NEWS

Season 2003

Date & Time	Type	Description of event
9/26/2003 3:10:38 PM	*general ...*	Target material is unloaded today without any problems. by Nori
9/20/2003 9:31:44 PM	*refrigerator*	19 September removed 3He/4He mixture. Then condensed pure 4He. TE-calibration started on morning of 20 September. --Jaakko
9/17/2003 9:33:51 AM	*general ...*	End of physics data taking 2003. Now starting to calibrate microwave power for polarization. --Jaakko
9/8/2003 3:07:34 PM	*polarization*	The microwaves reversal started this morning at 11:00. A long machine development takes place from this morning 10:00 to tomorrow 10:00 - Fabrice
9/3/2003 9:13:44 AM	*polarization*	Back in longitudinal mode with +48.35% upstream and -41.73% downstream polarizations. Now starting to repolarize. --Jaakko
8/29/2003 11:59:13 PM	*polarization*	Transverse mode with Idipole = 550 A started from 23:00. +51.88% upstream and -43.96% downstream before stopping NMR. --Jaakko
8/29/2003 11:22:50 AM	*polarization*	Since the beam is unavailble before 5:00 PM, we are trying to enhance the polarizations values. Start at 10:15 AM. _Jacques
8/28/2003 1:48:19 AM	*magnet*	We have gone to Transverse mode with the dipole at 0.42 T (550 A) at 1:25 AM. Polarizations are : P up = 50 %, P dwn = -42%, t= 73 mK up and 82 mK dwn. _Jacques
8/27/2003 1:08:20 AM	*polarization*	After 8 hours since the beginning of the polarization building-up , we have reached so far 30% upstream and -29.9% downstream. _Jacques
8/26/2003 4:52:00 PM	*polarization*	Due to the unavailability of the SPS beam, the MD has been started earlier today. At 15:40, the field was put back to longitudinal mode at 2.5 T. Residual polar. : P+ = 47 % and P- = -47%. Relax. times being for P+, tau+ = 1425 h and for P-, tau- = 2220 h. The polar has started to get reversed by microwaves at 16:25. _Jacques
8/25/2003 11:32:24 PM	*general ...*	A new tool has been implemented on the PCCODT30 computer by Fabrice. It enables to work out the nuclear relsxation time once the initial and final polarization values have been injected as well as the elapsed time between these two measurements. It also allows to estimate the polarization value when the relaxation time is known. _Jacques
8/25/2003 5:26:20 PM	*magnet*	Since the beginning of the Transverse mode, the dipole has been set to 550 A. The recording of the read-out shows unstabilities. The PS itself is stable, the shunt reading on the platform too. We checked the input of the ADC board, in the control room rack, which transfers the information to the computer. This input is also stable displaying always the same value over several days, this check was done especially during wiggling of the read-out on the terminal. The unstability is only produced in the ADC board, which is reflected in the dipole history graph, the magnet current is stable._Jacques
8/20/2003 3:17:53 PM	*general ...*	20.Aug.2003, transverse mode started with Pup=-50.20,Pdn=52.07 (T.Iwata)

8/20/2003 12:04:06 AM	*NMR*	19.Aug.2003, ~15:31 Coil_5 showed strange behavior; The polarization value was jumping down and up by 2% for ~3 hours. (T.Iwata)
8/19/2003 11:57:32 PM	*magnet*	19.Aug.2003, Problem in the field rotations at 13;45, 23;35; The process stacked for ~5 min. after ramping down of diplole.
8/19/2003 11:49:14 PM	*general ...*	19.Aug.2003 Pup=-49.2,Pdwn+51.2 (T.Iwata)
8/18/2003 2:43:05 PM	*NMR*	Since 18th of August, the NMR status page is back to the production (self re-activated !!). Fabrice
8/17/2003 10:02:29 AM	*general ...*	17.Aug.2003, 10:00, Pol=-28.31%, 23.36%
8/17/2003 9:56:16 AM	*microwave*	17.Aug.2003, ~1:30 microwave start (T.Iwata)
8/17/2003 12:24:14 AM	*magnet*	T.Iwata; At 23:0 on 16.Aug.2003, PT magnet tripped due to cooling water interlock. We lost polarization. The problem is originated from the fail of the circulating water pump.
8/16/2003 4:47:53 PM	*NMR*	16.Aug.2003 T.Iwata The signal file from 104325 to 105829 were the data during rotation. They are useless.
8/15/2003 11:25:48 PM	*magnet*	18:40; Magnet control stopped during field rotation with -80A solenoid and 0A dipole. After about 10 min., it was recoverd without any actions. And the first run just after this field rotaion, Run.30509, had the wrong sign of solenoid current. Target computer seems not to give a file to Run Logbook at the run. by Nori
8/10/2003 11:23:59 PM	*NMR*	The Polarization is -50.5% & and +52.9%. By Gerhard
8/1/2003 12:05:50 PM	*NMR*	The Polarization is -50.6& and +52.7%. By Nori
7/31/2003 1:46:46 PM	*NMR*	The present polarization is -49% and +51%. By Nori
7/29/2003 5:31:20 PM	*NMR*	The polarization is -44% and +42% at 17:00. by Nori
7/28/2003 10:09:26 PM	*NMR*	"NMR status" in the previous description of event means that NMR status information which can be selected on left side of this page does not update. by Nori
7/28/2003 9:56:10 PM	*NMR*	NMR status does not work at the moment. The polarization is -24% in the upstream and +15% in the downstream at 22:00. The direction of polarization is exchanged between up and down stream. by Nori
7/28/2003 9:37:51 PM	*general ...*	We restarted to polarize from 18:00 after problems were solved. by Nori
7/27/2003 11:50:39 PM	*magnet*	Cooling water was back at 15:00. But The security circuit of the magnet was broken. We can not reset it. Water leak from solenoid PSU and trim coil fuse problem were found at the same time. by Nori
7/27/2003 11:24:55 AM	*power*	General normal network power failure this morning at 8:38. The UPS, diesel and 48V networks were ok. Now waiting to recover cooling water to start isolation vacuum diffusion pump system. -- Jaakko
7/25/2003 5:47:51 PM	*general ...*	We have no beam until 1st August. Target will be kept in frozen mode during week end and started repolarizing from next Monday. by Nori

7/25/2003 5:33:35 PM	*power*	The roots for 3He circulation and diffusion pump for isolation vaccum were down deu to the power failure of diesel line at 13:40. Mixing chamber warmed up to about 1K for 1 hour. The magnet was fine without any problem. We lost 10% polarization absolutely due to this problem. The present polarization is +46.5% and -37.0%.
7/22/2003 6:08:23 PM	*power*	Power cut happened in the control room at 17:00. Only monitor and control lines were down. The polarization was not lost at all with this accident. At the moment, the polarization is +44% and -36%. by Nori
7/22/2003 12:35:24 AM	*general ...*	21th.July; Cooling water for diffusion pump was back around 22:00. Trim coils current read out problem was fixed as a temporary solution around 23:00. We have just restarted polarizing. by Nori
7/21/2003 3:50:05 PM	*power*	Total power failure today around 15:30. The polarisation was lost. Now waiting to recover normal and demineralised cooling water on the platform. --Jaakko
7/18/2003 10:39:28 AM	*refrigerator*	Problem with pump motor pt100s. The values are not real. --Jaakko
7/16/2003 4:36:21 PM	*general ...*	Transverse run postponed to tomorrow due to SPS vacuum problem. Roots #20 motor cooling fan was broken today and was replaced with a spear. --Jaakko
7/15/2003 12:47:10 PM	*microwave*	Started to repolarise this morning from 8:00. --Jaakko
7/13/2003 4:19:26 PM	*NMR*	NMR stopped last midnight and magnet ramped to -100 A due to SPS vacuum problem. --Jaakko
7/11/2003 10:48:55 AM	*NMR*	Started to repolarise at 10:15 to compensate losses in frozen spin mode. -- Jaakko
6/24/2003 1:23:19 PM	*general ...*	Since 10pm on 23/06/03, we have stopped the microwaves and put the dilution fridge in frozen spin mode to spare the microwave generators and power supplies. The present polarizations are : +58.5% upstream (coil 3 at 51% removed from the average estimation), and -47.6 downstream. _ Jacques
6/20/2003 5:44:57 PM	*magnet*	The dipole current lead heater was still not working during all the night. This morning, the technician has connected this heater on the same contactor than the solenoid current lead heater, both are now regulated together. This is a temporary solution. A new piece to replace the misworking one is ordered but the delivery time seems to be about 2 weeks in the best case. Fabrice
6/19/2003 2:00:16 AM	*magnet*	Again problem with dipole current lead heater. Went to frozen spin mode with 80 A solenoid current. The problem disappeared during checking of TC80 heating system. No polarisation lost in frozen spin mode. Now restarting polarisation. -- Jaakko
6/18/2003 5:03:47 PM	*magnet*	The polarisation was lost today afternoon due to rapid discharge in the magnet. It started when the dipole current lead heater was being repaired. Now refilling magnet dewar with LHe. --Jaakko
6/16/2003 4:47:51 PM	*general ...*	16.June,16:45 First field rotation done; influence on polarization less than 0.5%: Cooling problem of the pump room hopefully solved by fireman water pipes, which have to be handled at critical outside temperatures higher than 30 degrees Celsius. W.Meyer
6/12/2003 10:44:20 PM	*general ...*	We had again pumping room climatiser problem. We stopped 3He & 4He roots pumps. Polarization was lost (14:00). The climatiser cannot work under too hot weather!(climatiser experts said) They

		made a small roof over air intake to prevent exhausted air coming into air take again. Restarting DNP was around 18:30. TWC Kaori
6/10/2003 10:10:53 PM	*general ...*	The climatiser in the pumping room stopped, and temperature in the pumpingroom went to 33 degree. As 3He Roots pumps motor reached higher than 60 degree, we switched off them, still heater, and microwave. We lost polarization. DNP will be restarted after fixing the climatiser. TWC Kaori
6/9/2003 3:34:50 PM	*general ...*	Start DNP (10:30). Alarm that Pumping room temperature reach 22 degree. TWC Kaori
6/8/2003 6:56:28 PM	*refrigerator*	Filling 3He/4He was almost finished. Still heater was switched on. TWC Kaori
6/8/2003 9:38:21 AM	*refrigerator*	Start filling 3He/4He mixture in mixing chamber (07 June, 19:00). TWC Kaori
6/6/2003 11:30:15 PM	*general ...*	--TE calibration was finished in the morning. --Magnet position was surveyed in 3 points at zero-field, I_solenoid=417A, I_dipole=550A, and I_solenoid=-417A under SM1 is on. --Start pumping out helium from MXC, stop 4He pumps. TWC Kaori
6/4/2003 11:57:27 PM	*temperature*	The baratron pressure gauge electronics in 3He vapour pressure thermometer was broken on 3rd of June. Using TTH1, TTH2, TTH4 and TTH6 to determine temperature during TE-calibration. --Jaakko
6/4/2003 2:32:40 PM	*pressure*	3 June - 16:00 Water pressure suddenly dropped in the cooling system of PT-magnet power supply. Slow discharge of magnetic field. Electric system of large water pumps is under repairing. 18:30 Ramp up the PT-magnetic field. We are waiting for the steady-state equilibrium to start TE-calibration again. TWC Yuri
6/4/2003 2:31:06 PM	*refrigerator*	2 June - 3He pumped out in storage tanks and we are going to evaporator mode with 4He for TE-calibration. We have enough time to improve the calibration constants. Start TE-calibration. Oxygen detector in 4He line is broken. There is no any control of oxygen pollution in 4He collector line. This detector must be sent to a firm for repairing. We can do nothing in such a case. TWC Yuri
6/4/2003 2:29:18 PM	*microwave*	1st June - Frozen mode. On the way to positive polarization we have estimated the shift of NMR-top due to MW ON and OFF at 70241.5 □8 MHz center EPR frequency. It equals about 200 Hz (2 channels), the calculation gives about 500 when there is a complete saturation of EPR-line. To write down the EPR relaxation time it needs a special program: no time for these investigations. Positive polarization, frozen mode. Kaori and Nori made a further improvement of fine correction. The final result is 300 Hz (about 0.5 Gauss). The effect from final correction should be seen later on. Stop correction. TWC Yuri
6/4/2003 2:27:11 PM	*microwave*	31 May - Start MW positive polarization in upstream cell to gain the NMR-signals. At the same time we measured a small MW-leakage between UP and Down cells. Start the fine turning of upstream trim coils. The first fine tuning of the trim coils has improved the field uniformity from 800 to 600 Hz (about from 1.3 to 1.0 Gauss). Start MW reverse of polarization to see an influence of done correction for longitudinal distribution of polarization. Good result: coil-1 has now the same behavior as coil –2 and coil-4, but coil-3 has still slightly different behavior then others. We need about 400 Hz for final tuning. TWC Yuri
		30 May - Polarization of upstream cell at 70241.5 MHz as central

6/4/2003 2:23:13 PM	*microwave*	EPR frequency. FM is ON, MW is OFF in downstream cell. We have observed a slow built up of opposite polarizations in 1-4 coils. The magnetic field homogeneity 800 Hz (about 1.3 Gauss). Conclusion: The PT-magnet uniformity in UP-cell is maybe not enough to provide a strongly uniform longitudinal polarization in upstream coils. TWC Yuri
6/3/2003 4:25:57 AM	*refrigerator*	Dilution cryostat filled with pure 4He for TE-calibration. 3He vapour pressure thermometer is ready and shows 1.00 K temperature in the mixing chamber. --Jaakko
6/2/2003 3:45:30 PM	*refrigerator*	The 3He/4He mixture was removed from the dilution cryostat during the night. The magnet was ramped down to zero field. Now purging the LN2 trap. --Jaakko
5/30/2003 2:08:17 PM	*microwave*	The microwaves leackage was measured yesterday by polarizing the upstream cell and measuring polarizations in both. With negative polar., we reached -22% in 2 hours and -1.2% in the downstream cell with a linear progression (Pdown=~5% of Pups). All the coil signals went together. A second leackage test was done in the same config. but with positive polar. In this case we reached ~28% in upstream in 4 hours (freq=70180MHz instead of 70220MHz normally), which is faster than usual. The progression in the downstream cell was between linear and logarithmic with a final polar ~2.5% (Pdown=~8.8% of Pups).All the coils had an equivalent progression in 2 separate groups. Due to a probable miscalibration and heterogeneous beam during this period (electrons and hadrons at an unknow intensity - baseline a bit affected) we decided today to redo these measurements tomorrow in the 4 configurations. TWC Fabrice
5/28/2003 7:41:18 PM	*refrigerator*	During the machine development (8h-16h) a new measurement of D, 6Li, 7Li and P polarizations was organized. It was requested to switch off the magnet for the surveying of the spectrometer alignement by the end of the morning, so a tentative of super-radiance measurement was achieved from both cells negatively polarized. No clear signal of super-radiance was observed. Additional measurements of the cooling power were done in the afternoon at a higher power in the mixing chamber than the previous measurements (~2W) for different still heater voltages. The evolution of the ratio 3He/4He was also determined during these measurements. TWC Fabrice
5/27/2003 10:39:52 AM	*microwave*	A new polarization build-up started since monday morning without frequency modulation, both cells with a negative polarization and an equivalent power. This will allow us to compare their behaviour and to see the plateau of polarization in this build-up mode. It will determine when the frequency modulation can improve the situation. In this configuration, one should not be affected by the depolarization effect due to a microwave leakage at the microwave stopper. TWC Fabrice
5/25/2003 12:04:07 PM	*refrigerator*	This week-end was devoted to the measurement of the lowest reachable temperature in a single shot mode and to the measurement of the dilution cryostat cooling power. Saturday at 14:00 we reached 27 mK (+/-3mK) as the lowest temperature. The cooling power measurements finished Sunday at 8:00 (for still heater sets at 6.3V, 8.0V and 10.0V and 7 different powers between 1mW and 1W for each on the target holder heater). We negociated a special extra-time without beam for these measurements. TWC Fabrice

5/22/2003 10:49:18 PM	*general ...*	22.May.2003 22:44; We measured super radiacnce effect with TTH1 and TTH2 in this morining. And we are mesuring relaxzation time of D, 6Li, 7Li and proton with zero field now. WTC Nori
5/21/2003 6:40:29 PM	*NMR*	21th.May, 18:30 ; Kaori installed new calibraion data to online monitor. And the polarization value changed to +53% and -50%. We are keeping the system frozen mode from last night and excised field rotation in this morining. We found that polarizations of each coils shifted after field rotation as last year. But the average polarization is same as before field rotation. by WTC Nori
5/19/2003 7:16:30 PM	*general ...*	19.May.2003 19:09; The polarization 57.0% in downstream and -53.2% in upstream. The difference of polarization is 110. LN2 line for the trap is connected to the big tank ouside of area. by WTC Nori
5/18/2003 5:35:10 PM	*NMR*	-51 % upstream and +55 % downstream polarisation reached today. -- Jaakko
5/16/2003 12:19:50 PM	*NMR*	About -43 % polarisation for upstream and +47 % for downstream has been achieved. First beam in the area for beam tuning. -- Jaakko
5/16/2003 11:40:36 AM	*NMR*	15/05/03 18h00 Coil #3 went suddenly sick showing low signal and high noise level. Was fixed by tightening the semi rigid cable on the NMR box but coil #4 got affected through the process, a new calibration is needed for it. Had been activity on the platform with detectors around 18:00 .. _Jacques
5/14/2003 1:02:40 PM	*general ...*	Helium liquefier compressor was broken this morning. It was changed to a new one without interruption to the target LHe supply from the buffer dewar. During the start up of the new compressor LHe buffer dewar pressure went up to +660 mbar. The pressure is now decreasing slowly to the nominal +360 mbar. -- Jaakko
5/14/2003 12:08:21 PM	*general ...*	Target cells have been polarised in 5% steps to -30 % upstream and +30% downstream. --Jaakko
5/13/2003 2:11:59 PM	*refrigerator*	All the mixture was condensed to the dilution cryostat. The mixing chamber is now at 60 mK. --Jaakko
5/12/2003 9:09:52 PM	*general ...*	TE-calibration of deuterium, 6Li and 7Li was finished on Sunday 11th of May. The magnet was ramped down to zero field and pumping out 4He from mixing chamber was started. --Jaakko
5/8/2003 4:56:45 PM	*software*	The dilution refrigerator monitoring computer died during the last night (mother board affected). A new computer is now running instead of the previous one. The situation is fixed since 3:00PM - Fabrice
5/2/2003 5:54:33 PM	*magnet*	May.2.2003, 17:48; The security circuit for the Magnet has been checked by Nicolas successfully. And then Full current test has been also done without any problems. by Nori
4/27/2003 3:51:05 PM	*magnet*	April.27.2003 15:40 ; The Liq.He level of the Magnet had reached full level in this morning. It is set auto level control mode. by Nori
4/25/2003 1:28:58 PM	*general ...*	Magnet coil reached 100 K this morning. Switched to LHe cooling mode by the noon. -- Jaakko
4/25/2003 8:35:26 AM	*general ...*	Target material 6LiD was loaded successfully on 24th of April. No leaks from mixing chamber to target holder isolation vacuum were observed at temperature of about 100 K. During the loading the magnet coil temperature was 114 K. Resistance measurement of the NMR coils shows that all the coils are connected. -- Jaakko
4/21/2003		Magnet precooling with LN2 started on 17th of April. On 21st of April at 23:00 coil temperature of 196 K has been reached. The

11:23:38 PM	*general ...*	dilution cryostat cool down was started today. Mixing chamber now at 225 K. -- Jaakko