DRAFT: Minutes of the C12 Committee on Cooperation in Nuclear Physics Meeting,
held in Goeteborg, Sweden, June 27, 2004, in room R31 of the Hotel Gota
Towers. The meeting was held just prior to INPC2004.

Present: Anthony W. Thomas – JLab (Chair)
Richard F. Casten – Yale (Chair NSAC)
Sam H. Aronson – BNL
Alan Shotter (for Jean-Michel Poutissou) – TRIUMF
Muhsin N. Harakeh – KVI (Chair NuPECC)
Daniel Guerreau – IN2P3
Shoji Nagamiya – J-PARC (Chair C12)
Wenlong Zhan – Landzhou
Walter F. Henning – (Vice-Chair C12)
Alexey A. Ogloblin – Kurchatov
Hideyuki Sakai – Tokyo (Chair Japanese Experimental Nuclear Physics
Committee)
Toro Motobayashi – RIKEN
Willem T.H. van Oers – Manitoba (Secretary)
Wen-qing Shen – Shanghai
Arthur B. Mcdonald – SNO

Regrets: Walter Kutschera – Wien
Dong Pil Min – Seoul
Claude Petitjean – PSI

1) The Chair of the Committee, Anthony W. Thomas, provided a historical
perspective on previous actions by C12, the IUPAP Commission on Nuclear
Physics, on the topic of cooperation in nuclear physics, and in
particular on previous committees established by C12 and on the OECD
Megascience Working Group. A 1997 report on the activities of ICNP and
the OECD Megascience Working Group on Nuclear Physics can be found on the
IUPAP Commission C12 website.

2) The Chair of the IUPAP Commission on Nuclear Physics (C12), Shoji Nagamiya,
outlined the reinvigurating actions taken since the 2003 Annual General
Meeting of C12 in Durham, NC, to establish the new Committee on
Cooperation in Nuclear Physics.

The objectives for this Committee are:

* To promote international cooperation in the broadest sense, including cooperation in the construction and exploitation of the very-large nuclear physics facilities – i.e. those which are intended for use by the worldwide nuclear physics community.

* To organize on a regular basis meetings, which are open to all wishing to attend, for the exchange of information on future plans for new nuclear physics facilities, be it very large multi-disciplinary facilities or facilities restricted to more regional use.

* To stimulate the organization of workshops and/or symposia to discuss the future of nuclear physics and the need for facilities for the various subfields: high-energy heavy-ion beam facilities, radioactive-ion beam facilities, multipurpose hadron beam facilities, high-energy electron beam facilities. There is also the need to discuss facilities which are clearly cross-disciplinary, like underground laboratories at the interface of particle and nuclear physics and nuclear-astrophysics.

* And in first instance to document the facilities under construction or in the planning stage in terms of their anticipated performance parameters, to assess these anticipated performance parameters with regard to the defined requirements of the field, to evaluate the different facilities in terms of their complementarity or to indicate the areas of the field not covered but identified in the most recent science planning documents, like the NSAC Long Range Plan, the NuPECC Long Range Plan, and similar documents; to recommend on the need for additional new facilities and for the expeditious use of the

existing
facilities.

An electronic version of the presentation by SN will be posted on the C12 web site.

Comments: - Alan Shotter pointed out that the OECD Megascience Working Group report was never followed up on.
- Muhsin Harakeh underlined the above comment.
- Walter F. Henning asked how to give an overall perspective of the recommendations of NSAC, NuPECC, and the Japanese nuclear and particle physics science policy. Note that the status of NuPECC is quite different from the status of NSAC with regard to the funding agencies.
- Arthur B. McDonald remarked that the IUPAP Working Group PANAGIC was quite effective in the establishment of large scale neutrino observatories and gravitational wave observatories.

3 Presentations on facilities under construction or being planned for use by the international community or by a more regional community and the nuclear and particle physics that will be addressed at these facilities.

In Japan – Hideyuki Sakai, Chair Japanese Nuclear Physics Committee
a) J-PARC
b) RIBF at RIKEN
c) RCNP upgrade

Discussion: With J-PARC, is there a program about the transmutation of nuclear waste? A: negative.
How are scientific priorities arrived at in Japan?
A: by consensus among the Japanese experimental nuclear physicists through their Executive (Japanese Nuclear Physics Committee). Its recommendations are heeded by the Japanese Government.
How are Japanese university groups funded?
A: through the large laboratories and to a lesser

extent
through funding agencies.

In Europe – Muhsin Harakeh, Chair NuPECC
Recommendations of the NuPECC Long Range Plan:
– get full exploitation of the existing facilities
– the ALICE detector at LHC
– RIB production through complementary in-flight and ISOL modes.
The highest recommendation for construction is GSI's FAIR;
costs in 2002 Euros: 675M with 25% to come from outside Germany;
construction will take 7 years from the start of funding;
LoI's have 1800 single entry scientists of whom are 70% from
German institutions.
After GSI the construction of EURISOL, a multi MegaWatt proton
accelerator still to be designed. But 15 years until
construction starts; so for the immediate future SPIRAL-II,
SPES, upgrade of ISOLDE, and MAFF with intense neutron beams,
but also the upgrade of MAMI with MAMI-C. The 25 GeV electron
accelerator, ELFE, is off the table. Projected costs of EURISOL
in 2002 Euros: 613M.

The NuPECC Long Range Plan Report can be found on the web.

In the US – Richard F. Casten, Chair NSAC
In the US one deals with the NSAC Long Range Plan, which is
now a few years old, and the latest exercise by the DoE in
setting priorities (Raymond Orbach).
These reports have been posted.
The highest priority for new construction is RIA with a 1B USD
price tag (includes personnel costs). CD0 allows operating
funds to be used for R&D, but site selection is still
pending; the earliest that construction could at present start
is in FY 2007 with a five year construction schedule.
The international cooperation aspects of RIB facilities

have
been stressed.
CD0 has also been given to the JLab upgrade; its upgrade
schedule at present could be the same time period; costs from
175 to 225 M$. There is also a recommendation for the upgrade
of RHIC (possible in 2008 - 2009).
On the horizon are an electron-ion collider, two Long Range
Plans hence (ELIC or ERHIC).
Currently a review takes place of the relativistic heavy ion
physics program, NSAC subcommittee chaired by Peter D. Barnes.
The underground laboratory (NSF) is in some trouble now that
the purchaser of the Home Stake goldmine, Barrick Goldmines of
Toronto, has decided to flood the mine not wanting to take the
financial responsibilty of eventual environmental required
cleanups.
Recently a NSAC subcommittee has looked at the future of
cold and ultra-cold neutron science.

In Canada - Alan Shotter (for Jean-Michel Poutissou)
The TRIUMF five-year plan has passed the National Research
Council but requires further discussion with other branches
of government before it can be tabled for action by cabinet.
The TRIUMF five-year plan deals with ISAC-I and ISAC-II,
T2K at J-PARC, R&D for the Linear Collider, and the general
infrastructure role for large experiments conducted elsewhere.

Discussion: Arthur B. Mcdonald pointed to the role TRIUMF is fullfilling
with regard to infrastructure needs of Canadian research
groups.

In China - Wenlong Zhan

Presented information about nuclear physics facilities in
China not generally known to the scientific community.
HIRFL – CSR in Lanzhou
CARR, BRIF in Beijing
SSRF, SINAP in Shanghai
Facilities have large numbers of university groups participating in the research conducted.

Electronic versions of the presentations by HS, MH, and RFC can be found on the ??? web site.

4 General Discussion:

Many rather diverse opinions were expressed, but the consensus arrived at was to proceed with the fourth point given above which stated the objectives of the Committee. First of all the Committee is to gather all relevant information on nuclear physics facilities worldwide, destined to operate in user group mode, presently working, under construction, or being planned for the near future. Walter F. Henning will provide a questionnaire that can be used by the representatives on the Committee of the various constituencies to collect the information (Europe – Russia; and US – Canada; and Japan – China – India; and South and Middle America including Mexico).

[It was later decided to appoint a representative from South America to the Committee (Alinka Lepine-Szily).]

The compilation is to describe the opportunities for the various subfields of nuclear physics, give the complementarity of research efforts, indicate what is missing in terms of facilities, all from a worldwide perspective.

[Note that Claude Petitjean informed the Committee of the existence of a NuPECC FINUPHY report dealing with the above within Western Europe, which is about to be published.]

The compilation should form part of a report by this IUPAP Committee which defines the current important questions in nuclear physics that need to be

addressed. There are various recent Long Range Plan documents that can be used as basis for the latter. But if neccessary the Committee could meet to update the research priorities for nuclear physics. The report should chart the course for the field of nuclear physics.

5 Future Meetings

It has been suggested to gather the information for the described compilation immediately and then meet later this year. Your secretary has listed the major nuclear physics meetings for the remainder of 2004.

Certainly the Committee must meet in its entirety at the time of PANIC2005, which will take place in Santa Fe, NM, on October 24–28, 2005. Because of the problems that several members of the Committee wil have in getting a US Visa, this meeting could take place at TRIUMF in Vancouver, BC, just prior to PANIC2005 since the IUPAP General Assembly meeting is scheduled for Cape Town, South Africa, October 25–29, 2005.

The Committee acknowledges the very kind hospitality given it by the Chair of the Local Organizing Committee of INPC2004 Bjorn Jonson.

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Willem van Oers

Jefferson Laboratory, July 8, 2004