

MEMORANDUM TO: James E. Dyer, Director **October 8, 2004**
Office of Nuclear Reactor Regulation

Jack R. Strosnider, Jr., Director
Office of Nuclear Material Safety and Safeguards

Roy P. Zimmerman, Director
Office of Nuclear Security and Incident Response

Paul H. Lohaus, Director
Office of State and Tribal Programs

FROM: Carl J. Paperiello, Director **/RA/ Carl J. Paperiello**
Office of Nuclear Regulatory Research

SUBJECT: SUMMARY OF THE ACTIVITIES OF THE INTERNATIONAL
COMMISSION ON RADIOLOGICAL PROTECTION

The International Commission on Radiological Protection (ICRP) was established in 1928 as the "International X-ray and Radium Committee"¹, but adopted its present name in 1950 to reflect its mission to advance the science of radiological protection by providing recommendations and guidance on all aspects of protection against ionizing radiation. The ICRP currently comprises the Main Commission, Committee 1 (Radiation Effects), Committee 2 (Doses from Radiation Exposure), Committee 3 (Protection in Medicine), Committee 4 (Application of ICRP Recommendations), ad hoc task groups and working parties, and the Scientific Secretariat. The Main Commission consists of 12 members and a Chairman. In addition, Committee 5 (Radiological Protection of Non-Human Species), which the ICRP established by consensus in November 2003, will commence its work in the 2005 – 2009 period.

In its early years, the ICRP published its recommendations and advice as papers in various scientific journals in the fields of medicine and physics. Then, in 1959, the ICRP began producing its own series of ICRP Publications. Today, the ICRP places draft reports on its Web site (at <http://www.icrp.org/>) to solicit stakeholder review and comment before finalizing the reports as ICRP Publications. During calendar year 2003, the ICRP released four major reports, including Publication 89, "Basic Anatomical and Physiological Data for Use in Radiological Protection: Reference Values"; Publication 90, "Biological Effects after Prenatal Irradiation (Embryo and Fetus)"; Publication 91, "A Framework for Assessing the Impact of Ionizing Radiation on Non-Human Species"; and Publication 92, "Relative Biological Effectiveness (RBE), Quality Factor (Q), and Radiation Weighting Factor (w_R).". In addition, the ICRP published a guidance document, entitled

¹ The professional society of radiologist physicians, known as the International Society of Radiology (ISR), founded the ICRP as the "International X-ray and Radium Committee" to reflect its role in providing recommendations and guidance concerning occupational radiation exposure in medicine.

“ICRP Supporting Guidance 3: Guide for the Practical Application of the ICRP Human Respiratory Tract Model.”

The ICRP also documents its activities in annual reports, which provide a brief overview of the current and planned activities of the Main Commission and each of the ICRP committees. Annual reports through 2002 are accessible on the ICRP’s Web site, and a copy of the 2003 Annual Report is provided as an attachment to this memorandum. An electronic version of the 2003 Annual Report should be available within the next couple of months. One change in this year’s report is the photograph of the Mallard duck on its cover. The duck is one of several “reference animals and plants” that the ICRP will incorporate into its framework for radiological protection of the environment. Specifically, the report states that the duck was selected because the ICRP wants to develop “some form of public or political resonance, so that both decision makers and the general public at large are likely to know what these organisms actually are, in common language — such as a duck.”

The remainder of this memorandum summarizes the recent activities of the ICRP:

During the past year, the Main Commission has focused on developing new basic recommendations to replace the “1990 Recommendations of the International Commission on Radiological Protection,” as specified in ICRP Publication 60. One goal of the ICRP is to create a single publication to consolidate many of the recommendations that have been made since 1990. The ICRP posted a draft version of the consolidated recommendations on its Web site on June 21, 2004, and is requesting comments by December 31, 2004. The Radiation Protection Steering Committee established by the U.S. Nuclear Regulatory Commission (NRC), which includes representatives from each NRC program office, is collecting comments on the ICRP’s draft consolidated recommendations from its members’ respective offices, as well as the NRC’s Advisory Committee on Medical Uses of Isotopes and the various Agreement States. The steering committee will prepare a consolidated reply for the Commission’s approval in early November before submitting the comments to the ICRP.

1. The Main Commission also developed a draft report that addresses protection against radiation exposure in the aftermath of a terrorist attack. The ICRP posted the draft on its Web site on May 17, 2004, and requested comments by August 6, 2004.
2. Although revising the 1990 recommendations has been a primary focus of the Main Commission, the various ICRP committees, task groups, and working groups are focusing on other work, as illustrated by the following examples:
 - ▶ Committee 1 is reviewing the epidemiological evidence of low-dose radiation-induced cancer and characterizing the dose-response relationship. In particular, Committee 1 is examining the cellular consequences of radiation-induced damage and the role of its repair on carcinogenesis.
 - ▶ Committee 2 has recently developed a new model for the human alimentary tract, which was designed to replace the gut model described in ICRP Publication 30, “Limits for the Intake of Radionuclides by Workers.” The Committee recently issued a draft report describing the new model, which is available for review and comment on the ICRP Web site.

- ▶ Committee 3 is examining the management of patient dose in digital radiology, updating patient dose from radiopharmaceuticals, preventing high-dose-rate brachytherapy accidents, and the release of therapy patients with permanently implanted sealed sources.
 - ▶ Committee 4 has been reviewing the radiological risks associated with space flight, and developing recommendations for use in protecting populations living in sites and environments that are affected by radioactive residues.
3. Finally, the ICRP established a new committee (Committee 5) to develop recommendations and guidance concerning radiological protection of non-human species. This committee, chaired by Dr. R. Jan Pentreath (from the University of Reading in the United Kingdom), will begin to operate in 2005.

Attachment: As stated

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ITEM: 9#2

ORIGINATOR: HOLAHAN, DSARE/RPERWMB

SUBJECT: SUMMARY OF THE INTERNATIONAL COMMISSION ON
RADIOLOGICAL PROTECTION ACTIVITIES

DATE: 09/21/04

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