

AUSTRALIAN ACADEMY OF SCIENCE

National Committees for Science: ANNUAL REPORT TO COUNCIL on 2008 activities

TASK FORCE FOR: Nuclear Matters & Australian Research Reactor

CHAIR: Professor John White FAA

PERIOD COVERED IN THIS REPORT: 1 January - 31 December, 2008

NOTE: This report will be published on the Academy of Science website at
www.science.org.au/natcoms

MEETINGS OF THE TASK FORCE

THE TASK FORCE MET ON:

The Committee has conducted its business during 2008 by email. Approximately 150 exchanges have occurred - the chief subjects of interest being:

- repair processes on the OPAL reactor undertaken during the shutdown
- successful restart of the reactor
- job losses at ANSTO and new CEO appointment
- effects of low level radiation, appraisals of new material and discussion
- LASP project attitudes to nuclear power

THE FOLLOWING MEETINGS ARE PROPOSED FOR 2009 (include date and place, if possible):

There may be need for a face to face meeting during the year as well as another meeting to hear a report on the LASP project.

MEETINGS OF INTERNATIONAL ORGANISATIONS AFFILIATED WITH ICSU

IN 2007 THERE WAS A GENERAL ASSEMBLY OF (include date and place):

IN 2008 THERE WILL BE A GENERAL ASSEMBLY OF (include date and place):

The next GENERAL ASSEMBLY/CONGRESS will be held in 200_

I RECOMMEND TO COUNCIL THE FOLLOWING VOTING AUSTRALIAN DELEGATION: (include title, name, address, telephone, email and fax number)

AUSTRALIAN OFFICE HOLDERS IN ICSU AND AFFILIATED BODIES

AUSTRALIANS WHO HELD OFFICE IN 2007 WERE:

(include all appointed/elected memberships of subsidiary bodies, standing committees, commissions etc. as well as appointments to Bureau/Executive positions in the governing body).

PERSON	INTERNATIONAL BODY	POSITION	TERM OF OFFICE
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THE FOLLOWING NOMINATIONS WILL BE MADE IN 2008:

PERSON	INTERNATIONAL BODY	POSITION	TERM OF OFFICE
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ACTIVITIES OF TASK FORCE – Please include comments on progress achieved on projected activities identified in your 2007 Business Plan. 2007 Business plans can be viewed at www.science.org.au/natcoms

Go to <http://www.science.org.au/reports/2007anrep.htm> p20, to view the Chairs' Reports on 2006 activities.

I SUBMIT THE FOLLOWING REPORT TO COUNCIL ON THE ACTIVITIES OF THE TASK FORCE IN calendar year 2008 (200-250 words):

[Your Report, as presented here, will be published in April 2008, in the National Committees for Science section of the Academy's Annual Report for 2007-2008].

1. Aims of this Task Force

- To Advise the council of Academy on matters related to the Australian replacement Research Reactor (OPAL) and related nuclear matters.

2. Strategies to allow these aims to be achieved

- The Committee request briefings from the Australian Nuclear Science and Technology Organization (ANSTO) and the Australian Government at significant times in the development of the reactor and related areas.

3. • Plan of work/activities (and proposed budget details) in 2009 which will achieve the aims: Activities for 2009 - the projects in train will be continued and one or two face to face meetings might be required to discuss progress..

Report on 2008 activities:

Successful restart of the reactor

The development of a new fuel for the OPAL reactor, replacing that supplied by INVAP (Argentina) was monitored and the OPAL reactor started again successfully reaching 20 MW on 23 May 2008. Whilst there is still a problem of light water/heavy water mixing through a very small leak in the reflector, there is continuing work by INVAP and ANSTO to ameliorate that situation and a long term response is being prepared. There is some effect of this on the irradiation programs at the reactor. Meanwhile the reactor is producing excellent neutron beams and many instruments are beginning to function although there is some delay on the data processing and informatics side due to scarcity of staff. The initial hope that at least some of the instruments would be at world's best performance at this period looks as if it will be realised. So far it has not been possible to test or characterize any of the neutron irradiation facilities in OPAL that might be suitable for fast neutron irradiation of geological samples in relation to $^{40}\text{Ar}/^{39}\text{Ar}$ dating.

Job losses at ANSTO and new CEO appointment.

Following the Australian Government's "efficiency dividend" process after the 2007 election a number of staff have left the ANSTO organization. A new CEO has been appointed - formerly head of the South African high temperature reactor project - and will take up his position on 1 March 2009.

Effects of low level radiation, appraisals of new material and discussion.

Three members of the Committee have been particularly active in relation to the low levels of radiation question. The SBS program "Nuclear Nightmares" has been distributed and viewed by members. The Committee will continue to look at other documents related to the "hormesis" phenomenon but is currently of the opinion that this effect has been overstated and that the recent thorough study by the US National Academies is the best evidence so far that linear extrapolation of radiation damage in biological systems to the lowest levels is the appropriate procedure.

LASP project Australian attitudes to nuclear power.

The initial meeting of the LASP project group of the joint Australian Academies was held in Melbourne on Thursday 17 July 2008 at 2.00 pm. The obvious importance of the social sciences and humanities in understanding Australian attitudes to nuclear power was clear from these discussions. The outcome - to find a Director who is skilled in the social science area relating to public attitudes to risk was accepted by all. There are cogent examples given by the way in which attitudes are formed and changed. More scientific facts were only one part of the story. With the limited resources of the project, a clear focus on the report structure was adopted with the project director (when appointed) working in close liaison with the Committee on the objectives and structure. It was pleasing to find Professor Daniela Stehlik appointed to the Project Director position.

Professor Stehlik is Chair, Stronger Communities & Director, Research Centre for Stronger Communities, Member, Sustainability Cabinet. Curtin University of Technology, Western Australia. She has the appropriate background and proposed a process which avoided the pitfalls of protracted discourse between representatives of entrenched positions at the outset. It is expected that the report will be available in mid to late 2009 and that the Academy's Committee will be able to have input on it.

Other matters

Professor White - as Chairman of the International Advisory Committee for the Japan Proton Accelerator Research Complex (J-PARC) Facility represented that committee at the formal opening of J-PARC on 16 December 2008