

## *Preparation of Cool-Down in Sector 78 RAT* Réunion Avancement Travaux

HARDWARE COMMISSIONING COORDINATION - WEEK 48

6 December 2006 8:30 2889-R-009

Present: B. Bellesia, D.Bozzini, P.Chambouvet, V.Chereyre, M.Coccoli, B.Dehning, J.Etheridge, J.C.Guillaume, F.Millet, B.Perea Solano, R.Rabehl, R.Saban, A.Suraci, M.Vadon.

### **Preparation of the Cool-Down in Sector 78**

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Vacuum:

- Purge and filling activities should be starting today.

Cryogenics: -

DFB Commissioning:

- J.C.Guillaume informed that:
  - DFBAO cables positioning is at 70% and will be finished this morning; DFBAO should be finished;
  - The power cables positioning in DFBOs still need to be done and it will be crucial to have the Flohe team working until 6pm today;
  - The power cable position should be checked by P.Denis and D.Bozzini;
  - The correction of non-conformities for the current lead heaters has been completed in Pt8, while in Pt7 there is 1 cable that still needs repair;
  - The non-conformities for the cryo instrumentation are also solved except for 1 cable in the DFBO. Antonio Suraci also stresses that there are a few cables that by design may not withstand the 1.9 kV. He will prepare a list of such cables for tomorrow.
  - Jean-Claude Guillaume will contact Reiner in order to understand his non-conformities.
- R.Rabehl informed that the DFBO+D1 will be included in the Cool-down and thus all the needed preparation should be finished asap (before the end of week 50); the DFBO+D1 will not be powered and thus there is no need to perform EIQA-TP4B on it.
- EIQA-TP4B:
  - Taking place tomorrow Thu 7<sup>th</sup> and Fri 8<sup>th</sup> in RA83 and RR77;
  - D.Bozzini and R.Saban informed about the new access restrictions during EIQA-TP4B for the two upcoming days (Thu 7<sup>th</sup> and Fri 8<sup>th</sup>). An updated schematic layout, sent by mail from R.Saban after the meeting, is attached to this document.

- Pascal Chambouvet will work on the current lead heater functional tests during the tests from AT/MEL. This will be directly coordinated between him and Davide Bozzini.

Safety:

- The Access & Safety cable positioning was finished yesterday.

Preparation of Powering Procedure Test (previously called Dry Run):

- B. Bellesia informed that the 60A SCT are ongoing, but also that the 24 hours heat run is cancelled.

AOB: -

- M.Coccoli informed that he has a preliminary agreement to have the consignment at 6pm also today with J.M.Chevalley; this agreement will be confirmed during the morning.

## Open Issues

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### AC non-conformity

- 13.11.06 Non-conformity of the crates of cryo instrumentation (inrush current) (A.Suraci: ready next year)
- 13.11.06 Non-conformity of the AC cabling of the crates under the magnets. This concerns ACR, MEL, orbit corrector power converters & VAC.

### DC cabling

- 30.11.06 Non conformity: 6 temperature sensor cables need repair (D.Bozzini, A.Suraci)
- 25.11.06 Functional test on the leads heaters: DFBAO, DFBMA, DFBMC, DFBXG
- 22.11.06 Pre-connection of 120A cables in LSSR7 (TS/EL)
- 20.11.06 Galvanic insulation installation on all DFBs (AT/MEL)
- 13.11.06 6 kA and 13 kA cables positioning at DFBAO, DFBMA, DFBMC (Flohe)

### Vacuum

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### Cryogenics

- 22.11.06 Cryo-valves remote control in CCC by AB/CO
- 22.11.06 Control of quench valve

### DFB Commissioning

- 04.12.06 Re-positioning collars used to fix the WRL to the CLs (all DFBs) (A.Perin-D.Bozzini-F.Millet)
- 29.11.06 Pumping of Current Leads insulation vacuum for DFBX
- 13.11.06 EIQA-TP4-A for all DFBs between 7 and 8 (D.Bozzini: next(w48): DFBAO HC module, DFBMA, DFBMC, DFBX)

## Safety

General remark: written communication in advance to announce operations!!!

- 25.11.06 EIQA-TP4B safety procedure (1900 volts tests!).
- 23.11.06 Wooden structure for UA access restriction (that will allow transport).
- 23.11.06 Preparation of a prototype insulating protection (derived from a plastic tube) of the monorail by J-C.Guillaume and approval by J.Etheridge.
- 23.11.06 Water leak on the tunnel concrete wall to be fixed (C33L8).
- 16.11.06 Cool down safety procedure & access conditions

## Preparation of powering test

- 30.11.06 EI\_QA performed on C16L8. ICC test showed reversed sequence of V-taps on circuit RCBV16.L8B1. To be discussed on next RAT.
- 22.11.06 Installation of flexible cables by CV (UA83)
- 16.11.06 Water circulating in UA83 for the Powering Procedure Test: filters need to be checked.

## AOB

- 13.11.06 BPM connection in Q2, Q3, Q4, Q5, Q6, Q7-wk49 (J-C.Guillaume & R.Jones)

## Closed Issues

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Instrumentation cable HV tests in LSS8L (A.Suraci: 4 cables to be tested)	06.12.06
Non-conformity on instrumentation cables (temperature sensors on current leads) (A.Suraci: 3 cables are in repair-Wed.29th)	06.12.06
Quench protection continuity tests and cables assignment LLS7R (DFBMH, DFBAN) and LSS8L (DFBMC, DFBMA and DFBX)	06.12.06
DFBAN cable positioning (J.C.Guillaume)	06.12.06
Access & Safety Cable Installation (full sector) (J.C.Guillaume)	06.12.06
LHCb ODH System ready	04.12.06
Definition of owner of activity and pumping needs for current leads insulation vacuum (DFBX) (S.Feher, R.J.Rabehl)	04.12.06
DFB instrumentation cables to be connected (A.Suraci)	04.12.06
Functional test on the leads heaters DFBMA	04.12.06
Functional test on the leads heaters DFBMC	04.12.06
Non-conformity of the DC cabling of the orbit corrector power converters	04.12.06
Pretest of 60A converters in sector 78, location C16L8.	30.11.06
EIQA-TP4-A on DFBAN, DFBMH, DFBAO LC module	29.11.06
Pumping of insulation vacuum for all DFBs between 7 and 8 (except	29.11.06

DFBX)	
Functional test on the leads heaters DFBMH	29.11.06
Functional test on the leads heaters DFBAN	28.11.06
Pumping of current lead insulation vacuum DFBAO	25.11.06
120A and 600A positioning on DFBAO and DFBMH (INEO)	25.11.06
Missing labels on DFBAO instrumentation cables	24.11.06
Adjustment of cable length on DFBAO	24.11.06
Prototype of galvanic insulation to be tested at Point 6	23.11.06
Definition of Safety procedure for Powering Procedure Test (aka Dry Runs)	23.11.06
Leaks on DFBAO gas recovery line in repair/installation of helicoflex	22.11.06
21 leak detectors to be placed all along the arc 78	22.11.06
Connections (made by TS/MME) of 120 A cables to be verified (TS/EL)	22.11.06
600 A cable positioning on DFBAO	22.11.06
Pumping of current lead insulation vacuum DFBMH	21.11.06
Pressurized air supply to valve on WRL	21.11.06
Support on DFBAO WRL	21.11.06
Bellows in Q6-Q7 LSS8L which had been damaged, is now repaired	20.11.06
Valve on the WRL is operational	20.11.06
Leak in arc Q11-8L	20.11.06
Cryogenic valve manipulation on DFBX	20.11.06
Removal of some BLMs in conflict with the pumping groups	17.11.06
120 A Cables connection in DFBAO, DFBMC, DFBMA and DFBX LSS8L	17.11.06
DS7R and DS8L leak test finished	17.11.06
Leak in R7 repaired	17.11.06
Q6-Q7 bake-out completed	17.11.06
Current lead vacuum: man power and pumping groups availability	15.11.06
Hydraulic connection of the current leads	15.11.06
DFBX AT/MEL Transformers installation	14.11.06
WRL connection DFBMH LSS7R	14.11.06
ELQA-TP3 test of the sector 78	14.11.06
Polarity tests of the 600A and 120A cables for DFBAO and DFBMH (LSS7R)	14.11.06
QUI available	10.11.06
Pressure tests of QUI and DFBAO safety valves finished	10.11.06

QRL valves available for all sector	09.11.06
QRL valve opening/cablings verification	13.11.06
Interconnections DFBAO, DFBMA and DFBMC.	13.11.06
WRL connection at DFBMC, DFBMA and DFBX	13.11.06
120A cables positioning at DFBAO, DFBMA and DFBMC	13.11.06
Q6-Q11L8 leak test envelope	13.11.06
Interconnections of DFBAN and DFBMH	13.11.06

### **Milestones: Test Schedule**

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Week 45	Interconnections
End week 46 [18.11.06]	Leak Test
End week 47 [24.11.06]	Pressure Test
Week 47-48	EE sensor tests in RR77
Week 48 & 49	Purge and filling
Week 49	Dry Run
Week 49	Short Circuit tests of 60 A
Week 49	Diesel Tests
Week 50	Flushing
Week 50 [15.12.06]	Giga PAQ
Week 51	Cool Down Sector 78



### **Next RAT meeting**

**Tuesday, December 7th 8:30 @ P8 2889-R-009**

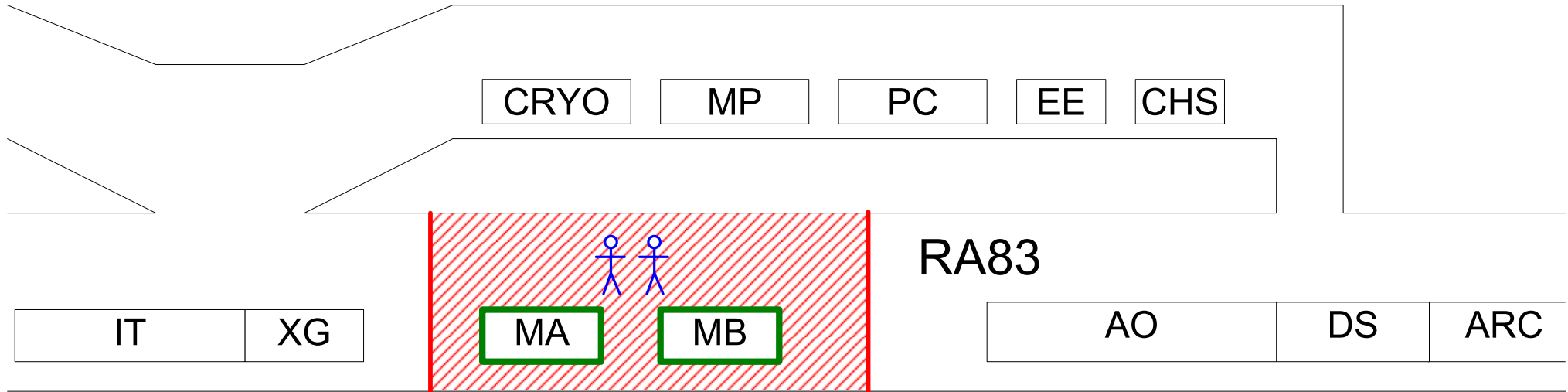
Mirco Coccoli

# ELQA-TP4B High Voltage Electrical Qualification

## Restricted access

Coordination contact: Blanca Perea Solano - 165098  
Technical contact: D. Bozzini - 163817 or V. Chareyre - 165285

From 14:00 to 20:00 on Thursday 7 December



Concerned systems

Blocked areas (barriers, lights, panels)

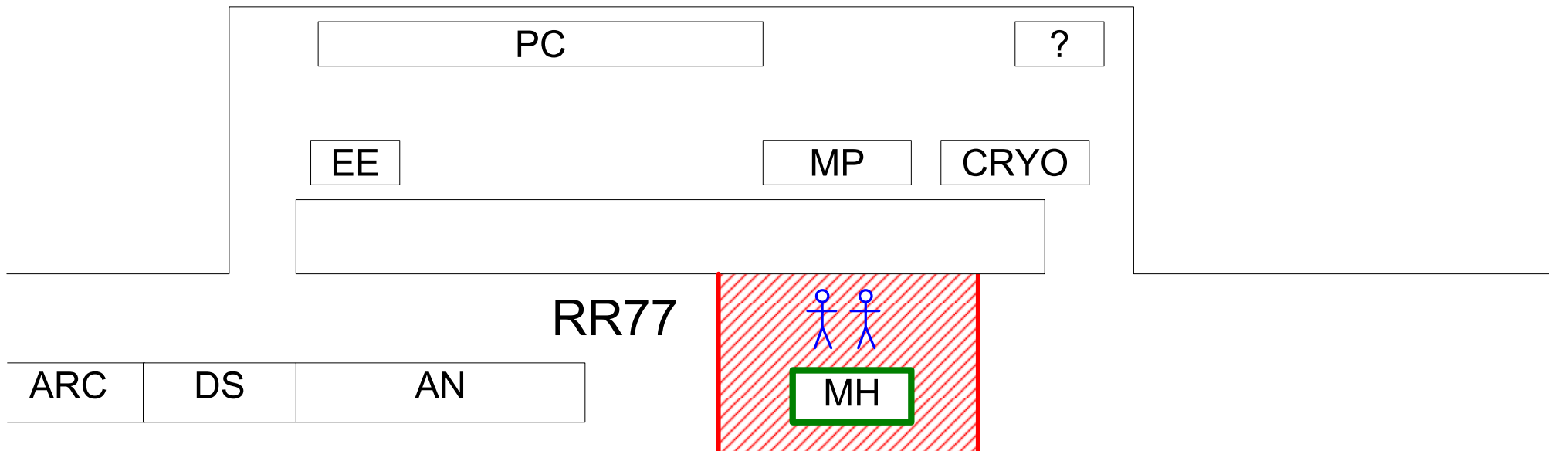
Test operators and survey (3 people)

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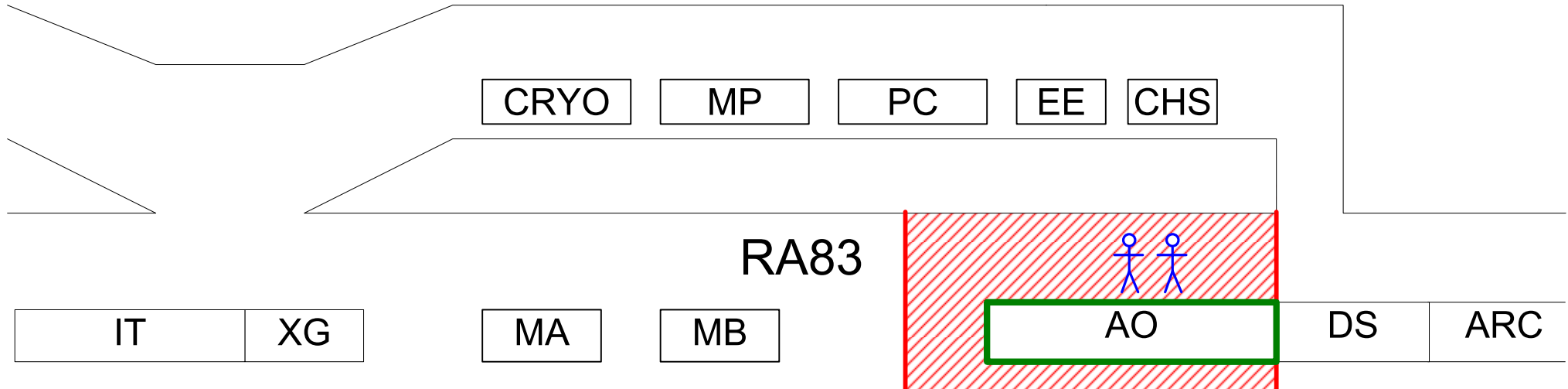
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From 7:00 to 20:00 on Friday 8 December



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Test operators and survey (3 people)

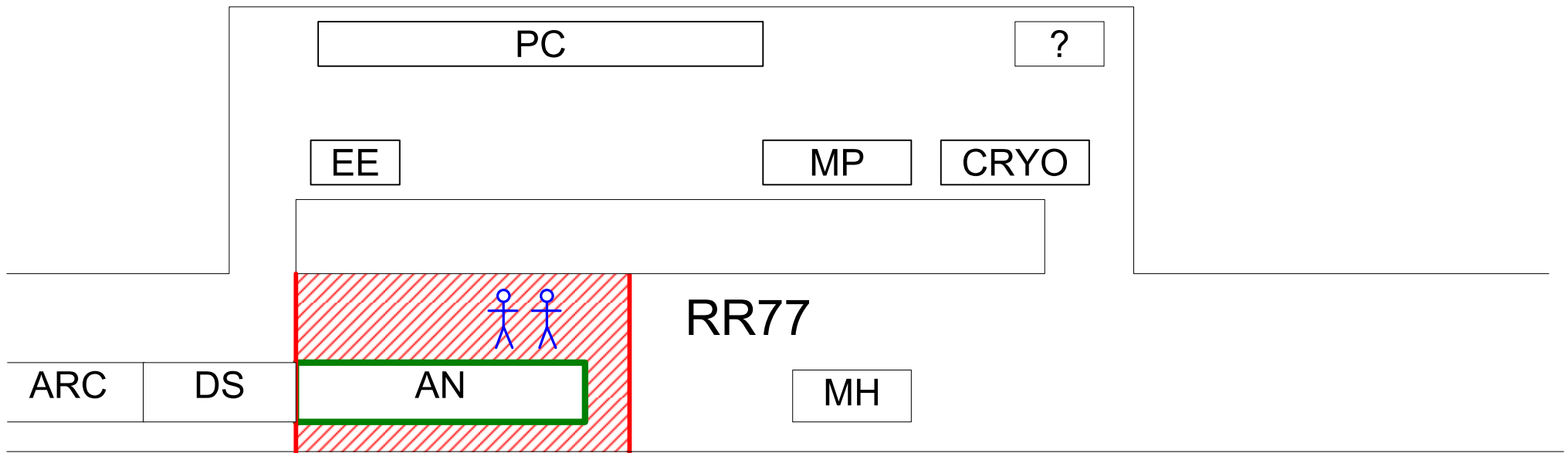


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<b>AT/MEL ELQA</b>	
Davide Bozzini	163817
Vincent Chareyre	165285
<b>AT/MEL Current Leads</b>	
Pascal Chambouvet	164419
<b>AT/MEL QPS</b>	
Reiner Denz	73798
<b>AT/MEL EE Systems</b>	
Knud Dahlerup-Petersen (13kA EE)	163279
Gert-Jan Coelingh (600A EE)	160312
<b>AT/ACR</b>	
Antonio Suraci (Instrumentation)	160771
Francois Millet (Purge, Flushing, Cool-Down)	165312
<b>AT/VAC</b>	
Paul Cruikshank	160756
<b>AB/BI</b>	
Bernd Dehning (BLM)	163110
<b>TS/EL</b>	
Jean Claude Guillaume	163194
Simon Brown	164954
<b>AB/PO</b>	
Hugues Thiesen (60 A Orbit Correctors)	164205
<b>TS/MME</b>	
Laurent Prever-Lori (Power Cable final connection)	164923
<b>AB/OP</b>	
Ronaldus Suykerbuyk (60 A Orbit Correctors)	162336
<b>TS/CV</b>	
Joaquin Inigo Golfín	160062
<b>DFBX</b>	
Sandor Ferher	162448
Roger Rabhel	162504
<b>HC COORDINATION</b>	
Blanca Perea Solano	165098
Boris Bellesia (60 A Orbit Correctors)	162483