature not correct wrt L0 temperature	8/11/2005	Open

Table 10.2-1: Non-Conformance Record Sheet

10.3 Sign-off Sheet

	Name	Date	Signature
Test Manager	Siegmund Idler	10.11.05	
Operator	Stijn Ilsen	10.11.05	
PA Responsible	David Hendry	10/11/05	

Appendix 1: PACS SPIRE parallel mode Bus Profile (PACS_SPIRE_par.PST)

```
;Nominal HERSCHEL/PARALLEL Mode bus profile
;PACS is RT 25: 13TM, 2TC
;SPIRE is RT 21: 12TM, 1TC
;HIFI is RT 16: 2TM, 1TC

[Config]
NumberOfSubFrames=64

[SubFrame1]
1=RTaccessSA

[SubFrame2]
1=RTaccessSA

[SubFrame3]
1=RTaccessSA

[SubFrame4]
1=TMpoll,21     ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame5]
1=TMpacket,21  ;TM packet from: SPIRE
2=TMpoll,16    ;TM poll from: HIFI
3=RTaccessSA

[SubFrame6]
1=TMpacket,16  ;TM packet from: HIFI
2=TMpoll,25    ;TM poll from: PACS
3=RTaccessSA

[SubFrame7]
1=TMpacket,25  ;TM packet from: PACS
2=TMpoll,21    ;TM poll from: SPIRE
3=RTaccessSA

[SubFrame8]
1=TMpacket,21  ;TM packet from: SPIRE
2=TMpoll,16    ;TM poll from: HIFI
3=RTaccessSA

[SubFrame9]
1=TMpacket,16  ;TM packet from: HIFI
2=TMpoll,25    ;TM poll from: PACS
3=RTaccessSA

[SubFrame10]
1=TMpacket,25  ;TM packet from: PACS
2=RTaccessSA

[SubFrame11]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame12]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame13]
1=TMpoll,25    ;TM poll from: PACS
2=RTaccessSA

[SubFrame14]
1=TMpacket,25  ;TM packet from: PACS
2=RTaccessSA
```

```
[SubFrame15]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame16]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame17]
1=TCpacket     ;TC packet to: SPIRE
2=RTaccessSA

[SubFrame18]
1=TMpoll,25    ;TM poll from: PACS
2=RTaccessSA

[SubFrame19]
1=TMpacket,25  ;TM packet from: PACS
2=RTaccessSA

[SubFrame20]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame21]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame22]
1=TMpoll,25    ;TM poll from: PACS
2=RTaccessSA

[SubFrame23]
1=TMpacket,25  ;TM packet from: PACS
2=RTaccessSA

[SubFrame24]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame25]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame26]
1=TMpoll,25    ;TM poll from: PACS
2=RTaccessSA

[SubFrame27]
1=TMpacket,25  ;TM packet from: PACS
2=TMpoll,21    ;TM poll from: SPIRE
3=RTaccessSA

[SubFrame28]
1=TMpacket,21  ;TM packet from: SPIRE
2=TMpoll,25    ;TM poll from: PACS
3=RTaccessSA

[SubFrame29]
1=TMpacket,25  ;TM packet from: PACS
2=RTaccessSA

[SubFrame30]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame31]
1=TMpacket,21  ;TM packet from: SPIRE
2=TMpoll,16    ;TM poll from: HIFI
3=RTaccessSA
```

```
[SubFrame32]
1=TMpacket,16  ;TM packet from: HIFI
2=RTaccessSA

[SubFrame33]
1=TimeSync     ;Time distribution broadcast
2=TCpacket     ;TC packet to: PACS
3=TMpoll,25    ;TM poll from: PACS
4=RTaccessSA

[SubFrame34]
1=TMpacket,25  ;TM packet from: PACS
2=RTaccessSA

[SubFrame35]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame36]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame37]
1=TMpoll,25    ;TM poll from: PACS
2=RTaccessSA

[SubFrame38]
1=TMpacket,25  ;TM packet from: PACS
2=RTaccessSA

[SubFrame39]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame40]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame41]
1=TMpoll,25    ;TM poll from: PACS
2=RTaccessSA

[SubFrame42]
1=TMpacket,25  ;TM packet from: PACS
2=RTaccessSA

[SubFrame43]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame44]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA

[SubFrame45]
1=TMpoll,25    ;TM poll from: PACS
2=RTaccessSA

[SubFrame46]
1=TMpacket,25  ;TM packet from: PACS
2=RTaccessSA

[SubFrame47]
1=TMpoll,21    ;TM poll from: SPIRE
2=RTaccessSA

[SubFrame48]
1=TMpacket,21  ;TM packet from: SPIRE
2=RTaccessSA
```

```
[SubFrame49]
1=TCpacket  ;TC packet to: HIFI
2=TMpoll,25    ;TM poll from: PACS
3=RTaccessSA

[SubFrame50]
1=TMpacket,25  ;TM packet from: PACS
2=RTaccessSA

[SubFrame51]
1=RTaccessSA


[SubFrame52]
1=RTaccessSA


[SubFrame53]
1=TMpoll,25    ;TM poll from: PACS
2=RTaccessSA

[SubFrame54]
1=TMpacket,25  ;TM packet from: PACS
2=RTaccessSA

[SubFrame55]
1=RTaccessSA


[SubFrame56]
1=RTaccessSA


[SubFrame57]
1=RTaccessSA


[SubFrame58]
1=RTaccessSA


[SubFrame59]
1=RTaccessSA


[SubFrame60]
1=RTaccessSA


[SubFrame61]
1=RTreadSA,25,1 ;RT status from: PACS


[SubFrame62]
1=RTreadSA,21,1 ;RT status from: SPIRE


[SubFrame63]
1=RTreadSA,16,1 ;RT status from: HIFI
```

Appendix 2: PACS SSC errors on science data (Type 21,2)

```
Event Logger printout from time: 2005.313.06.10.00.539 to time:
2005.313.08.56.22.100
Current printout time: 2005.313.08.56.40.457
Filter info:
  Application       : All
  Workstation       : All
  Packets type      : All
  Packets severity  : FATAL ERROR, WARNING, INFORMATION (excluded)
  Message filter    : /21/

Event time             Stream Application Workstation Severity     Type       Message
-------------------------------------------------------------------------------------------------
-------------------------------------------------------------
2005.313.08.55.33.016  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 15067: SSC check failed, last SSC was 15065
2005.313.08.54.46.343  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 14805: SSC check failed, last SSC was 14803
2005.313.08.53.17.404  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 14458: SSC check failed, last SSC was 14456
2005.313.08.52.04.981  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 14146: SSC check failed, last SSC was 14144
2005.313.08.50.48.006  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 13838: SSC check failed, last SSC was 13836
2005.313.08.49.33.006  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 13554: SSC check failed, last SSC was 13552
2005.313.08.48.25.268  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 13239: SSC check failed, last SSC was 13237
2005.313.08.47.08.094  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 12930: SSC check failed, last SSC was 12928
2005.313.08.45.50.085  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1156/21/2 SSC 7795: SSC check failed, last SSC was 7793
2005.313.08.45.01.702  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 12308: SSC check failed, last SSC was 12306
2005.313.08.43.49.709  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 11998: SSC check failed, last SSC was 11996
2005.313.08.43.04.147  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 11758: SSC check failed, last SSC was 11756
2005.313.08.41.44.918  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 11410: SSC check failed, last SSC was 11408
2005.313.08.40.20.973  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 11083: SSC check failed, last SSC was 11081
2005.313.08.39.08.137  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 10787: SSC check failed, last SSC was 10785
2005.313.08.37.51.010  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 10483: SSC check failed, last SSC was 10481
2005.313.08.36.35.997  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 10204: SSC check failed, last SSC was 10202
2005.313.08.35.28.321  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 9890: SSC check failed, last SSC was 9888
2005.313.08.34.11.070  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 9583: SSC check failed, last SSC was 9581
2005.313.08.32.58.138  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 9263: SSC check failed, last SSC was 9261
2005.313.08.31.40.755  65535  IFMGR       hp4-s       ERROR        SYSTEM     Packet
APID/Type/Stype 1157/21/2 SSC 8955: SSC check failed, last SSC was 8953
```

Appendix 3: HP-112000-ASED-NC-1688 - Evaporator temperature not correct wrt L0 temperature

Tuesday November 8 2005 3:23 PM

Company	Project Name	NCR-No: HP-112000-ASED-NC-1688
ESTEC	HERSCHEL-PLANCK	Related internal NCR-No:
		Critical Item: Yes ☐ No ☒ Revision 0
		Page 1 of 2

Nonconformance Report

NCR **Title** Evaporator temperature not correct wrt L0 temperature	
NC Item **Identification** SPIRE	
Next Higher Assembly HERSCHEL INSTRUMENTS AND TELESCOPE (CFE)	
Drawing No	Sr No.
Procedure No	
Supplier RAL	Purchase Order
Subsystem	Model EQM
NC Observation Date: 07-NOV-05 Location: ASED OTN	NC Detected During Test

Description of Nonconformance — Requirements Violated

During the PACS SPIRE parallel cooler recycle it was noticed that the starting temperature of the evaporators was very different for PACS and SPIRE.
Deeper analysis of the evaporator temperature of SPIRE with respect to the L0 temperature showed some non-
expected results. In nominal STANDBY mode, the evaporator was much colder than the level 0. Other weird
behaviour is the trend of the evaporator, if L0 warms up, then the evaporator cools down. The same in the opposite situation.

SPIRE to investigate what causes this behaviour (error in calibration curve, etc...)

Initiator: Date, Name and Signature 08-NOV-05 S ILSEN

Date:
Name:
Signature:

Appendix 4: Log of HIFI_POWER_OFF.tcl

```
2005.314.12.48.00.172556
********************************************************************************
2005.314.12.48.00.173462 Start of HIFI POWER OFF sequence.
********************************************************************************
2005.314.12.48.00.173835
2005.314.12.48.00.174057 To run this script, the CDMU DFE and PLM SCOE should be
2005.314.12.48.00.174285 powered and configured.
2005.314.12.48.00.174506 To initiate, this script will connect and attach to the CDMUDFE
2005.314.12.48.00.174735 and PLM SCOE.
2005.314.12.48.00.174954
2005.314.12.48.00.175179 >>> Connecting to CDMU DFE.
2005.314.12.48.03.180912 >>> Attaching to CDMU DFE.
2005.314.12.48.06.189680
2005.314.12.48.06.190034 >>> Connecting to PLM SCOE.
2005.314.12.48.09.192666 >>> Attaching to PLM SCOE.
2005.314.12.48.12.195619
2005.314.12.48.12.195984 >>> Reading out CDMUDFE Settings
2005.314.12.48.12.196395
2005.314.12.48.12.337009 Status_CDMU_OnLine is 1 (extracted from TLM YM777944)
2005.314.12.48.12.338803 Status_CDMU_TMpolling is 1 (extracted from TLM YM780944)
2005.314.12.48.12.340470 Status_CDMU_SAreadActive is 1 (extracted from TLM YM781944)
2005.314.12.48.12.342138 Status_CDMU_SAqueueActive is 1 (extracted from TLM YM782944)
2005.314.12.48.12.343795 Status_CDMU_TMqueueActive is 1 (extracted from TLM YM783944)
2005.314.12.48.12.345446 Status_CDMU_TCqueueActive is 1 (extracted from TLM YM784944)
2005.314.12.48.12.347042 Status_CDMU_PSTfileName is PACS_prime_inst.... (extracted from TLM
YM809944)
2005.314.12.48.12.348774 Status_CDMU_PSTrunning is 1 (extracted from TLM YM829944)
2005.314.12.48.12.349319
2005.314.12.48.12.349810 >>> Reading out PLM SCOE Settings
2005.314.12.48.12.350311
2005.314.12.48.12.486748 Status_PLM_OnLine is 1 (extracted from TLM YM018942)
2005.314.12.48.12.488594 Status_PLM_PSU1_Master is currently 1 (extracted from TLM YM129942)
2005.314.12.48.12.490316 Status_PLM_PSU1_Slave is currently 1 (extracted from TLM YM145942)
2005.314.12.48.12.492105 Status_PLM_PSU2_Master is currently 1 (extracted from TLM YM177942)
2005.314.12.48.12.495218 Status_PLM_PSU2_Slave is currently 1 (extracted from TLM YM193942)
2005.314.12.48.12.592318 Status_PLM_LCL1_V is currently 27.8604888916 (extracted from TLM
YM228942)
2005.314.12.48.12.595026 Status_PLM_LCL1_I is currently 0.432388186455 (extracted from TLM
YM232942)
2005.314.12.48.12.598124 Status_PLM_LCL2_V is currently 0.0627383813262 (extracted from TLM
YM244942)
2005.314.12.48.12.600856 Status_PLM_LCL2_I is currently 0.00607919460163 (extracted from TLM
YM248942)
2005.314.12.48.12.604044 Status_PLM_LCL3_V is currently 27.9046401978 (extracted from TLM
YM260942)
2005.314.12.48.12.606741 Status_PLM_LCL3_I is currently 0.909852802753 (extracted from TLM
YM264942)
2005.314.12.48.12.610011 Status_PLM_LCL4_V is currently 27.9418182373 (extracted from TLM
YM276942)
2005.314.12.48.12.612774 Status_PLM_LCL4_I is currently 0.72139775753 (extracted from TLM
YM280942)
2005.314.12.48.12.616022 Status_PLM_LCL5_V is currently 27.9418182373 (extracted from TLM
YM292942)
2005.314.12.48.12.618703 Status_PLM_LCL5_I is currently 0.951393961906 (extracted from TLM
YM296942)
2005.314.12.48.12.621882 Status_PLM_LCL6_V is currently 0.0766802430153 (extracted from TLM
YM308942)
2005.314.12.48.12.624642 Status_PLM_LCL6_I is currently 0.00379949645139 (extracted from TLM
YM312942)
2005.314.12.48.12.628889 Status_PLM_LCL7_V is currently 27.7187461853 (extracted from TLM
YM324942)
2005.314.12.48.12.631665 Status_PLM_LCL7_I is currently 2.62773180008 (extracted from TLM
YM328942)
2005.314.12.48.12.635249 Status_PLM_LCL8_V is currently 0.00929457508028 (extracted from TLM
YM340942)
2005.314.12.48.12.638094 Status_PLM_LCL8_I is currently 0.0045593958348 (extracted from TLM
YM344942)
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2005.314.12.48.12.641296 Status_PLM_LCL9_V is currently 0.00697093131021 (extracted from TLM
YM356942)
2005.314.12.48.12.644123 Status_PLM_LCL9_I is currently 0.00253299763426 (extracted from TLM
YM360942)
2005.314.12.48.12.647447 Status_PLM_LCL10_V is currently 0.00929457508028 (extracted from TLM
YM372942)
2005.314.12.48.12.652065 Status_PLM_LCL10_I is currently 0.00278629735112 (extracted from TLM
YM376942)
2005.314.12.48.12.655950 Status_PLM_LCL11_V is currently 27.967376709 (extracted from TLM
YM388942)
2005.314.12.48.12.658839 Status_PLM_LCL11_I is currently 0.0448340587318 (extracted from TLM
YM392942)
2005.314.12.48.12.662153 Status_PLM_LCL12_V is currently 27.8930225372 (extracted from TLM
YM404942)
2005.314.12.48.12.664956 Status_PLM_LCL12_I is currently 0.743688166142 (extracted from TLM
YM408942)
2005.314.12.48.12.668309 Status_PLM_LCL13_V is currently 27.9557590485 (extracted from TLM
YM420942)
2005.314.12.48.12.671199 Status_PLM_LCL13_I is currently 0.4295963943 (extracted from TLM
YM424942)
2005.314.12.48.12.674541 Status_PLM_LCL14_V is currently 28.0254669189 (extracted from TLM
YM436942)
2005.314.12.48.12.677394 Status_PLM_LCL14_I is currently 0.742928206921 (extracted from TLM
YM440942)
2005.314.12.48.12.678117
2005.314.12.48.12.707902 ******************** USER INFORMATION ********************
2005.314.12.48.12.708728 User Info>: Please make sure that the LCU status is STANDBY and press
OK.
2005.314.12.48.12.709380 ************************************************************
2005.314.12.48.25.817753
2005.314.12.48.25.818097
2005.314.12.48.25.818727 >>> Switch OFF LCU
2005.314.12.48.25.819353
2005.314.12.48.25.961493  Sending Telecommand YC041942 to Disable Limiter 4 HIFI LCU
2005.314.12.48.25.961874
2005.314.12.48.25.962528 >>> Checking
2005.314.12.48.31.965608 LCL 4 has currently a voltage of 0.0371783003211.(from YM276942)
2005.314.12.48.31.966077 LCL 4 has currently a current of 0.00607919460163.(from YM280942)
2005.314.12.48.31.966738
2005.314.12.48.31.967343 >>> Switch OFF WEH
2005.314.12.48.31.967948
2005.314.12.48.32.066597  Sending Telecommand YC041942 to Disable Limiter 5 HIFI WEH
2005.314.12.48.32.066963
2005.314.12.48.32.067583 >>> Checking
2005.314.12.48.38.072949 LCL 5 has currently a voltage of 0.0325310118496.(from YM292942)
2005.314.12.48.38.073358 LCL 5 has currently a current of 0.000759899325203.(from YM296942)
2005.314.12.48.38.073981
2005.314.12.48.38.074567 >>> Switch OFF HRH
2005.314.12.48.38.075186
2005.314.12.48.38.172089  Sending Telecommand YC041942 to Disable Limiter 7 HIFI HRH
2005.314.12.48.38.172456
2005.314.12.48.38.173058 >>> Checking
2005.314.12.48.44.178425 LCL 7 has currently a voltage of 0.034854657948.(from YM324942)
2005.314.12.48.44.178825 LCL 7 has currently a current of 0.00506599526852.(from YM328942)
2005.314.12.48.44.179468
2005.314.12.48.44.180042 >>> Switch OFF ICU
2005.314.12.48.44.180611
2005.314.12.48.44.244774  Sending Telecommand YC041942 to Disable Limiter 3 HIFI ICU
2005.314.12.48.44.245147
2005.314.12.48.44.245720 >>> Checking
2005.314.12.48.50.248763 LCL 3 has currently a voltage of 0.00929457508028.(from YM260942)
2005.314.12.48.50.249163 LCL 3 has currently a current of 0.00759899290279.(from YM264942)
2005.314.12.48.50.249766
2005.314.12.48.50.753511 HIFI is off
2005.314.12.48.50.753915 >>> Reading out CDMUDFE Settings
2005.314.12.48.50.754676
2005.314.12.48.50.755863 Status_CDMU_OnLine is 1 (extracted from TLM YM777944)
2005.314.12.48.50.756915 Status_CDMU_TMpolling is 1 (extracted from TLM YM780944)
2005.314.12.48.50.757956 Status_CDMU_SAreadActive is 1 (extracted from TLM YM781944)
2005.314.12.48.50.759045 Status_CDMU_SAqueueActive is 1 (extracted from TLM YM782944)
2005.314.12.48.50.760158 Status_CDMU_TMqueueActive is 1 (extracted from TLM YM783944)
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2005.314.12.48.50.761437 Status_CDMU_TCqueueActive is 1 (extracted from TLM YM784944)
2005.314.12.48.50.763304 Status_CDMU_PSTfileName is PACS_prime_inst.... (extracted from TLM
YM809944)
2005.314.12.48.50.764360 Status_CDMU_PSTrunning is 1 (extracted from TLM YM829944)
2005.314.12.48.50.764972
2005.314.12.48.50.765606 >>> Reading out PLM SCOE Settings
2005.314.12.48.50.766187
2005.314.12.48.50.767172 Status_PLM_OnLine is 1 (extracted from TLM YM018942)
2005.314.12.48.50.768199 Status_PLM_PSU1_Master is currently 1 (extracted from TLM YM129942)
2005.314.12.48.50.769658 Status_PLM_PSU1_Slave is currently 1 (extracted from TLM YM145942)
2005.314.12.48.50.770825 Status_PLM_PSU2_Master is currently 1 (extracted from TLM YM177942)
2005.314.12.48.50.771861 Status_PLM_PSU2_Slave is currently 1 (extracted from TLM YM193942)
2005.314.12.48.50.772928 Status_PLM_LCL1_V is currently 27.8604888916 (extracted from TLM
YM228942)
2005.314.12.48.50.774080 Status_PLM_LCL1_I is currently 0.432999759912 (extracted from TLM
YM232942)
2005.314.12.48.50.776638 Status_PLM_LCL2_V is currently 0.0627383813262 (extracted from TLM
YM244942)
2005.314.12.48.50.777752 Status_PLM_LCL2_I is currently 0.00607919460163 (extracted from TLM
YM248942)
2005.314.12.48.50.778905 Status_PLM_LCL3_V is currently 0.00929457508028 (extracted from TLM
YM260942)
2005.314.12.48.50.780009 Status_PLM_LCL3_I is currently 0.00759899290279 (extracted from TLM
YM264942)
2005.314.12.48.50.782123 Status_PLM_LCL4_V is currently 0.034854657948 (extracted from TLM
YM276942)
2005.314.12.48.50.783474 Status_PLM_LCL4_I is currently 0.00607919460163 (extracted from TLM
YM280942)
2005.314.12.48.50.784613 Status_PLM_LCL5_V is currently 0.0325310118496 (extracted from TLM
YM292942)
2005.314.12.48.50.785927 Status_PLM_LCL5_I is currently 0.000759899325203 (extracted from TLM
YM296942)
2005.314.12.48.50.787264 Status_PLM_LCL6_V is currently 0.0766802430153 (extracted from TLM
YM308942)
2005.314.12.48.50.794994 Status_PLM_LCL6_I is currently 0.00379949645139 (extracted from TLM
YM312942)
2005.314.12.48.50.796196 Status_PLM_LCL7_V is currently 0.034854657948 (extracted from TLM
YM324942)
2005.314.12.48.50.797314 Status_PLM_LCL7_I is currently 0.00506599526852 (extracted from TLM
YM328942)
2005.314.12.48.50.798426 Status_PLM_LCL8_V is currently 0.00929457508028 (extracted from TLM
YM340942)
2005.314.12.48.50.799525 Status_PLM_LCL8_I is currently 0.00405279640108 (extracted from TLM
YM344942)
2005.314.12.48.50.800616 Status_PLM_LCL9_V is currently 0.00697093131021 (extracted from TLM
YM356942)
2005.314.12.48.50.801723 Status_PLM_LCL9_I is currently 0.00253299763426 (extracted from TLM
YM360942)
2005.314.12.48.50.802833 Status_PLM_LCL10_V is currently 0.00929457508028 (extracted from TLM
YM372942)
2005.314.12.48.50.803917 Status_PLM_LCL10_I is currently 0.00278629735112 (extracted from TLM
YM376942)
2005.314.12.48.50.805028 Status_PLM_LCL11_V is currently 27.967376709 (extracted from TLM
YM388942)
2005.314.12.48.50.806148 Status_PLM_LCL11_I is currently 0.0448340587318 (extracted from TLM
YM392942)
2005.314.12.48.50.807253 Status_PLM_LCL12_V is currently 27.8906974792 (extracted from TLM
YM404942)
2005.314.12.48.50.808365 Status_PLM_LCL12_I is currently 0.751287102699 (extracted from TLM
YM408942)
2005.314.12.48.50.809477 Status_PLM_LCL13_V is currently 27.9557590485 (extracted from TLM
YM420942)
2005.314.12.48.50.810611 Status_PLM_LCL13_I is currently 0.429849714041 (extracted from TLM
YM424942)
2005.314.12.48.50.811742 Status_PLM_LCL14_V is currently 28.0231437683 (extracted from TLM
YM436942)
2005.314.12.48.50.812869 Status_PLM_LCL14_I is currently 0.74267488718 (extracted from TLM
YM440942)
2005.314.12.48.50.813547
2005.314.12.48.50.814153
********************************************************************************
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2005.314.12.48.50.815220 PACS Power Off Sequence has ended
********************************************************************************
2005.314.12.48.50.815969
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Appendix 5: Log of PACS_POWER_OFF.tcl

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2005.314.12.49.07.186727
********************************************************************************
2005.314.12.49.07.187671 Start of PACS POWER OFF sequence.
********************************************************************************
2005.314.12.49.07.187981
2005.314.12.49.07.188203 To run this script, the CDMU DFE and PLM SCOE should be
2005.314.12.49.07.188433 powered and configured.
2005.314.12.49.07.188656 To initiate, this script will connect and attach to the CDMUDFE
2005.314.12.49.07.188888 and PLM SCOE.
2005.314.12.49.07.189105
2005.314.12.49.07.189336 >>> Connecting to CDMU DFE.
2005.314.12.49.10.194479 >>> Attaching to CDMU DFE.
2005.314.12.49.13.199394
2005.314.12.49.13.199751 >>> Connecting to PLM SCOE.
2005.314.12.49.16.202365 >>> Attaching to PLM SCOE.
2005.314.12.49.19.205285
2005.314.12.49.19.205645 >>> Reading out CDMUDFE Settings
2005.314.12.49.19.206053
2005.314.12.49.19.311551 Status_CDMU_OnLine is 1 (extracted from TLM YM777944)
2005.314.12.49.19.313331 Status_CDMU_TMpolling is 1 (extracted from TLM YM780944)
2005.314.12.49.19.314965 Status_CDMU_SAreadActive is 1 (extracted from TLM YM781944)
2005.314.12.49.19.316574 Status_CDMU_SAqueueActive is 1 (extracted from TLM YM782944)
2005.314.12.49.19.318200 Status_CDMU_TMqueueActive is 1 (extracted from TLM YM783944)
2005.314.12.49.19.319857 Status_CDMU_TCqueueActive is 1 (extracted from TLM YM784944)
2005.314.12.49.19.321377 Status_CDMU_PSTfileName is PACS_prime_inst.... (extracted from TLM
YM809944)
2005.314.12.49.19.323053 Status_CDMU_PSTrunning is 1 (extracted from TLM YM829944)
2005.314.12.49.19.323594
2005.314.12.49.19.324081 >>> Reading out PLM SCOE Settings
2005.314.12.49.19.324588
2005.314.12.49.19.461096 Status_PLM_OnLine is 1 (extracted from TLM YM018942)
2005.314.12.49.19.462964 Status_PLM_PSU1_Master is currently 1 (extracted from TLM YM129942)
2005.314.12.49.19.464694 Status_PLM_PSU1_Slave is currently 1 (extracted from TLM YM145942)
2005.314.12.49.19.466438 Status_PLM_PSU2_Master is currently 1 (extracted from TLM YM177942)
2005.314.12.49.19.468164 Status_PLM_PSU2_Slave is currently 1 (extracted from TLM YM193942)
2005.314.12.49.19.471206 Status_PLM_LCL1_V is currently 27.8604888916 (extracted from TLM
YM228942)
2005.314.12.49.19.473834 Status_PLM_LCL1_I is currently 0.432082355022 (extracted from TLM
YM232942)
2005.314.12.49.19.476872 Status_PLM_LCL2_V is currently 0.0650620236993 (extracted from TLM
YM244942)
2005.314.12.49.19.479489 Status_PLM_LCL2_I is currently 0.00557259470224 (extracted from TLM
YM248942)
2005.314.12.49.19.482612 Status_PLM_LCL3_V is currently 0.00929457508028 (extracted from TLM
YM260942)
2005.314.12.49.19.485394 Status_PLM_LCL3_I is currently 0.00759899290279 (extracted from TLM
YM264942)
2005.314.12.49.19.488503 Status_PLM_LCL4_V is currently 0.034854657948 (extracted from TLM
YM276942)
2005.314.12.49.19.491198 Status_PLM_LCL4_I is currently 0.00607919460163 (extracted from TLM
YM280942)
2005.314.12.49.19.494386 Status_PLM_LCL5_V is currently 0.0302073694766 (extracted from TLM
YM292942)
2005.314.12.49.19.497085 Status_PLM_LCL5_I is currently 0.000759899325203 (extracted from TLM
YM296942)
2005.314.12.49.19.500188 Status_PLM_LCL6_V is currently 0.079003892839 (extracted from TLM
YM308942)
2005.314.12.49.19.502856 Status_PLM_LCL6_I is currently 0.00379949645139 (extracted from TLM
YM312942)
2005.314.12.49.19.505995 Status_PLM_LCL7_V is currently 0.034854657948 (extracted from TLM
YM324942)
2005.314.12.49.19.508682 Status_PLM_LCL7_I is currently 0.00506599526852 (extracted from TLM
YM328942)
2005.314.12.49.19.511868 Status_PLM_LCL8_V is currently 0.00929457508028 (extracted from TLM
YM340942)
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2005.314.12.49.19.514570 Status_PLM_LCL8_I is currently 0.0045593958348 (extracted from TLM
YM344942)
2005.314.12.49.19.517764 Status_PLM_LCL9_V is currently 0.00697093131021 (extracted from TLM
YM356942)
2005.314.12.49.19.520505 Status_PLM_LCL9_I is currently 0.00253299763426 (extracted from TLM
YM360942)
2005.314.12.49.19.523698 Status_PLM_LCL10_V is currently 0.00929457508028 (extracted from TLM
YM372942)
2005.314.12.49.19.526494 Status_PLM_LCL10_I is currently 0.00278629735112 (extracted from TLM
YM376942)
2005.314.12.49.19.529879 Status_PLM_LCL11_V is currently 27.967376709 (extracted from TLM
YM388942)
2005.314.12.49.19.532713 Status_PLM_LCL11_I is currently 0.0448340587318 (extracted from TLM
YM392942)
2005.314.12.49.19.536067 Status_PLM_LCL12_V is currently 27.8883743286 (extracted from TLM
YM404942)
2005.314.12.49.19.538855 Status_PLM_LCL12_I is currently 0.749767303467 (extracted from TLM
YM408942)
2005.314.12.49.19.542119 Status_PLM_LCL13_V is currently 27.9557590485 (extracted from TLM
YM420942)
2005.314.12.49.19.544934 Status_PLM_LCL13_I is currently 0.429343104362 (extracted from TLM
YM424942)
2005.314.12.49.19.548257 Status_PLM_LCL14_V is currently 28.0254669189 (extracted from TLM
YM436942)
2005.314.12.49.19.551134 Status_PLM_LCL14_I is currently 0.742421627045 (extracted from TLM
YM440942)
2005.314.12.49.19.551819
2005.314.12.49.19.552449 Reset bias for all groups sequentially
2005.314.12.49.32.775178 BOL biases are set to zero
2005.314.12.49.32.775558 Now BOLC is prepared for switch-off
2005.314.12.49.32.776196 Set temperature probes off
2005.314.12.49.33.292549 Set all groups to OFF
2005.314.12.49.35.309775 >>> Switch OFF SPU
2005.314.12.49.35.310146
2005.314.12.49.35.377310  Sending Telecommand YC041942 to Disable Limiter 14 PACS SPU
2005.314.12.49.35.377776
2005.314.12.49.35.378681 >>> Checking
2005.314.12.49.41.382867 LCL 14 has currently a voltage of 0.090622112155.(from YM436942)
2005.314.12.49.41.383299 LCL 14 has currently a current of 0.00430609611794.(from YM440942)
2005.314.12.49.41.383949
2005.314.12.49.41.887400 >>> Switch OFF BOLC
2005.314.12.49.41.887761
2005.314.12.49.42.036317  Sending Telecommand YC041942 to Disable Limiter 11 PACS BOLC
2005.314.12.49.42.036690
2005.314.12.49.42.037300 >>> Checking
2005.314.12.49.48.040850 LCL 11 has currently a voltage of 0.00929457508028.(from YM388942)
2005.314.12.49.48.041251 LCL 11 has currently a current of 0.00379949645139.(from YM392942)
2005.314.12.49.48.041900
2005.314.12.49.48.545427 >>> Switch OFF DECMEC
2005.314.12.49.48.545791
2005.314.12.49.48.659139  Sending Telecommand YC041942 to Disable Limiter 12 PACS DECMEC
2005.314.12.49.48.659510
2005.314.12.49.48.660098 >>> Checking
2005.314.12.49.54.663742 LCL 12 has currently a voltage of 0.00697093131021.(from YM404942)
2005.314.12.49.54.664147 LCL 12 has currently a current of 0.0116517897695.(from YM408942)
2005.314.12.49.54.664753
2005.314.12.49.55.168291 >>> Switch OFF DPU
2005.314.12.49.55.168654
2005.314.12.49.55.247808  Sending Telecommand YC041942 to Disable Limiter 13 PACS DPU
2005.314.12.49.55.248200
2005.314.12.49.55.248778 >>> Checking
2005.314.12.50.01.251344 LCL 13 has currently a voltage of 0.0185891501606.(from YM420942)
2005.314.12.50.01.251753 LCL 13 has currently a current of 0.00151979865041.(from YM424942)
2005.314.12.50.01.252367
2005.314.12.50.01.756021 PACS is off
2005.314.12.50.01.756387 >>> Reading out CDMUDFE Settings
2005.314.12.50.01.757023
2005.314.12.50.01.758234 Status_CDMU_OnLine is 1 (extracted from TLM YM777944)
2005.314.12.50.01.759279 Status_CDMU_TMpolling is 1 (extracted from TLM YM780944)
2005.314.12.50.01.760485 Status_CDMU_SAreadActive is 1 (extracted from TLM YM781944)
2005.314.12.50.01.762140 Status_CDMU_SAqueueActive is 1 (extracted from TLM YM782944)
```

```
2005.314.12.50.01.763222 Status_CDMU_TMqueueActive is 1 (extracted from TLM YM783944)
2005.314.12.50.01.764435 Status_CDMU_TCqueueActive is 1 (extracted from TLM YM784944)
2005.314.12.50.01.766490 Status_CDMU_PSTfileName is PACS_prime_inst.... (extracted from TLM
YM809944)
2005.314.12.50.01.768226 Status_CDMU_PSTrunning is 1 (extracted from TLM YM829944)
2005.314.12.50.01.768865
2005.314.12.50.01.769430 >>> Reading out PLM SCOE Settings
2005.314.12.50.01.769993
2005.314.12.50.01.770968 Status_PLM_OnLine is 1 (extracted from TLM YM018942)
2005.314.12.50.01.771993 Status_PLM_PSU1_Master is currently 1 (extracted from TLM YM129942)
2005.314.12.50.01.773034 Status_PLM_PSU1_Slave is currently 1 (extracted from TLM YM145942)
2005.314.12.50.01.774170 Status_PLM_PSU2_Master is currently 1 (extracted from TLM YM177942)
2005.314.12.50.01.775217 Status_PLM_PSU2_Slave is currently 1 (extracted from TLM YM193942)
2005.314.12.50.01.776289 Status_PLM_LCL1_V is currently 27.8604888916 (extracted from TLM
YM228942)
2005.314.12.50.01.777723 Status_PLM_LCL1_I is currently 0.432592064142 (extracted from TLM
YM232942)
2005.314.12.50.01.793975 Status_PLM_LCL2_V is currently 0.0650620236993 (extracted from TLM
YM244942)
2005.314.12.50.01.801283 Status_PLM_LCL2_I is currently 0.00557259470224 (extracted from TLM
YM248942)
2005.314.12.50.01.802578 Status_PLM_LCL3_V is currently 0.00929457508028 (extracted from TLM
YM260942)
2005.314.12.50.01.803868 Status_PLM_LCL3_I is currently 0.00759899290279 (extracted from TLM
YM264942)
2005.314.12.50.01.805197 Status_PLM_LCL4_V is currently 0.034854657948 (extracted from TLM
YM276942)
2005.314.12.50.01.806498 Status_PLM_LCL4_I is currently 0.00607919460163 (extracted from TLM
YM280942)
2005.314.12.50.01.807782 Status_PLM_LCL5_V is currently 0.0325310118496 (extracted from TLM
YM292942)
2005.314.12.50.01.809128 Status_PLM_LCL5_I is currently 0.000759899325203 (extracted from TLM
YM296942)
2005.314.12.50.01.810429 Status_PLM_LCL6_V is currently 0.0766802430153 (extracted from TLM
YM308942)
2005.314.12.50.01.811717 Status_PLM_LCL6_I is currently 0.00379949645139 (extracted from TLM
YM312942)
2005.314.12.50.01.813008 Status_PLM_LCL7_V is currently 0.034854657948 (extracted from TLM
YM324942)
2005.314.12.50.01.814295 Status_PLM_LCL7_I is currently 0.00506599526852 (extracted from TLM
YM328942)
2005.314.12.50.01.815589 Status_PLM_LCL8_V is currently 0.00929457508028 (extracted from TLM
YM340942)
2005.314.12.50.01.816880 Status_PLM_LCL8_I is currently 0.0045593958348 (extracted from TLM
YM344942)
2005.314.12.50.01.818177 Status_PLM_LCL9_V is currently 0.00697093131021 (extracted from TLM
YM356942)
2005.314.12.50.01.819516 Status_PLM_LCL9_I is currently 0.00253299763426 (extracted from TLM
YM360942)
2005.314.12.50.01.820817 Status_PLM_LCL10_V is currently 0.00929457508028 (extracted from TLM
YM372942)
2005.314.12.50.01.822117 Status_PLM_LCL10_I is currently 0.00278629735112 (extracted from TLM
YM376942)
2005.314.12.50.01.823441 Status_PLM_LCL11_V is currently 0.00929457508028 (extracted from TLM
YM388942)
2005.314.12.50.01.824825 Status_PLM_LCL11_I is currently 0.00379949645139 (extracted from TLM
YM392942)
2005.314.12.50.01.826166 Status_PLM_LCL12_V is currently 0.00929457508028 (extracted from TLM
YM404942)
2005.314.12.50.01.827487 Status_PLM_LCL12_I is currently 0.0116517897695 (extracted from TLM
YM408942)
2005.314.12.50.01.828801 Status_PLM_LCL13_V is currently 0.0185891501606 (extracted from TLM
YM420942)
2005.314.12.50.01.830118 Status_PLM_LCL13_I is currently 0.00151979865041 (extracted from TLM
YM424942)
2005.314.12.50.01.831432 Status_PLM_LCL14_V is currently 0.0952693969011 (extracted from TLM
YM436942)
2005.314.12.50.01.832754 Status_PLM_LCL14_I is currently 0.00430609611794 (extracted from TLM
YM440942)
2005.314.12.50.01.833455
2005.314.12.50.01.834065
```

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*********************************************************************************
2005.314.12.50.01.835058 PACS Power Off Sequence has ended
*********************************************************************************
2005.314.12.50.01.835778
```

Appendix 6: Log of INST_POWER_OFF.tcl (used for SPIRE)

```
2005.314.12.59.21.322884
*******************************************************************************
2005.314.12.59.21.323814 Start of Instrument POWER OFF sequence.
*******************************************************************************
2005.314.12.59.21.324125
2005.314.12.59.21.324346  To run this script, the CDMU DFE and PLM SCOE should be
2005.314.12.59.21.324578  powered and configured.
2005.314.12.59.21.324800  To initiate, this script will connect and attach to the CDMUDFE
2005.314.12.59.21.325037  and PLM SCOE.
2005.314.12.59.21.325258
2005.314.12.59.21.325479 Connecting to CDMU DFE
2005.314.12.59.23.331131 Attaching to CMDU DFE
2005.314.12.59.24.336692
2005.314.12.59.24.337046 Connecting to PLM SCOE
2005.314.12.59.26.340007 Attaching to PLM SCOE
2005.314.12.59.27.343579 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.314.12.59.27.343962 >>>>>>>>  Reading out CDMUDFE Settings
2005.314.12.59.27.344393 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.314.12.59.27.344804
2005.314.12.59.27.447133 Status_CDMU_OnLine is 1 (extracted from TLM YM777944)
2005.314.12.59.27.449065 Status_CDMU_TMpolling is 1 (extracted from TLM YM780944)
2005.314.12.59.27.450740 Status_CDMU_SAreadActive is 1 (extracted from TLM YM781944)
2005.314.12.59.27.452383 Status_CDMU_SAqueueActive is 1 (extracted from TLM YM782944)
2005.314.12.59.27.454066 Status_CDMU_TMqueueActive is 1 (extracted from TLM YM783944)
2005.314.12.59.27.455835 Status_CDMU_TCqueueActive is 1 (extracted from TLM YM784944)
2005.314.12.59.27.457418 Status_CDMU_PSTfileName is SPIRE_prime_inst... (extracted from TLM
YM809944)
2005.314.12.59.27.459115 Status_CDMU_PSTrunning is 1 (extracted from TLM YM829944)
2005.314.12.59.27.459710
2005.314.12.59.27.460211 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.314.12.59.27.460747 >>>>>>>>  Reading out PLM SCOE Settings
2005.314.12.59.27.461273 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.314.12.59.27.461816
2005.314.12.59.27.643404 Status_PLM_OnLine is 1 (extracted from TLM YM018942)
2005.314.12.59.27.645389 Status_PLM_PSU1_Master is currently 1 (extracted from TLM YM129942)
2005.314.12.59.27.647162 Status_PLM_PSU1_Slave is currently 1 (extracted from TLM YM145942)
2005.314.12.59.27.648931 Status_PLM_PSU2_Master is currently 1 (extracted from TLM YM177942)
2005.314.12.59.27.650814 Status_PLM_PSU2_Slave is currently 1 (extracted from TLM YM193942)
2005.314.12.59.27.654000 Status_PLM_LCL1_V is currently 27.8604888916 (extracted from TLM
YM228942)
2005.314.12.59.27.656703 Status_PLM_LCL1_I is currently 0.432999759912 (extracted from TLM
YM232942)
2005.314.12.59.27.659809 Status_PLM_LCL2_V is currently 0.0627383813262 (extracted from TLM
YM244942)
2005.314.12.59.27.662480 Status_PLM_LCL2_I is currently 0.00557259470224 (extracted from TLM
YM248942)
2005.314.12.59.27.665572 Status_PLM_LCL3_V is currently 0.00929457508028 (extracted from TLM
YM260942)
2005.314.12.59.27.668288 Status_PLM_LCL3_I is currently 0.00759899290279 (extracted from TLM
YM264942)
2005.314.12.59.27.671392 Status_PLM_LCL4_V is currently 0.034854657948 (extracted from TLM
YM276942)
2005.314.12.59.27.674328 Status_PLM_LCL4_I is currently 0.00607919460163 (extracted from TLM
YM280942)
2005.314.12.59.27.678148 Status_PLM_LCL5_V is currently 0.0325310118496 (extracted from TLM
YM292942)
2005.314.12.59.27.680886 Status_PLM_LCL5_I is currently 0.000759899325203 (extracted from TLM
YM296942)
2005.314.12.59.27.684012 Status_PLM_LCL6_V is currently 0.0766802430153 (extracted from TLM
YM308942)
2005.314.12.59.27.686702 Status_PLM_LCL6_I is currently 0.00379949645139 (extracted from TLM
YM312942)
2005.314.12.59.27.690251 Status_PLM_LCL7_V is currently 0.0371783003211 (extracted from TLM
YM324942)
2005.314.12.59.27.693033 Status_PLM_LCL7_I is currently 0.00506599526852 (extracted from TLM
YM328942)
```

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2005.314.12.59.27.696396 Status_PLM_LCL8_V is currently 0.00929457508028 (extracted from TLM
YM340942)
2005.314.12.59.27.699137 Status_PLM_LCL8_I is currently 0.0045593958348 (extracted from TLM
YM344942)
2005.314.12.59.27.702366 Status_PLM_LCL9_V is currently 0.00697093131021 (extracted from TLM
YM356942)
2005.314.12.59.27.705282 Status_PLM_LCL9_I is currently 0.00253299763426 (extracted from TLM
YM360942)
2005.314.12.59.27.708526 Status_PLM_LCL10_V is currently 0.00929457508028 (extracted from TLM
YM372942)
2005.314.12.59.27.711282 Status_PLM_LCL10_I is currently 0.00278629735112 (extracted from TLM
YM376942)
2005.314.12.59.27.714597 Status_PLM_LCL11_V is currently 0.00929457508028 (extracted from TLM
YM388942)
2005.314.12.59.27.717402 Status_PLM_LCL11_I is currently 0.00354619673453 (extracted from TLM
YM392942)
2005.314.12.59.27.720738 Status_PLM_LCL12_V is currently 0.00697093131021 (extracted from TLM
YM404942)
2005.314.12.59.27.723564 Status_PLM_LCL12_I is currently 0.0116517897695 (extracted from TLM
YM408942)
2005.314.12.59.27.726836 Status_PLM_LCL13_V is currently 0.0185891501606 (extracted from TLM
YM420942)
2005.314.12.59.27.729659 Status_PLM_LCL13_I is currently 0.00151979865041 (extracted from TLM
YM424942)
2005.314.12.59.27.733047 Status_PLM_LCL14_V is currently 0.0952693969011 (extracted from TLM
YM436942)
2005.314.12.59.27.735989 Status_PLM_LCL14_I is currently 0.00430609611794 (extracted from TLM
YM440942)
2005.314.12.59.27.736722
2005.314.12.59.27.737349
*********************************************************************************
2005.314.12.59.27.738371 Power On Instruments
*********************************************************************************
2005.314.12.59.27.739106
2005.314.12.59.27.739754
2005.314.12.59.27.740396
2005.314.12.59.27.741034 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.314.12.59.27.741681 >>>>>>>>  Start Up Instruments
2005.314.12.59.27.742324 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.314.12.59.27.743027
2005.314.12.59.27.846215  Which instrument needs to be Powered down? PACS, SPIRE, HIFI, CCU?
2005.314.12.59.33.453357  You have selected to power down SPIRE.
2005.314.12.59.33.453913
2005.314.12.59.33.454552  The current power down order is:
2005.314.12.59.33.455343  ---------------------------------
2005.314.12.59.33.457039  1. LCL 1    SPIRE HSDPU     Voltage: 27.8604888916 V     Current:
0.432082355022 A
2005.314.12.59.33.457791  2. LCL 0    N/A     Voltage: N/A V     Current: N/A A
2005.314.12.59.33.458471
2005.314.12.59.33.761209  Do you want to change this order? : Choose Yes or No
2005.314.12.59.35.203557  User has chosen NO
2005.314.12.59.37.207609
2005.314.12.59.37.207990  >>> Disable LCL's
2005.314.12.59.37.208616
2005.314.12.59.37.239847  Do you want to disable LCL 1? : Choose Yes or No
2005.314.12.59.38.283920  User has chosen YES
2005.314.12.59.40.288642
2005.314.12.59.40.371021  Sending Telecommand YC041942 to Disable Limiter
2005.314.12.59.40.371394  Synchronizing on SEV...
2005.314.12.59.40.377110  Synchronised on SEV for TC(s): YC041942
2005.314.12.59.40.377482
2005.314.12.59.40.378096  >>> Checking
2005.314.12.59.46.381363  LCL 1 has currently a voltage of 0.00697093131021.(from YM228942)
2005.314.12.59.46.381772  LCL 1 has currently a current of 0.00101930263918.(from YM232942)
2005.314.12.59.46.382412
2005.314.12.59.46.407867 ******************** USER INFORMATION ********************
2005.314.12.59.46.408626 User Info>: Check Successful! LCL 1 has been disabled.
2005.314.12.59.46.409247 *********************************************************
2005.314.12.59.48.365244
2005.314.12.59.48.396545 ******************** USER INFORMATION ********************
2005.314.12.59.48.397316 User Info>: No LCL is selected to be switched on as second
```

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2005.314.12.59.48.397933 ********************************************************
2005.314.12.59.48.942156
2005.314.12.59.48.972830  Do you want to disable PSU(s)? : Choose Yes or No
2005.314.12.59.50.692475  User has chosen NO
2005.314.12.59.52.696758
2005.314.12.59.52.698041  PSU 1 Master status is currently 1 (from YM129942)
2005.314.12.59.52.698960  PSU 1 Slave status is currently 1 (from YM145942)
2005.314.12.59.52.700379  PSU 2 Master status is currently 1 (from YM177942)
2005.314.12.59.52.701017  PSU 2 Slave status is currently 1 (from YM193942)
2005.314.12.59.52.701680
2005.314.12.59.52.702261  Power down of SPIRE is done.
2005.314.12.59.52.702840
2005.314.12.59.52.738250  Do you want to power down another instrument? : Choose Yes or No
2005.314.12.59.54.320120  User has chosen NO
2005.314.12.59.56.324507
2005.314.12.59.56.325167 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.314.12.59.56.325783 >>>>>>>>  Reading out PLM SCOE Settings
2005.314.12.59.56.326381 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.314.12.59.56.326966
2005.314.12.59.56.328190 Status_PLM_OnLine is 1 (extracted from TLM YM018942)
2005.314.12.59.56.329254 Status_PLM_PSU1_Master is currently 1 (extracted from TLM YM129942)
2005.314.12.59.56.330313 Status_PLM_PSU1_Slave is currently 1 (extracted from TLM YM145942)
2005.314.12.59.56.331360 Status_PLM_PSU2_Master is currently 1 (extracted from TLM YM177942)
2005.314.12.59.56.332418 Status_PLM_PSU2_Slave is currently 1 (extracted from TLM YM193942)
2005.314.12.59.56.333511 Status_PLM_LCL1_V is currently 0.00697093131021 (extracted from TLM
YM228942)
2005.314.12.59.56.334622 Status_PLM_LCL1_I is currently 0.00101930263918 (extracted from TLM
YM232942)
2005.314.12.59.56.335735 Status_PLM_LCL2_V is currently 0.0627383813262 (extracted from TLM
YM244942)
2005.314.12.59.56.336846 Status_PLM_LCL2_I is currently 0.00607919460163 (extracted from TLM
YM248942)
2005.314.12.59.56.337945 Status_PLM_LCL3_V is currently 0.00929457508028 (extracted from TLM
YM260942)
2005.314.12.59.56.339041 Status_PLM_LCL3_I is currently 0.00759899290279 (extracted from TLM
YM264942)
2005.314.12.59.56.340189 Status_PLM_LCL4_V is currently 0.034854657948 (extracted from TLM
YM276942)
2005.314.12.59.56.341309 Status_PLM_LCL4_I is currently 0.00607919460163 (extracted from TLM
YM280942)
2005.314.12.59.56.342572 Status_PLM_LCL5_V is currently 0.0325310118496 (extracted from TLM
YM292942)
2005.314.12.59.56.343743 Status_PLM_LCL5_I is currently 0.000759899325203 (extracted from TLM
YM296942)
2005.314.12.59.56.344897 Status_PLM_LCL6_V is currently 0.0766802430153 (extracted from TLM
YM308942)
2005.314.12.59.56.346026 Status_PLM_LCL6_I is currently 0.00379949645139 (extracted from TLM
YM312942)
2005.314.12.59.56.347147 Status_PLM_LCL7_V is currently 0.034854657948 (extracted from TLM
YM324942)
2005.314.12.59.56.348288 Status_PLM_LCL7_I is currently 0.00506599526852 (extracted from TLM
YM328942)
2005.314.12.59.56.349423 Status_PLM_LCL8_V is currently 0.00929457508028 (extracted from TLM
YM340942)
2005.314.12.59.56.350550 Status_PLM_LCL8_I is currently 0.00405279640108 (extracted from TLM
YM344942)
2005.314.12.59.56.351688 Status_PLM_LCL9_V is currently 0.00697093131021 (extracted from TLM
YM356942)
2005.314.12.59.56.352814 Status_PLM_LCL9_I is currently 0.00253299763426 (extracted from TLM
YM360942)
2005.314.12.59.56.353990 Status_PLM_LCL10_V is currently 0.00929457508028 (extracted from TLM
YM372942)
2005.314.12.59.56.355177 Status_PLM_LCL10_I is currently 0.00278629735112 (extracted from TLM
YM376942)
2005.314.12.59.56.356363 Status_PLM_LCL11_V is currently 0.00929457508028 (extracted from TLM
YM388942)
2005.314.12.59.56.357540 Status_PLM_LCL11_I is currently 0.00354619673453 (extracted from TLM
YM392942)
2005.314.12.59.56.358682 Status_PLM_LCL12_V is currently 0.00697093131021 (extracted from TLM
YM404942)
```

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2005.314.12.59.56.359894 Status_PLM_LCL12_I is currently 0.0116517897695 (extracted from TLM
YM408942)
2005.314.12.59.56.361035 Status_PLM_LCL13_V is currently 0.0185891501606 (extracted from TLM
YM420942)
2005.314.12.59.56.362186 Status_PLM_LCL13_I is currently 0.00151979865041 (extracted from TLM
YM424942)
2005.314.12.59.56.363340 Status_PLM_LCL14_V is currently 0.0952693969011 (extracted from TLM
YM436942)
2005.314.12.59.56.364497 Status_PLM_LCL14_I is currently 0.00430609611794 (extracted from TLM
YM440942)
2005.314.12.59.56.365249 <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<
2005.314.12.59.56.365920 <<<<<<<  Power Sequence Ended!
2005.314.12.59.56.366559 <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<
```

Appendix 7: Log of EGSE_OFFLINE_AUTO.tcl (used for SPIRE)

```
*******************************************************************************
2005.314.13.00.08.838939 EGSE OFFLINE Sequence
*******************************************************************************
2005.314.13.00.08.839393
*******************************************************************************
2005.314.13.00.08.839965 Connect and attach to CDMU DFE and PLM SCOE
*******************************************************************************
2005.314.13.00.08.840266
2005.314.13.00.08.840484
2005.314.13.00.08.840707 Connecting to CDMU DFE
2005.314.13.00.10.845192 Attaching to CMDU DFE
2005.314.13.00.11.850710
2005.314.13.00.11.851074 Connecting to PLM SCOE
2005.314.13.00.13.853987 Attaching to PLM SCOE
2005.314.13.00.14.857564
2005.314.13.00.14.857934
2005.314.13.00.14.858337 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.314.13.00.14.858748 >>>>>>>>  Reading out CDMUDFE Settings
2005.314.13.00.14.859203 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.314.13.00.14.859648
2005.314.13.00.14.917156 Status_CDMU_OnLine is 1 (extracted from TLM YM777944)
2005.314.13.00.14.919243 Status_CDMU_TMpolling is 1 (extracted from TLM YM780944)
2005.314.13.00.14.921292 Status_CDMU_SAreadActive is 1 (extracted from TLM YM781944)
2005.314.13.00.14.923359 Status_CDMU_SAqueueActive is 1 (extracted from TLM YM782944)
2005.314.13.00.14.925460 Status_CDMU_TMqueueActive is 1 (extracted from TLM YM783944)
2005.314.13.00.14.927582 Status_CDMU_TCqueueActive is 1 (extracted from TLM YM784944)
2005.314.13.00.14.929548 Status_CDMU_PSTfileName is SPIRE_prime_inst... (extracted from TLM
YM809944)
2005.314.13.00.14.931706 Status_CDMU_PSTrunning is 1 (extracted from TLM YM829944)
2005.314.13.00.14.932330
2005.314.13.00.14.932843 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.314.13.00.14.933376 >>>>>>>>  Reading out PLM SCOE Settings
2005.314.13.00.14.933915 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.314.13.00.14.934470
2005.314.13.00.15.027480 Status_PLM_OnLine is 1 (extracted from TLM YM018942)
2005.314.13.00.15.029692 Status_PLM_PSU1_Master is currently 1 (extracted from TLM YM129942)
2005.314.13.00.15.031894 Status_PLM_PSU1_Slave is currently 1 (extracted from TLM YM145942)
2005.314.13.00.15.034071 Status_PLM_PSU2_Master is currently 1 (extracted from TLM YM177942)
2005.314.13.00.15.036336 Status_PLM_PSU2_Slave is currently 1 (extracted from TLM YM193942)
2005.314.13.00.15.039786 Status_PLM_LCL1_V is currently 0.00697093131021 (extracted from TLM
YM228942)
2005.314.13.00.15.042913 Status_PLM_LCL1_I is currently 0.000917372351978 (extracted from TLM
YM232942)
2005.314.13.00.15.046422 Status_PLM_LCL2_V is currently 0.0650620236993 (extracted from TLM
YM244942)
2005.314.13.00.15.049471 Status_PLM_LCL2_I is currently 0.00557259470224 (extracted from TLM
YM248942)
2005.314.13.00.15.052939 Status_PLM_LCL3_V is currently 0.00929457508028 (extracted from TLM
YM260942)
2005.314.13.00.15.055995 Status_PLM_LCL3_I is currently 0.00709239346907 (extracted from TLM
YM264942)
2005.314.13.00.15.059514 Status_PLM_LCL4_V is currently 0.0325310118496 (extracted from TLM
YM276942)
2005.314.13.00.15.062589 Status_PLM_LCL4_I is currently 0.00607919460163 (extracted from TLM
YM280942)
2005.314.13.00.15.066123 Status_PLM_LCL5_V is currently 0.0302073694766 (extracted from TLM
YM292942)
2005.314.13.00.15.069199 Status_PLM_LCL5_I is currently 0.000759899325203 (extracted from TLM
YM296942)
2005.314.13.00.15.072752 Status_PLM_LCL6_V is currently 0.0766802430153 (extracted from TLM
YM308942)
2005.314.13.00.15.075839 Status_PLM_LCL6_I is currently 0.00379949645139 (extracted from TLM
YM312942)
2005.314.13.00.15.079379 Status_PLM_LCL7_V is currently 0.034854657948 (extracted from TLM
YM324942)
```

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2005.314.13.00.15.082511 Status_PLM_LCL7_I is currently 0.00506599526852 (extracted from TLM
YM328942)
2005.314.13.00.15.086090 Status_PLM_LCL8_V is currently 0.00929457508028 (extracted from TLM
YM340942)
2005.314.13.00.15.089283 Status_PLM_LCL8_I is currently 0.0045593958348 (extracted from TLM
YM344942)
2005.314.13.00.15.092958 Status_PLM_LCL9_V is currently 0.00697093131021 (extracted from TLM
YM356942)
2005.314.13.00.15.096101 Status_PLM_LCL9_I is currently 0.00253299763426 (extracted from TLM
YM360942)
2005.314.13.00.15.099751 Status_PLM_LCL10_V is currently 0.00929457508028 (extracted from TLM
YM372942)
2005.314.13.00.15.102901 Status_PLM_LCL10_I is currently 0.00278629735112 (extracted from TLM
YM376942)
2005.314.13.00.15.106536 Status_PLM_LCL11_V is currently 0.00929457508028 (extracted from TLM
YM388942)
2005.314.13.00.15.109715 Status_PLM_LCL11_I is currently 0.00354619673453 (extracted from TLM
YM392942)
2005.314.13.00.15.113363 Status_PLM_LCL12_V is currently 0.00697093131021 (extracted from TLM
YM404942)
2005.314.13.00.15.116608 Status_PLM_LCL12_I is currently 0.0116517897695 (extracted from TLM
YM408942)
2005.314.13.00.15.120261 Status_PLM_LCL13_V is currently 0.0185891501606 (extracted from TLM
YM420942)
2005.314.13.00.15.123479 Status_PLM_LCL13_I is currently 0.00151979865041 (extracted from TLM
YM424942)
2005.314.13.00.15.127196 Status_PLM_LCL14_V is currently 0.092945754528 (extracted from TLM
YM436942)
2005.314.13.00.15.130483 Status_PLM_LCL14_I is currently 0.00430609611794 (extracted from TLM
YM440942)
*********************************************************************************
2005.314.13.00.15.131636 Switch Off PLM SCOE
*********************************************************************************
2005.314.13.00.15.132348
2005.314.13.00.15.134906 Checking current PLM SCOE status
2005.314.13.00.17.138140
2005.314.13.00.17.138661
2005.314.13.00.17.170425  >>> One (or both) PSU's is still powered. Are you sure to power down
the PLM SCOE? : Choose Yes or No
2005.314.13.00.29.248613  User has chosen YES
2005.314.13.00.31.250760
2005.314.13.00.31.251162
2005.314.13.00.31.251796 Switching PLM SCOE to OFFLINE mode.
*********************************************************************************
2005.314.13.00.34.392681 Switch Off PLM SCOE
*********************************************************************************
2005.314.13.00.35.395834
2005.314.13.00.35.396196 Switching CDMU DFE to OFFLINE mode.
2005.314.13.00.38.494438
2005.314.13.00.38.494801 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.314.13.00.38.495449 >>>>>>>>  Reading out CDMUDFE Settings
2005.314.13.00.38.496076 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.314.13.00.38.496695
2005.314.13.00.38.497976 Status_CDMU_OnLine is 0 (extracted from TLM YM777944)
2005.314.13.00.38.499236 Status_CDMU_TMpolling is 0 (extracted from TLM YM780944)
2005.314.13.00.38.500337 Status_CDMU_SAreadActive is 0 (extracted from TLM YM781944)
2005.314.13.00.38.501425 Status_CDMU_SAqueueActive is 0 (extracted from TLM YM782944)
2005.314.13.00.38.502547 Status_CDMU_TMqueueActive is 0 (extracted from TLM YM783944)
2005.314.13.00.38.503628 Status_CDMU_TCqueueActive is 0 (extracted from TLM YM784944)
2005.314.13.00.38.504834 Status_CDMU_PSTfileName is Empty.PST (extracted from TLM YM809944)
2005.314.13.00.38.505937 Status_CDMU_PSTrunning is 0 (extracted from TLM YM829944)
2005.314.13.00.38.506604
2005.314.13.00.38.507210 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.314.13.00.38.507829 >>>>>>>>  Reading out PLM SCOE Settings
2005.314.13.00.38.508440 >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
2005.314.13.00.38.509049
2005.314.13.00.38.510207 Status_PLM_OnLine is 0 (extracted from TLM YM018942)
2005.314.13.00.38.511342 Status_PLM_PSU1_Master is currently 0 (extracted from TLM YM129942)
2005.314.13.00.38.512421 Status_PLM_PSU1_Slave is currently 0 (extracted from TLM YM145942)
2005.314.13.00.38.513499 Status_PLM_PSU2_Master is currently 0 (extracted from TLM YM177942)
2005.314.13.00.38.514628 Status_PLM_PSU2_Slave is currently 0 (extracted from TLM YM193942)
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2005.314.13.00.38.515783 Status_PLM_LCL1_V is currently 0.00697093131021 (extracted from TLM
YM228942)
2005.314.13.00.38.516891 Status_PLM_LCL1_I is currently 0.000101930265373 (extracted from TLM
YM232942)
2005.314.13.00.38.518044 Status_PLM_LCL2_V is currently 0.0627383813262 (extracted from TLM
YM244942)
2005.314.13.00.38.519233 Status_PLM_LCL2_I is currently 0.000506599550135 (extracted from TLM
YM248942)
2005.314.13.00.38.520332 Status_PLM_LCL3_V is currently 0.00929457508028 (extracted from TLM
YM260942)
2005.314.13.00.38.521440 Status_PLM_LCL3_I is currently 0.000506599550135 (extracted from TLM
YM264942)
2005.314.13.00.38.522548 Status_PLM_LCL4_V is currently 0.034854657948 (extracted from TLM
YM276942)
2005.314.13.00.38.523691 Status_PLM_LCL4_I is currently 0.000506599550135 (extracted from TLM
YM280942)
2005.314.13.00.38.524795 Status_PLM_LCL5_V is currently 0.0302073694766 (extracted from TLM
YM292942)
2005.314.13.00.38.525929 Status_PLM_LCL5_I is currently 0.000253299775068 (extracted from TLM
YM296942)
2005.314.13.00.38.527047 Status_PLM_LCL6_V is currently 0.0766802430153 (extracted from TLM
YM308942)
2005.314.13.00.38.528162 Status_PLM_LCL6_I is currently 0.000253299775068 (extracted from TLM
YM312942)
2005.314.13.00.38.529302 Status_PLM_LCL7_V is currently 0.034854657948 (extracted from TLM
YM324942)
2005.314.13.00.38.530427 Status_PLM_LCL7_I is currently 0.000506599550135 (extracted from TLM
YM328942)
2005.314.13.00.38.531602 Status_PLM_LCL8_V is currently 0.00929457508028 (extracted from TLM
YM340942)
2005.314.13.00.38.532725 Status_PLM_LCL8_I is currently 0.000506599550135 (extracted from TLM
YM344942)
2005.314.13.00.38.533846 Status_PLM_LCL9_V is currently 0.00697093131021 (extracted from TLM
YM356942)
2005.314.13.00.38.534986 Status_PLM_LCL9_I is currently 0.00101319910027 (extracted from TLM
YM360942)
2005.314.13.00.38.536114 Status_PLM_LCL10_V is currently 0.00929457508028 (extracted from TLM
YM372942)
2005.314.13.00.38.537231 Status_PLM_LCL10_I is currently 0.000253299775068 (extracted from TLM
YM376942)
2005.314.13.00.38.538354 Status_PLM_LCL11_V is currently 0.00929457508028 (extracted from TLM
YM388942)
2005.314.13.00.38.539493 Status_PLM_LCL11_I is currently 0.000506599550135 (extracted from TLM
YM392942)
2005.314.13.00.38.540623 Status_PLM_LCL12_V is currently 0.00697093131021 (extracted from TLM
YM404942)
2005.314.13.00.38.541756 Status_PLM_LCL12_I is currently 0.000506599550135 (extracted from TLM
YM408942)
2005.314.13.00.38.542893 Status_PLM_LCL13_V is currently 0.0185891501606 (extracted from TLM
YM420942)
2005.314.13.00.38.544794 Status_PLM_LCL13_I is currently 0.000506599550135 (extracted from TLM
YM424942)
2005.314.13.00.38.558861 Status_PLM_LCL14_V is currently 0.092945754528 (extracted from TLM
YM436942)
2005.314.13.00.38.560105 Status_PLM_LCL14_I is currently 0.000253299775068 (extracted from TLM
YM440942)
*********************************************************************************
2005.314.13.00.38.561190 Disconnect and detach from CDMU DFE and PLM SCOE
*********************************************************************************
2005.314.13.00.38.561931
2005.314.13.00.38.562593
2005.314.13.00.38.563237 Disconnecting from CDMU DFE
2005.314.13.00.40.568059 Detaching from CMDU DFE
2005.314.13.00.41.571604
2005.314.13.00.41.571983 Disconnecting from PLM SCOE
2005.314.13.00.43.574840 Detaching from PLM SCOE
2005.314.13.00.44.578421
```

11 Distribution List

	Name	Dep./Comp.		Name	Dep./Comp.
	Alberti von Mathias Dr.	AOE22		Sonn Nico	AOE51
	Barlage Bernhard	AED11		Steininger Eric	AED44
	Bayer Thomas	AOA52	X	Stritter Rene	AED11
	Brune Holger	AOA55		Thörmer Klaus-Horst Dr.	OTN/AED65
	Fehringer Alexander	AOE13		Wagner Klaus	AOE22
X	Fricke Wolfgang Dr.	AED 65	X	Wietbrock Walter	AET12
	Geiger Hermann	AOA52		Wöhler Hans	AOE22
	Gerner Willi	AED11		Wössner Ulrich	ASE442
X	Grasl Andreas	OTN/AOA54			
	Grasshoff Brigitte	AET12			
	Hauser Armin	AOE22			
X	Hendry David	Terma Resid.			
	Hengstler Reinhold	AOA 5			
	Hinger Jürgen	AOE22	X	Alcatel	ASP
	Hofmann Rolf	ASE442	X	ESA/ESTEC	ESA
X	Hohn Rüdiger	AED65		**Instruments:**	
	Huber Johann	AOA52	X	MPE (PACS)	MPE
	Hund Walter	ASE442	X	RAL (SPIRE)	RAL
X	Idler Siegmund	AED432		SRON (HIFI)	SRON
X	Ilsen Stijn	Terma Resid.		**Subcontractors:**	
	Iványi von András	FAE22		Air Liquide, Space Department	AIR
	Jahn Gerd Dr.	AOE22		Air Liquide, Space Department	AIRS
	Kalde Clemens	APE3		Air Liquide, Orbital System	AIRT
	Kameter Rudolf	OTN/AOA54		Alcatel Bell Space	ABSP
	Kettner Bernhard	AET42		Astrium Sub-Subsyst. & Equipment	ASSE
X	Knoblauch August	AET32		Austrian Aerospace	AAE
X	Koelle Markus	AOA53		Austrian Aerospace	AAEM
X	Kroeker Jürgen	AED65		APCO Technologies S. A.	APCO
	Kunz Oliver Dr.	AOE22		Bieri Engineering B. V.	BIER
X	Lamprecht Ernst	OTN/ASI21		BOC Edwards	BOCE
	Lang Jürgen	ASE442		Dutch Space Solar Arrays	DSSA
	Langenstein Rolf	AED15		EADS CASA Espacio	CASA
	Langfermann Michael	AOA51		EADS CASA Espacio	ECAS
X	Mack Paul	OTN/AOA54		EADS Space Transportation	ASIP
	Müller Jörg	AOA52		Eurocopter	ECD
	Müller Ralf	FAE22		European Test Services	ETS
	Peltz Heinz-Willi	AOE13		HTS AG Zürich	HTSZ
	Pietroboni Karin	AED65		Linde	LIND
	Platzer Wilhelm	AED22		Patria New Technologies Oy	PANT
	Reichle Konrad	AOA52		Phoenix, Volkmarsen	PHOE
	Reuß Friedhelm	AED62		Prototech AS	PROT
X	Rühe Wolfgang	AED65		QMC Instruments Ltd.	QMC
	Runge Axel	OTN/AOA54		Rembe, Brilon	REMB
	Sachsse Bernt	AED21		Rosemount Aerospace GmbH	ROSE
	Schink Dietmar	AED44		RYMSA, Radiación y Microondas	RYM

	Name	Dep./Comp.		Name	Dep./Comp.
X	Schlosser Christian	OTN/AOA54		SENER Ingenieria SA	SEN
	Schmidt Rudolf	FAE22		Stöhr, Königsbrunn	STOE
	Schweickert Gunn	AOE22		Terma A/S, Herlev	TER

END OF DOCUMENT