ORGANISATION EUROPEENNE POUR LA RECHERCHE NUCLEAIRE
CERN EUROPEAN ORGANIZATION FOR NUCLEAR RESEARCH

CERN RESEARCH BOARD

MINUTES OF THE 174th MEETING OF THE RESEARCH BOARD
HELD ON THURSDAY, 1 DECEMBER 2005


(* for item 2)

Items
1. Procedure
2. Application of T2K for Recognized Experiment Status
3. Report from the NuPAC meeting and from the INTC meeting of 31 October 2005
4. Report from the LHCC meetings of 12-13 October and 16-17 November 2005
5. Report from the SPSC meetings of 27-28 September and 15-16 November 2005
6. Any other business
1. PROCEDURE

1.1 The minutes of the Research Board held on 1 September [1] were approved without amendment. There were no matters arising from the minutes.

2. APPLICATION OF T2K FOR RECOGNIZED EXPERIMENT STATUS

2.1 D. Wark presented the application of T2K for recognized experiment status at CERN [2]. The experiment involves the study of a neutrino beam from the JPARC facility in Japan to Super Kamiokande, 295 km away. Its aim is to observe $\nu_\mu - \nu_e$ oscillation, with an expected sensitivity to the relevant mixing angle down to 1% on $\sin^2 2\theta_{13}$. This will require detailed understanding of the beam properties, for which a near detector is foreseen, with a strong European participation. In particular, the magnet previously used by UA1 and NOMAD at CERN will be used for the near detector, with various detectors including TPCs and calorimeters inside it. The accelerator is due to be completed in 2008, and data-taking to start in 2009.

2.2 L. Camilleri then made his report as CERN rapporteur for the experiment. The experiment satisfies the requirements for recognition, and makes some standard requests from CERN. However there are also more specific requests concerning the use of the magnet, including advice on its refurbishment and shipping. The collaboration also requests the use of space at the end of the T9 beam line for TPC tests. The Research Board granted recognized experiment status at CERN to T2K, with reference number RE13. The specific requests concerning the magnet and test-beam space will be subject to a document to be drawn up by the PH department in agreement with the collaboration. The recognized experiment status will be reviewed after a period of three years.

3. REPORT FROM THE NuPAC MEETING AND FROM THE INTC MEETING OF 31 OCTOBER 2005

3.1 J. Äystö discussed the NuPAC workshop that had been held at CERN on 10-12 October to review the scientific case for nuclear physics and astrophysics at CERN, and in particular to investigate possibilities beyond 2005 for the ISOLDE and nTOF facilities. The meeting involved about 150 participants, and J. Äystö stated that it was a major success.
R. Aymar thanked J. Äystö for the report from the meeting [3], and asked him to pass on his thanks to the participants. J. Äystö then discussed the main recommendations.

3.2 For ISOLDE, the INTC strongly recommends that the unique capabilities of the facility should be exploited, by ensuring its continuous operation, reinforcing the technical R&D activities (in particular for the target and ion source), keeping the facility up to safety standards, and assuring the stable operation of the Resonant Ionization Laser Ion Source. The Research Board endorsed this recommendation.

3.3 Further recommendations concerned the upgrade plans for ISOLDE and REX-ISOLDE, for which decisions on approval cannot be made until a detailed study has been made of the resources required. These included a short-term intensity upgrade by increasing the repetition rate of the PS booster, upgrading REX-ISOLDE to an energy of 5.4 MeV/u, and the installation of a zero-degree recoil spectrometer for REX-ISOLDE. A first study of the resources required had been presented in a memorandum from the department leaders of the AB and PH departments [4]. A more complete report should be prepared by the AB department in consultation with the ISOLDE collaboration, and with input from the TS, PH and AT departments, in time for a decision to be taken at the Research Board meeting of 8 June 2006.

3.4 The INTC recommends fully exploiting the unique opportunities offered by the nTOF facility by resuming its operation, and keeping the facility up to safety standards. The Research Board endorsed the principle of this recommendation. Nevertheless, future running of the facility will depend on the strength of the community interested, and the scientific case of the experiments proposed. Those interested are encouraged to submit a proposal.

3.5 Further recommendations from the INTC concerning nTOF included the replacement of the target coolant, and the launch of a design study for a second target area at a shorter neutron flight path. Consideration of these recommendations is deferred until proposals for experiments have been received.

3.6 J. Äystö then reported on the subsequent INTC meeting. ISOLDE has delivered 385 shifts of beam time in 2005, providing an excellent service to its user community. The REX-ISOLDE facility has operated very reliably. Physics highlights have included the first use of post-accelerated isomeric Cu beams, and the first radioactive beam experiment with $^{11}$Be. Three proposals were recommended for approval, listed in the following paragraphs.

3.7 P200 Nuclear moments, spins and charge radii of copper isotopes from N=28 to N=50 by collinear fast-beam laser spectroscopy [5] was approved for 19 shifts. It will be known as IS439.
3.8 **P192** Elastic scattering and fusion studies in the reactions $^{10,11}\text{Be} + ^{64}\text{Zn}$ (report on a test for *P192*) [6]. The report was considered satisfactory by the INTC, and the experiment was **approved for 21 shifts**. It will be known as IS438.

3.9 **P170 Add.1** Coulomb excitation of neutron deficient Sn-isotopes using REX-ISOLDE [7] was **approved for 19 shifts**. It will continue to be known as IS418.

4. **REPORT FROM THE LHCC MEETINGS OF 12-13 OCTOBER AND 16-17 NOVEMBER 2005**

4.1 E. Tsesmelis reported on the recent LHCC meetings on behalf of S. Bertolucci, who could not attend [2]. He reviewed the status of the ALICE, CMS, LHCb and ATLAS experiments, including the Comprehensive Review of ATLAS [8]. He also discussed the LHCC review of the Computing TDRs of the four experiments, which is ongoing, and the LCG Comprehensive Review [9]. **The Research Board took note of the report.**

4.2 An Addendum to their Online System TDR was submitted by LHCb, proposing to read out the detector components at the Level-0 trigger rate of 1 MHz, and combining the Level-1 and High Level Triggers into a single software trigger. **Approval of the Addendum was recommended by the LHCC, and endorsed by the Research Board.**

4.3 The LHCC agreed to the continuation of R&D projects on solid state detectors, RD39 and RD50. **The Research Board took note.**

5. **REPORT ON THE SPSC MEETINGS OF 27-28 SEPTEMBER AND 15-16 NOVEMBER 2005**

5.1 J. Dainton reported on the recent SPSC meetings [2], including reviews of DIRAC, NA48-1, NA48-2, NA49 and AD4/ACE. Concerning the CNGS programme the SPSC had learned with regret of the truncation of the planned ICARUS detector to the T600 module alone, and encourages the collaboration to explore the physics prospects of T600 with the CNGS beam. The SPSC understands that the startup of CNGS data taking should not be limited by progress on the LNGS infrastructure. For OPERA, data taking is expected to start in summer 2006 with a significant fraction of the target mass. R. Aymar stated that preparations for CNGS operation should proceed at full speed, although the total fluence that can be delivered during 2006 may depend on the outcome of ongoing
discussions concerning the application of the INB regulations. The Research Board took note of the report.

5.2 The SPSC supported the request from the NA49 collaboration that their detector be left on the floor pending clarification of its possible further use. This was agreed by the Research Board, with the proviso that the procedure for the eventual dismantling of the apparatus should be established.

5.3 Concerning the proposal P326, for the detection of $K^+\pi^-\nu\nu$ decays, the SPSC recommended for approval the continuation of their R&D programme in 2006. This was endorsed by the Research Board, but subject to the outcome of the ongoing discussion of the resources required, between the Directorate and the PH department.

6. ANY OTHER BUSINESS

6.1 It is a great pleasure to thank Janet Grant for her tireless service as secretary to the Research Board, and to wish her well for her retirement.

6.2 The next meeting of the Research Board will be held on Wednesday 1 March 2006. Please note that is a change from the previously foreseen date of 2 March.

ENCLOSURES


REFERENCES


