

Press Release

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International Accident Dosimetry Intercomparison Exercise: 10- 21 June 2002

Over a period of two weeks, over one hundred researchers from 30 countries (Eastern and Western Europe, North and South America, Asia) will participate in an international accident dosimetry intercomparison exercise.

Organised and planned jointly by the IRSN and the OECD Nuclear Energy Agency (NEA), with the financial support of the European Commission and the collaboration of the CEA site at Valduc, this exercise will allow participating laboratories to test their physical and biological dosimetric techniques in experimental conditions simulating an irradiation accident.

The intercomparison will consist of a series of four irradiation scenarios spread over two weeks, from the 10th to the 21st of June 2002. The first three scenarios will take place at the CEA Valduc site using the SILENE experimental reactor (a liquid-fuel irradiation test reactor). These scenarios simulate three different aspects of criticality accidents, which characteristically involve simultaneous, high-levels of neutron and gamma ray emissions that could seriously expose anyone present in the facility. The fourth scenario will take place at the IRSN laboratories in Fontenay-aux-Roses, near Paris, and will involve exposure to high doses of gamma rays.

Since 1953, approximately 60 criticality accidents have occurred throughout the world, mostly in the United States (33 accidents) and the ex-Soviet Union (19 accidents) About one third of these accidents have occurred in nuclear fuel cycle installations, and two thirds in research facilities.

The objective of this exercise is for researchers to allow their dosimeters to be irradiated by one or more waves of exposure in the test facilities, based on which they must determine the dose received. To further simulate an accident situation, their preliminary results must be delivered within 48 hours, with refined values coming a few weeks later. The dose evaluations from such accident dosimetry are used to characterise the physical and radiobiological consequences of the accident to allow appropriate worker protection. For this, a thorough understanding of the types of radiation to which victims were exposed, and the precise estimation of their resulting doses, will allow the appropriate medical treatment to be quickly identified and administered.

The exercise will allow new techniques which have been developed since the last international intercomparison exercise (in 1993, also organised by the IRSN) to be tested, and to confirm and/or improve the performance of existing accident dosimetry techniques. Such an exercise provides participants with the unique opportunity to:

- use an irradiation facility that is unique in the world (notably the experimental SILENE reactor),
- compare a wide variety of physical and biological dosimetric methods in conditions very close to those of a real accident,
- test the efficiency and effectiveness of the dosimetry techniques being tested, and
- exchange information with other scientists and laboratories, and to discuss new ideas and approaches.

A summary of the results of the exercise will be prepared by the IRSN and will be presented during a joint NEA/IRSN workshop, planned for the beginning of 2003, at which time all participants will be invited to present their individual results, experiences and lessons.

About the IRSN

The IRSN was created by article 5 of the law on AFSSE, and regroups, as of 22 February 2002, the missions of expertise and research previously addressed by the Institute of Nuclear Protection and Safety (IPSN) and the Office for Protection against Ionizing Radiation (OPRI).

This **expertise** is focused on providing technical advice on questions related to nuclear and radiological risks, while the **research** aspect is intimately tied to this expertise in order to assure that the most complex technical subjects can be appropriately understood and addressed. The missions of the IRSN address the following areas: **nuclear safety**; the **safety of radioactive and fissile material transportation**; the **protection of man and the environment from the harmful effects of ionising radiation**; the protection and measurement of nuclear material and other products that could be used in the fabrication of weapons; and the protection of installations and transport convoys against attack.

The IRSN regroups more than 1500 experts and researchers with competence in the areas of nuclear safety and radiological protection, as well as in the area of measurement of sensitive and nuclear materials. The top French expert in the area of risks, and a European and world leader in nuclear risk research, the IRSN has an annual budget of approximately 250 million Euros, of which 210 million is provided by the French government, and 40 million from revenues generated through international research contracts. The IRSN can participate at the highest scientific levels to address the expertise needs of public and private organisations, in France and internationally. In France, the IRSN is the principal research and expert partner of national nuclear safety and radiological protection authorities, and other government offices needing services in these areas.

About the NEA

The mission of the NEA is to assist its 28 Member countries in maintaining and further developing, through international co-operation, the scientific, technological and legal bases required for the safe, environmentally friendly and economical use of nuclear energy for peaceful purposes. To achieve this mission, the NEA provides:

- a forum for sharing information and experience, and for promoting international co-operation;
- a centre of nuclear competence which helps Member countries to pool and maintain their technical expertise; and
- a venue for policy analyses and for the development of technical consensus.

In the area of radiological protection, the mission of the NEA is to assist its Member countries in the regulation and application of the system of radiological protection by identifying and addressing conceptual, policy, operational and societal issues in a timely and prospective fashion, clarifying their implications.