

# NEWS

## 2010

<b>Date &amp; Time</b>	<b>Type</b>	<b>Description of event</b>
<b>01/12/2010 18:18:21</b>	<i>polarization</i>	Finish empty cell calibration at 1.1 K. Now removing helium from mixing chamber. --Jaakko
<b>27/11/2010 12:58:37</b>	<i>polarization</i>	Stop 1.4 K empty cell TE-calibration due to helium liquefier problem. Field now zero. --Jaakko
<b>24/11/2010 21:17:13</b>	<i>general ...</i>	Unload ammonia 15:30 and reload empty target holder. Restart cooling down. --Jaakko
<b>11/11/2010 16:23:16</b>	<i>polarization</i>	Go to 0.63 T dipole field with polarizations -77.4 %, +77.5 % and -77.2 %. --Jaakko
<b>10/11/2010 07:18:58</b>	<i>polarization</i>	Start to polarize to - +  spin configuration. --Jaakko
<b>10/11/2010 04:40:39</b>	<i>polarization</i>	Back in 2.5 T solenoid field at 4:12 with polarizations +77.5 %, -74.2 % and +76.4 %. Now in zero field for alignment run. --Jaakko
<b>29/10/2010 15:57:36</b>	<i>polarization</i>	29.Oct.2010 microwave stopped at 9:10 and polarization of +80.8%, -79.0%, +81.2% were obtained. The target is in transversal position. ---Nori
<b>28/10/2010 00:21:26</b>	<i>polarization</i>	27.10.2010 17:10 target was back to 2.5T and polarizations of -83.0%, +81.7%, -81.8% were measured. we started polarizing at 20:15 with + + configuration. ---Nori
<b>20/10/2010 17:09:19</b>	<i>polarization</i>	Back to 2.5 T solenoid with polarizations -84.7 %, +83.4 % and -84.4 %. --Jaakko
<b>20/10/2010 08:59:19</b>	<i>polarization</i>	Back to transverse dipole field 0.63 T with polarizations -84.8 %, +83.6 % and -84.7 %. --Jaakko
<b>19/10/2010 10:30:49</b>	<i>polarization</i>	Back to solenoid 2.5 T field with polarizations -78.9 %, +81.0 % and -79.1 %. Restart polarizing. --Jaakko
<b>18/10/2010 19:08:54</b>	<i>polarization</i>	At 19:00 to transverse dipole field 0.63 T with polarizations -79.7 %, +81.2 % and -79.2 %. --Jaakko
<b>17/10/2010 10:00:29</b>	<i>polarization</i>	Back to longitudinal 2.5 T field at 8:30. Measure polarizations +76.6 %, -73.3 % and +75.6 %. Now in zero field for alignment run. --Jaakko
<b>08/10/2010 09:49:12</b>	<i>polarization</i>	At 9:14 to 0.63 T dipole field with polarizations +79.3 %, -76.9 % and +79.4 %. --Jaakko
<b>06/10/2010 16:54:51</b>	<i>polarization</i>	Back to longitudinal field 2.5 with polarizations -76.7 %, +76.0 % and -74.1 % at 16:45. --Jaakko
<b>30/09/2010 12:25:08</b>	<i>polarization</i>	After end of period 9 at 9:53 the polarisation was measured. Values: -78,3%, 77,9%, and -76,95%. Then back to dipole field.---Guenter---
<b>30/09/2010 12:19:06</b>	<i>polarization</i>	On 24/09/2010 at 21:25 polarizing was stopped. Values reached are: -80,2%, 80,0%, and 79,8%.
<b>23/09/2010 22:54:20</b>	<i>polarization</i>	23/09/2010 22:50 T.Iwata DNP, P(u)=-69%,P(m)=71%,P(d)=-71% in 23 hours from DNP start
<b>23/09/2010 09:09:44</b>	<i>general ...</i>	23/09/2010 Takahiro 5;33 go to 2.5T, take NMR 6;15 reach 0.00T for alignment run 6;29 3He pump #1,#4 Off, for depolarizing still heater decreased, only He3 #1 pump off for 30min. 7;45 go to 2.5T 8:12 DNP

start

**13/09/2010**  
**09:41:39**      *polarization*      Yesterday at 8:00 AM, polarization stopped and went to transverse mode with +82.6%, -80.3%, +80.3%. - Fabrice

**10/09/2010**  
**09:03:26**      *polarization*      Sep.10.2010 We put the magnet back to 2.5T at 8h30 and measured the polarization of -82.9%, +81.5% and -80.32% before to start polarization in the opposite direction. --Nori--

**05/09/2010**  
**15:59:36**      *general ...*      03.09.2010 22h40: Microwave was off and went to the dipole mode with -84.9%, +84.0%, -83.4%. --Nori--

**04/09/2010**  
**09:56:58**      *polarization*      03/09/2010, Yuri: At 14:00 the target polarizations reach of Pup=-83.73%, Pmiddle = +82.73%, Pdown = -82.64%.

**02/09/2010**  
**10:33:26**      *polarization*      01/09/2010, Yuri: at 14:00 I start microwave polarization in -+- cell mode with switched off SM-1 magnet. SM1-influence disturbs both the 1<sub>st</sub> and the 2<sub>nd</sub> moments of NH<sub>3</sub>-proton signals.

**02/09/2010**  
**10:05:22**      *magnet*      Yesterday a filter has been added on the incoming 48V circuit of the Magnet Safety System to protect it against variations of voltage that have already blown up a fuse in the past and then making impossible to switch ON the magnet's PSU - Fabrice

**02/09/2010**  
**09:57:06**      *microwave*      30/08/-01/09/2010. Yuri and Kaori: Alignment of transmission, installation of the magnetic shield on the motor and the successful test of the microwave splitter remote control in the 2.5 T magnetic field was done.

**30/08/2010**  
**09:14:06**      *polarization*      30/08/2010, Yuri\_Kiselev: At 05:00 SM-1 was switched off and this considerably changed the target local field, as a result the NMR signal get a displacement. Beam is off and at 09:00 I measured the residual proton polarization: Pup=-77.03%, Pmiddle=+77.19% and Pdown=-75.70%.

**25/08/2010**  
**08:23:28**      *polarization*      Stop polarizing, and go to transverse mode. -78.7 %, +78.8 %, -78.2 % obtained. ----K. Kondo

**23/08/2010**  
**20:36:44**      *polarization*      Checking polarization : 81.08 %, -78.98 %, 78.94 % (23 Aug. 17:46). Start polarizing (-+-) at 20:25. ---- K. Kondo

**17/08/2010**  
**20:50:05**      *polarization*      Today at 12:30 we went from transverse to longitudinal field to improve the degree of polarization. Initial polarization: +79.3%, -77.9%, +77.0%. After ~8 hours of DNP, we get +82.3% -81.3% +81.3%. Finally we gained more than what we lost since the last polarization on August 12 (-1.3%, -2.4%, -2.0%). - Fabrice

**13/08/2010**  
**00:18:54**      *polarization*      We started polarizing from 13h 11.08.2010 and stopped microwave 23h30 12.08.2010. The polarization of +80.6%, -80.0% and +79.0% was obtained. ---Nori

**11/08/2010**  
**09:42:56**      *polarization*      From 8:30 am to 9:20 am measuring the baseline and polarization at 2.5T; The polarizations are are-77.5%(upstream),+77.1%(middle), -75.3%(downstream).Switch off magnet to zero at 9:20 am for new alignment run procedure.---Wang Li

**06/08/2010**  
**10:11:54**      *polarization*      06/08/2010. Yuri Kiselev 05/08/2010, 18:54 we measured target polarization after 108 hours staying at 0.5 T field (starting from 0.1/08/2010). Before: Pup=-80.47%, Pmiddle=+80.25%, =+80.25%, Pdown=-80.08%. After 108 hours: Pup=-79.03%,Pmiddle=+78.65%,+78.65%,Pdown=77.74%.

**05/08/2010**           02-03/08/2010. Yuri Kiselev: The <newDRmonitoring.vi> programme stucks after AVS1 reading of TTH4. The reading should be periodically done to complite the Check-in list. Without this programme the Shifters haven't also the Alarms in the case of DR-

**12:24:18** *software* problems. Sometimes We couldn't even start LabView without restarting of the DR-computer. Finally this programm was founded non-activated one and we are now working with its old version <newDRmonitoringOld.vi>.

**05/08/2010 11:42:13** *polarization* 01/08/2010. Yuri Kiselev: 06:30. Reached polarizations are -80.35%, +80.25%, +80.25%, -80.00%. The optimal MW-parameters for larger polarization was founded and written in the Login-in at the end of the Table. 06:50. Go to frozen mode and at 07:20 Start the "Transverse" mode operation.

**05/08/2010 11:32:14** *NMR* 31/07/2010, 12:30. Yuri Kiselev After rebooring of NMR the history table didn't restarted its normal operation. I am following with the former table for MW-parameters.

**05/08/2010 11:18:20** *NMR* 31/07/2010 Yuri Kiselev: 07:30. Polarizations -65%, +67%, +67%, -69%. NMR-system stoped its operation and during 4 hours the operator didn't inform me about this problem. 12:30. I reboot NMR-measurements. Fortunately MW operated well during all MW-irradiations and the polarization was -70.37%, +70.77%, +70.77%, -72.41%. We was going ahead of 3 hours ahead of the former polarizations.

**05/08/2010 11:00:52** *polarization* do not forget date, time and your name 30/07/2010, Yuri\_Kiselev 18:45. Start relaxation of +---+ polarization at Zero Field. In 40 minutes the polarization was complitely zeroed. 20:06 Start -+++ MW-polarization

**28/07/2010 17:58:39** *polarization* We measured the polarizaton of +83.4% -82.2% +81.1% at 12h40 29.07.2010 because of no beam and restarted polarizing in the same configuration and stopped it at 17h30 29.07.2010. The polarizaton reached +84.3% -83.1% +82.3%. ---Nori

**25/07/2010 11:54:03** *polarization* Microwave stopped at 22h50 24.07.2010 and target was in transverse mode at 00h02 25.07.2010. +84.2%, -83.8% and +82.3% were obtained. --Nori

**23/07/2010 13:19:27** *polarization* Polarizing since yesterday 13:00. Now at +77.7 %, -77.2 % and +77.9 %. --Jaakko

**18/07/2010 21:39:15** *polarization* 20:30 back in solenoid field 2.5 T (+646 A) with polarizations -68.6 %, +73.0 % and -71.5 %. --Jaakko

**17/07/2010 08:33:58** *polarization* Polarizations -69.2 %, +73.7 % and -72.4 % at 8:00. Stop the microwaves and go to 0.63 T dipole field. --Jaakko

**16/07/2010 12:30:12** *polarization* 16 Jul. 10:30 Start polarizing (-,+,-). The relay switch for the 4th pump's interlock was exchanged. ----K. Kondo

**16/07/2010 09:28:32** *general ...* 16 Jul. 8:50 Again, the same 3He pump (the 4th one) had the same interlock problem, and stopped. We lost polarization. ----K. Kondo

**15/07/2010 05:59:20** *general ...* 15 Jul. 3:10 Stop polarizing @ -79.4 %, 80.1 %, -78.0 %. 3:51 Go to 1.0 T longitudinal for alignment run. 5:58 Transverse field. ---- K. Kondo

**13/07/2010 11:25:19** *polarization* 13 Jul. 11:00 Start polarizing with reversed spin config. (-,+,-).----K. Kondo

**13/07/2010 11:01:48** *general ...* 13 Jul. 9:43 Four of 3He pumps stopped due to the temperature interlock. But real temperature on the pump mortor had no problem. Mixing chamber of the fridge went up to about 1 K, and we have lost polarization (+/-77 % to zero).----K. Kondo

**08/07/2010** 5.7.2010 18h00 We started polarizing reversally and stopped at 19h00 6.7.2010. +76.9%, -76.2%, +78.4% were obtained. We enhanced

<b>15:45:09</b>	<i>polarization</i>	polarization from 9h00 to 15h30 8.7.2010 and the polarization reached +79.8%, -78.2%, +80.6%. ---by Nori Since yesterday early in the morning the beam intensity is reduced by a factor 3 or 4 due a problem on the linac. The control room stated that nothing will be fixed before monday. It was then decided to reverse the
<b>27/06/2010 17:10:31</b>	<i>polarization</i>	polarisation a bit earlier than foreseen and to take profit from a non very useful beam for polarizing longer, at least until the normal beam intensity is back. So yesterday we start to reverse the polarization around 20:35 with the configuration (-+-). - Fabrice
<b>17/06/2010 08:45:02</b>	<i>polarization</i>	Stop microwaves at 08:00 with polarizations +82.3 %, -80.9 % and +82.3 %. Now in transverse dipole field 0.6 T. --Jaakko
<b>15/06/2010 22:12:10</b>	<i>polarization</i>	Back to solenoid field (+646 A) at 20:07. Polarizations -82.1 %, +79.4 % and -80.7 %. Now reversing the polarization with microwaves. --Jaakko
<b>12/06/2010 09:52:45</b>	<i>polarization</i>	Buildup polarization from yesterday 18:50 to 09:00 today in the morning. Polarization increased to (was) -82.9 % (-77.3 %), +81.0 % (+76.4 %) and -82.2 % (-77.5 %). Now in transverse mode with dipole field. --Jaakko
<b>11/06/2010 16:37:48</b>	<i>polarization</i>	10th of June, 10:30 Polarization started with the (-+-) configuration. 11th of June, we obtain -78.2%, +76.6%, -78.4% at 8:30. Went to the frozen spin mode, then went to the transverse mode (0.6T) and back to longitudinal (+) field to check the polarization : -77.5%, + 76.6%, - 77.9%). Temperature of the NMR cooling system slightly changed between those 2 measurements (20.5 -> 22.0) that could explain this small difference between the polarization values. Went again to the transverse mode at 10:30 on request of the run coordinator to start data taking - Fabrice
<b>11/06/2010 16:21:04</b>	<i>magnet</i>	The problem of the Magnet Safety System which happens after the power cut and found out on 3rd was fixed on 9th by expert from Saclay. All the magnet procedures (ramping up, rotation, transverse mode)where tested for validation. - Fabrice Today at 8:50 a micro powercut occured on the electric network which generated a slow discharge from the solenoid PSU. At that time we were polarizing and arrived at 85.5% (Upstream), 82.5% (Central) and 84.4% (Downstream). The polarization build-up curves did not show yet a saturation effect. Unfortunately, we could not save the polarization by using the dipole field since the LHe level in the cryostat of the magnet was close to the cryoOK limit. At 230A we tried to maintain the the current stable, but the solenoid PSU did not accept the command. A fast discharge occured ~1 minute after sending this command to the PSU. ~9% of LHe lost in total but easily recovered. - Fabrice
<b>27/05/2010 20:55:08</b>	<i>power</i>	
<b>19/05/2010 07:33:19</b>	<i>polarization</i>	Start polarizing yesterday noon. Now -78 % upstream and -81 % downstream. Central cell probably later. --Jaakko
<b>07/05/2010 15:13:00</b>	<i>magnet</i>	PT platform power cut @ 14:15 (no field at that time). Cryogenics for magnet stopped for 30 min. Emergency valve opened and helium level decreased from 90% to ~70%. Cryogenics process restarted and filling resumed, level increases slowly. Dilution refrigerator not concerned. - Fabrice
<b>28/04/2010 09:23:02</b>	<i>power</i>	Short general power cut at 6:10 on the full CERN domain. All the target slow control stuck but no major problem happened. Only the dipole ramped up to 325A unexpectedly. - Fabrice

<b>26/04/2010 12:43:14</b>	<i>general ...</i>	Thermal equilibrium calibration at 1.4 K and 1.2 K over the weekend. Ramp down the magnet now. --Jaakko
<b>19/04/2010 14:04:03</b>	<i>general ...</i>	1.0 K thermal equilibrium calibration started on Friday evening. Ramp down the magnet today 13:30. Now pumping out helium from the mixing chamber. --Jaakko
<b>13/04/2010 20:17:32</b>	<i>refrigerator</i>	Mixing chamber now filled with liquid helium-4. Temperature about 1.5 K. --Jaakko
<b>12/04/2010 18:11:21</b>	<i>general ...</i>	Load ammonia at 16:30. No leak to target holder vacuum and indium joint ok. NMR coils and thermometers working. Now cooling down the mixing chamber. --Jaakko
<b>01/04/2010 23:42:05</b>	<i>refrigerator</i>	Fill mixing chamber with helium-4. Remove extra helium from helium-4 evaporator. --Jaakko
<b>30/03/2010 18:03:29</b>	<i>general ...</i>	Load empty target cells today ~ 15:00. No leak detected to the target holder vacuum. Access tube indium joint to mixing chamber ok. All thermometers and NMR coils working. Pump out air/helium mixture and start circulating helium-4. --Jaakko
<b>16/02/2010 23:11:06</b>	<i>general ...</i>	Reactivation of the electronic PT logbook for 2010 - Fabrice