Health Canada Santé Canada

FEDERAL NUCLEAR EMERGENCY PLAN

LIAISON Newsletter

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Welcome to LIAISON!

By: **Jean Patrice Auclair**
Head, Nuclear Emergency Preparedness and Response Division
Radiation Protection Bureau

I am pleased to unveil the first issue of LIAISON, an electronic newsletter dedicated to promoting a broad and open exchange of information related to nuclear emergency preparedness and response in Canada, by objectively sharing news and information among stakeholders. Our vision is to foster a dedicated, visible and collaborative relationship among all stakeholders involved in radiological and nuclear emergency planning, preparedness and response for the benefit of all Canadians.

LIAISON is published by the Nuclear Emergency Preparedness and Response Division (NEPRD) of Health Canada, and it is a newsletter for partners and stakeholders of the Federal Nuclear Emergency Plan (FNEP).

LIAISON was launched because we recognized the need for better and more regular communication among FNEP stakeholders. LIAISON will be published three times a year, and we hope that it will become a forum for an open and ongoing dialogue, where news and information can be shared.

Call for Volunteers

To ensure LIAISON provides the information that you value, we need your help.

We are creating a volunteer Editorial Advisory Committee that will include federal, provincial and territorial representatives. The committee will be an oversight board – offering guidance and providing editorial direction to LIAISON staff – and it will meet twice every four months for a few hours, in person, by teleconference call, or by Web-meeting to plan, to review and approve articles for future issues of LIAISON.

I invite you to submit your name, to become a member of the advisory committee. If you would like more information, please contact LIAISON editorial staff by sending an e-mail to liaison@hc-sc.gc.ca.

Comments? Suggestions?

I also invite you to send us your comments, suggestions and information that you would like to see published. For more information on how to submit an article, please contact the LIAISON editor (liaison@hc-sc.gc.ca) and refer to our **"LIAISON Submission Guidelines"** that can be found on page 6.

I hope you will enjoy reading LIAISON and I look forward to hearing from you.

Volume 1, Number 1
April 2005

In This Issue...

Canada

Health Canada and the FNEP

Two international radiological accidents occurred in the late 1970s, which raised public concerns, prompting the federal government to create a federal nuclear emergency plan.

In 1984, Parliament assigned Health and Welfare Canada (as Health Canada was known) the lead role in administering the Federal Nuclear Emergency Plan (FNEP) and coordinating federal government-wide preparedness for radiological and nuclear emergencies. In the fall of the same year, the first version of the plan was released.

The FNEP outlines how federal departments will work together to coordinate federal response activities and support the provinces and territories during a radio-nuclear emergency. Specifically, the plan details the federal government's authority, emergency organization and concept of operations for a nuclear emergency; it describes federal emergency preparedness policies and planning principles; it outlines the federal responsibilities of participating organizations; and it defines the relationships between the federal and provincial emergency management organizations. The FNEP is an evergreen document that is continually modified and updated.

FNEP Timeline

The timeline highlights the events and activities that have influenced the development of the Federal Nuclear Emergency Plan.

1978

COSMOS 954, a Soviet nuclear-powered satellite, crashes in the Northwest Territories on January 24, 1978. The clean-up, coordinated by the United States and Canada, first raised the need for a Canadian, federal nuclear emergency preparedness and response plan.

1979

The accident at the Three Mile Island Unit 2 nuclear power plant occurs on March 28, 1979. The accident highlights the need for a communications strategy and national and international plans in case of a peacetime nuclear emergency.

1984

Prime Minister Pierre Trudeau assigns the Minister of the Department of Health and Welfare the lead role in developing and maintaining a national nuclear or radiological emergency plan.

The first version of the *Federal Nuclear Emergency Response Plan* (FNERP) is released in the fall of the same year.

1986

The world's most severe nuclear reactor accident occurs in Chernobyl, Ukraine, on April 26, 1986. The accident demonstrates the need to consider trans-boundary implications in national emergency plans.

Canada signs two International Atomic Energy Agency (IAEA) conventions – *Convention on Early Notification of a Nuclear Accident* and *Convention on Assistance in the Case of a Nuclear Accident or Radiological Emergency*.

1988

The *Emergency Preparedness Act* passes, establishing emergency preparedness as a required activity of the federal government.

The *Emergencies Act* passes. It defines a "national emergency" and federal government powers.

1991

Based on the lessons learned from the Chernobyl experience, the second version of the FNERP is released.

1992

Reports from Independent Science Advisory Boards and the Auditor General identify areas that need improvement in Canada's nuclear emergency preparedness capabilities.

1993

The FNERP is tested in INEX-1, an international nuclear exercise organized by the Nuclear Energy Agency of the Organisation for Economic Cooperation and Development.

1996

The FNERP is completely revised after a comprehensive two-year review and is renamed the *Federal Nuclear Emergency Plan*.

Canada and the United States sign the *Canada-United States Joint Radiological Emergency Response Plan* (JRERP).

The FNEP is tested in the first of four INEX-2 exercises, hosted in Switzerland.

1997

The third version of the FNEP is released, along with five provincial annexes for provinces with nuclear power generating stations or those with ports visited by nuclear powered vessels.

1999
The FNEP is tested during CANATEX-3 (i.e., Canadian National Exercise), in conjunction with the fourth of the INEX-2 international exercises, hosted by Canada.

On September 30, 1999, a nuclear accident occurs at a uranium conversion facility in Tokaimura, Japan. The Japanese government rates the Tokaimura accident as level 4 on the International Nuclear Event scale.

2001
Health Canada participates in JINEX 1 (i.e., Joint International Nuclear Exercise) in May 2001, to assess Canadian emergency preparedness and response to a foreign nuclear reactor accident.

September 11 occurs. Counter terrorism and national security issues are pushed to the forefront and a significant increase in resources is allocated to the FNEP to prepare for a changing threat environment.

2002
The fourth version of the FNEP is finalized.

The FNEP is signed-off by the Deputy Minister of Health and is endorsed by 13 federal departments and agencies.

2004
A National Security Policy is passed by the Government. The FNEP will continue to evolve to improve Canada's preparedness to radio nuclear emergencies.

Fun With Jumbles

1) ETIRESV: _____
Hint: rem

2) ANIOTIONZI: _____
Hint: positive

3) OSNFISI: _____
Hint: split

All terms can be found in our glossary:
http://www.hc-sc.gc.ca/hecs-sesc/neprd/glossary.htm

Exercise Pacific Watch Tests NERS

Exercise Pacific Watch was held in Vancouver, Victoria and Ottawa in support of the Marine Security Initiative. Developed by the Public Security and Emergency Planning Canada (PSECP) Exercises Division, the goal of the exercise was to test and validate the National Emergency Response System (NERS) in the context of a marine terrorist threat.

Part I, a seminar and orientation exercise, focussed on emergency management of a marine threat involving weapons of mass destruction in a multi-jurisdictional setting. Held in Vancouver on November 23, 2004, the objectives for Part I were to familiarize participants with the National Security Policy, NERS, the Government Operations Centre (GOC) and the concept for the Marine Security Operations Centres (MSOC); to allow participants to expand the NERS and the MSOC concept; and to provide external input regarding the development of the MSOC concept.

Part II was a functional exercise that centred on the collaboration between the GOC in Ottawa and the regional MSOC in Victoria, BC. Held on December 14, 2004, exercise objectives were to evaluate NERS processes and procedures; to get input on how to enhance NERS; and to provide external input regarding the development of the MSOC concept.

Participants in Exercise Pacific Watch included the Canada Border Services Agency, the Canadian Security Intelligence Service, Fisheries and Oceans Canada, the Canadian Coast Guard, Foreign Affairs Canada, the Department of National Defence, the Royal Canadian Mounted Police, Transport Canada and PSEPC. Representatives from the Province of BC and several local governments also participated in Part I.

FNEP Duty Officer Program Refresher Workshop Held

A FNEP Duty Officer Program Refresher workshop was held in Ottawa on January 12, 2005.

The workshop was for staff who had already participated in the duty officer roster for the FNEP or who were considered to have equivalent experience. Participants were instructed on new duty officer procedures and, a week later, they were evaluated on their response to emergency scenarios.

FNEP Duty Officer Program training is tentatively scheduled for late spring 2005. For more information, please contact Jean Patrice Auclair, Chief, NEPRD, Radiation Protection Bureau (RPB), by calling 613-954-6676 or sending an e-mail to JP_Auclair@hc-sc.gc.ca

Health Canada Implements ARGOS

By: **Brian Ahier**
Head, Technical Assessment Coordination Section
Nuclear Emergency Preparedness and Response Division
Radiation Protection Bureau

Health Canada, in partnership with Environment Canada's Canadian Meteorological Centre (CMC) and other key federal partners, is implementing the Accident Reporting and Guidance Operation System (ARGOS).

A nuclear emergency decision support system, ARGOS will improve coordination and interoperability among FNEP partners, as it can facilitate a rapid, coordinated response to a radiological or nuclear incident; enable effective decision-making; and provide critical information to the operational community.

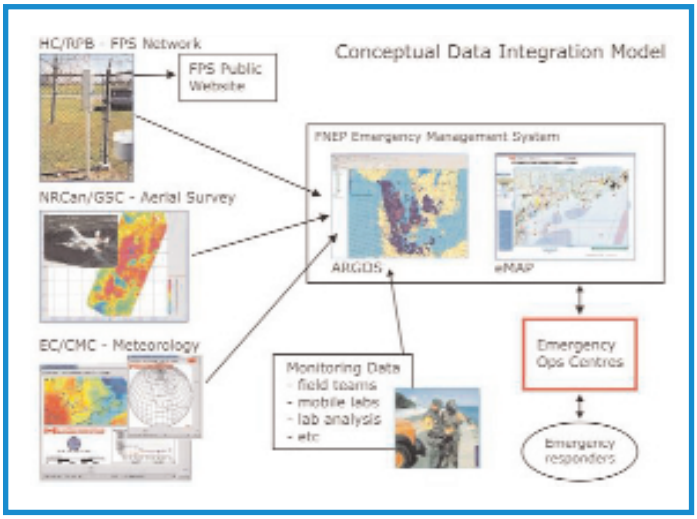
ARGOS was made available through the collaboration of the Danish Emergency Management Agency of the Danish Ministry of Defence and the Prolog Development Center of Denmark. Funding for ARGOS has been provided by the Chemical, Biological, Radiological and Nuclear Research and Technology Initiative (CRTI), and the system is scheduled to be operational by March 2005.

ARGOS is being deployed as an operational radiological-nuclear emergency tool, giving the FNEP national response organization the ability to integrate and assess large quantities of dynamic multi-disciplinary, multi-sourced information. This includes the meteorological modelling, monitoring and forecasting capabilities provided by CMC; radiological monitoring data from Health Canada, Geological Survey of Canada and others; and radiation dose and countermeasures assessment.

ARGOS has been configured to synchronize and import current and forecast weather data for North America for visualization and short-range atmospheric modelling, as well as launch runs of the long-range dispersion model at CMC's computing facility in Dorval, Québec. In parallel, CMC is enhancing its modelling capabilities, which are used directly within ARGOS. The intent is to have regional to urban scale dispersion modelling available through a single interface.

The ARGOS infrastructure within Health Canada's offices has been modified to allow connections to Health Canada's fixed point gamma surveillance network. This network is being deployed in Canada, around nuclear facilities and other sensitive areas.

Health Canada is also developing linkages between ARGOS and the US Department of Energy National Atmospheric Release Advisory Center and with provincial emergency assessment codes.



The ARGOS decision support system.

Finally, development is taking place to extend access to approved ARGOS outputs through FNEP's restricted-access Emergency Communications Web site and the E-MAP Nuclear Web-based geographic information system that was developed and implemented in partnership with Environment Canada – Atlantic Region.

Brian Ahier Accepts Posting with NEA

Brian Ahier, head of the Technical Assessment Coordination Section (TACS), NEPRD, has accepted a three-year posting with the Nuclear Energy Agency (NEA) as a radiation protection specialist.

The NEA is a specialized agency within the Organisation for Economic Co-operation and Development. Its mission is to assist 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.

In the interim, Eric R. Pellerin has been named acting head of TACS, NEPRD. He can be reached by phone at 613-954-1072 or by e-mail at Eric_Pellerin@hc-sc.gc.ca

Whole Body Monitoring for Radiological Contamination

By: **Dr. Gary H. Kramer**
Head, Human Monitoring Laboratory
Radiation Surveillance and Health Assessment Division
Radiation Protection Bureau

The RPB has acquired high-resolution portable and fixed whole body monitoring equipment that upgrades and expands the Canadian Government's radiological monitoring capabilities.

The Human Monitoring Laboratory, RPB, submitted a proposal to the CRTI to improve the Government's monitoring capabilities, in support of the FNEP. The proposal was developed in partnership with the Department of National Defence and Atomic Energy of Canada Limited. It strengthens the federal government's capabilities to respond to emergencies involving the release of radioactive material in a populated centre.

Portal Monitors

Four deployable portal monitors were purchased in 2002. The portals can be used to quickly identify individuals who have been contaminated with radioactive materials from those who have not. When used together, they can measure up to 1000 people per hour. They were used in joint federal-provincial emergency field exercises and training workshops in 2003 and 2004. Currently, they are being used in the main entrance of the RPB, to monitor people entering and leaving the building. In February 2005, the equipment was tested under realistic exercise conditions at Canadian Forces Base Suffield, in Alberta.

Whole Body and Lung Detectors

In 2004, other portable equipment was acquired that can be used as a high-resolution, portable whole body counter, to determine if individuals have inhaled any air or consumed any food or water contaminated with radioactive material. The sensitivity of this instrument allows field identification of internally deposited radionuclides, which enhances risk estimates and improves the consequence management of affected individuals. The equipment has been calibrated using a combination of experimental and standard statistical modelling (i.e., Monte Carlo) techniques. The equipment is currently in the Human Monitoring Laboratory.

A high-resolution whole body counter was acquired in 2003, and now an analysis of a complex internal burden can be done, following the release of fission and activation (i.e., radio nuclide) products. In addition, in 2003, the RPB lung counter was replaced with larger, more reliable detectors, enabling a more accurate analysis of an actinide (uranium, plutonium, neptunium, etc.) intake. All equipment in the fixed facility has been characterized and is fully functional.

Dr. Gary Kramer stands in a portal monitor installed at the Radiation Protection Bureau.

Fermi II Exercise Tests Laboratory's Capabilities

By: **Sonia Johnson**
Head, National Monitoring Section
Radiation Protection Bureau

The RPB's National Monitoring Section and NEPRD participated in a nuclear emergency laboratory exercise hosted by Emergency Management Ontario. The exercise was held in September 2004, and it simulated a release from the Fermi II nuclear power reactor in Michigan, located within 20 km of the Canadian border.

The scenario for the exercise centred on an agricultural contamination, and the goal of the exercise was to determine if food and milk from the affected area were safe for human consumption.

Thirty simulated forage, fruit, vegetable, drinking water and milk samples were collected and sent to the National Monitoring Section, the Government of Ontario's Radiation Protection Laboratory and a federal mobile nuclear laboratory. The exercise tested each laboratory's emergency sample measurement protocol and the communication and collaboration processes between participating groups. The exercise also marked the inaugural deployment of the mobile nuclear laboratory.

The Science Corner

The RPB Recognized

RPB was recently recognized by Franca Padoani, chief of the Radionuclide Monitoring Section of the Comprehensive Nuclear Test Ban Treaty (CTBT) Organization, for its international contributions to the science and promotion of the development of noble gas technology for verification of the CTBT.

"In my view Canada's contribution, in particular that of the Radiation Protection Bureau, to the advancement of the Noble Gas experiment has been outstanding and decisive, not just in terms of the installation of noble gas systems in Canada, but also with regard to its high scientific input," said Dr. Padoani.

Radionuclide noble gas technology is the newest and perhaps the most definitive means of identifying a nuclear explosion of the four CTBT verification technologies (seismic, infrasound, hydroacoustic and radionuclide particulate/noble gas). Dr. Padoani said the RPB recently provided significant leadership in workshops and working group meetings at the United Nations on the scientific and technical justification for the experimental installation of noble gas equipment at all 40 noble gas sites described in the treaty. Before this decision, it was uncertain that the development of noble gas technology would extend beyond a few test stations until the Entry Into Force of the treaty.

For more information about the treaty and its progress, please go to http://pws.ctbto.org/

Fun With Jumbles – Answers

1) Sievert

2) Ionization

3) Fission

Our mission is to help the people of Canada maintain and improve their health.

Health Canada

LIAISON Submission Guidelines

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LIAISON is an electronic newsletter dedicated to promoting a broad and open exchange of information relating to nuclear emergency preparedness and response in Canada, by objectively sharing news and information among stakeholders. Our vision is to foster a dedicated, visible and collaborative relationship among all stakeholders involved in radiological and nuclear emergency planning, preparedness and response for the benefit of all Canadians.

We Want to Hear From You!

Do you have news, information on issues or anecdotes that you would like to share with your FNEP colleagues? If you do, let us know!

Articles submitted for publication:

- are welcome in either French or English;
- should focus on issues relating to nuclear emergency preparedness and response;
- should be less than 500 words (maximum) and be written in layman's terms.

Please save your article in text (*.txt), Word (*.doc) or WordPerfect (*.wpd) format. If you have graphics to support your text, send them along! Images should be 150–300 dpi and in JPEG (*.jpg) or bitmap (*.bmp) format.

Note that all articles will be edited for length and clarity prior to publishing. Accompanying images may or may not be used in accordance with editorial board decisions.

If you want to add your name to LIAISON's mailing list, please contact us! Just send us an e-mail, requesting that we add you to our list of readers.

Contact Us!

LIAISON staff can be reached at:

Technical Information Coordination Section
NEPRD
HECS Branch – SEP – RPB
Health Canada
Tupper Building, 4th Floor
2720 Riverside Drive
P/L 6604G
Ottawa, Ontario
Canada
K1A 0K9

Our e-mail address is: liaison@hc-sc.gc.ca