

IGORR 12th edition
28th October 2009 Beijing (Popular Republic of China)

The International Group On Research Reactors (IGORR) is a forum gathering various actors dealing with Research Reactors (Physic reactors- Zero Power Reactor, Irradiation Reactors- Material Testing Reactors, Neutron beam Reactor- Cold Neutrons Sources, Safety Dedicated Reactors...). Its main objective is to increase exchanges between research reactors community, to optimise and harmonize practice, efficiency and safety of such reactors.

This forum exists since 1990 and is one of the major for the Research Reactor community. The frequency between two IGORR conferences is between 18 months and two years.

The 12th edition of the IGORR conference has been held from 28th to 30th October 2009 in Beijing-China. It was hosted by the China Institute of Atomic Energy (CIAE) and it includes, on the 31st October a technical visit to two new research reactors which soon will be critical:

CEFR: China Experimental Fast Reactor

CARR: China Advanced Research Reactor.

About 100 specialists participate to the meeting: 70 non-Chinese people from about 15 countries (Europe, USA, Australia, Japan, South Korea, South Africa...) and 30 Chinese people from Research Organisation and universities.

The conference was divided in 5 sessions:

- New project and general strategy
- Enrichment Conversion
- Research Reactor Operation and Improvement
- New Project and general strategy
- Generalities.

Moreover 14 invited Papers were presented giving an up-to-date review of some majors Research Reactors worldwide (ATR, OPAL, HFIR, HALDEN, FRM2, BR2, HFR, LVR-15, HANARO, JMTR,

CARR, OSIRIS) , the status of the future MTR Jules Horowitz Reactor-JHR and a lecture on the IAEA Sub-programme on Research Reactors.

The previous conference was held in France in March 2007 so a lot of scientists from the RR community were waiting for this event.

This conference was very successful thanks to the perfect organisation from CIAE.

It allows the participants to get a global view of the markets and of reactors situation and to have good technical exchanges on various subjects (Commissioning, operation, maintenance, measurements, production...).

Some Highlights of the conference are as follows:

- The 2009 radio isotope crisis was discussed. An initiative has been proposed by FRMII, to produce in the future a large part of European needs by using one of its vertical irradiation holes. It means a lot of adaptation work (safety studies, new zircaloy tube, cooling system, crane modification...). First production should be available in four years.
- A continuous improvements whatever the age of the RR. Reactors as HFIR, NIST, Hanaro, FRM2 ...are examples of continuous improvements which shows impressive flexibility of research reactors configuration; it indicates also for the new reactors projects the necessity to design a good flexibility (capacity to change all the parts of the reactor).
- Fuel optimisation: Parameters of fuel optimisation are various and have been discussed in an intensive way: power, length of the cycle, irradiation performance, core loading, refuelling pattern, excess reactivity at the end of cycle...on such topic, the JMTR presentation showed that, with an optimisation of in-core fuel management, the number of operating days can go from 180 to about 210 days/year with similar quantity of fuel.
- Time life and Periodic Safety Assessment (PSA): it is an important topic (especially due to the ageing fleet of RR) whose consecutive refurbishment can be expensive (even very expensive...) according to Regulatory Bodies requirements and whose compliance with update safety rules (example: paleoseism, centennial flooding...) can lead to the shut-down of the plant.

- Safety documentation updating: it has been quoted the necessity to update frequently the safety documentation which allows to optimise the Operating Rules and to maintain the knowledge.
 - New projects: the JHR is under building and a presentation of the status of this building has been made. The Pallas project has also been presented.
- Refurbishment: several reactors are under refurbishment. The status of CABRI (France) has been explained. (Plan to be back in operation by the end of 2010) The JMTR status, in Japan, has also been explained for a restart in 2011.

Concerning the functioning of the IGORR conference, the steering committee (who met during the meeting) recommends to increase the participation of Universities and to increase the participation of developing countries hosting RR. The IGORR meetings will continue to rotate between Asia, Europe and USA.

In order to avoid an increase number of meetings and to cross-fertilize with others communities the IGORR steering committee recommends organising combined meetings with others such as RRFM...

In such a way, the next IGORR conference will be held with the TRTR meeting (US organisation gathering universities), in September 2010 in Knoxville –Tennessee (USA).

To conclude, IGORR remains a very dynamic forum to scientific exchanges on Research Reactors and keep gathering a large worldwide community.

2nd November 2009

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