Current and Planned Activities of the National Council on Radiation Protection and Measurements

David A. Schauer, Executive Director

Joint Coordinating Committee for Radiation Effects Research
7th International U.S. – Russian Meeting

Washington, DC
September 16 - 17, 2009
Key Dates in NCRP’s History

1929: U.S. Advisory Committee on X-ray and Radium Protection

1946: U.S. National Committee on Radiation Protection

1964: National Council on Radiation Protection and Measurements (NCRP) chartered by U.S. Congress (Public Law 88-376)
Cornerstones of role in radiation health protection:

1. Collect and analyze information and recommendations in the public interest about:
   a. protection against radiation; and
   b. radiation measurements, quantities and units.

2. Develop basic concepts of radiation protection;

3. Facilitate effective use of combined resources of organizations concerned with radiation protection; and

4. Cooperate with national and international governmental and private organizations; and

5. Disseminate the Council’s work.
Organizational & Operational Structures

**Board of Directors**
(13 members including NCRP’s President)
- **Approve** topics to be addressed and committee membership

**Council**
(100 members elected for 6 year terms)
- **Review** reports, commentaries and statements

**Program Area Committees**
(~12 members serving annual renewable terms)
- **Identify** topics to be addressed and possible funding sources
- **Suggest** committee members
- **Perform** peer reviews of draft reports prior to Council review

**Scientific Committees**
(various sizes and compositions)
- **Draft** reports, commentaries and statements
Program Area Committees

- **PAC1** - Basic criteria, epidemiology, radiobiology and risk (WF Morgan)
- **PAC2** - Operational radiation safety (DS Myers)
- **PAC3** - Nuclear and radiological safety and security (JW Poston)
- **PAC4** - Radiation protection in medicine (JL Bushberg)
- **PAC5** – Environmental radiation and radioactive waste issues (SY Chen)
- **PAC6** - Radiation measurements and dosimetry (RA Guilmette)
Current NCRP Scientific Committees Working on Radiation Effects and Risk Assessment

Major Planned NCRP Activity

Major report is planned on *Low Dose and Low Dose Rate Biological Effects and Implications for Human Health*

– will *incorporate* results of extensive research on low-dose biological interactions sponsored by U.S. Department of Energy and other organizations worldwide

– will provide an *extension* of recently published analyses of low-dose radiation effects in ICRP Publication 99 (2004), the French Academy of Sciences report (2005), and the U.S. National Academy of Sciences BEIR VII report (2006)
NCRP’s Strategic Initiative on Biological and Human Health Effects of Low-Dose Radiation

• **Primary Goal:** Prepare definitive publication during 2011 to 2016 on biological effects and potential human health implications of exposure to low dose and low dose rate radiation

• Report will contain:
  – up-to-date reviews of laboratory and human epidemiology studies
  – effects of radiation quality and dose rate
  – integration of results into reliable, predictive models of human health effects at low doses
  – health protection and regulatory implications of findings, and effective communication of projected risks of low dose radiation exposure
IONIZING RADIATION
EXPOSURE OF THE POPULATION
OF THE UNITED STATES

PREPUBLICATION COPY
(This Report is undergoing final
editing. Revisions due to style, format, or
inadvertent errors may occur.)
NCRP Report No. 160, Ionizing Radiation Exposure of the Population of the United States

**Early 1980s**
- Background (83 %)
- Occupational / industrial (0.3 %)
- Consumer (2 %)
- Medical (15 %)

**2006**
- Background (50 %)
- Occupational / industrial (0.1 %)
- Consumer (2 %)
- Medical (48 %)

**Collective effective dose (person-Sv)**
- Early 1980s: 835,000
- 2006: 1,870,000

**Effective dose per individual in the U.S. population (mSv)**
- Early 1980s: 3.6
- 2006: 6.2
# Radiation Exposure to US Population - Medical Exposures

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Procedure Count</th>
<th>%</th>
<th>Effective Dose (person Sv)</th>
<th>%</th>
<th>E_{US} (mSv)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Computed Tomography</td>
<td>67</td>
<td>17</td>
<td>438,000</td>
<td>49</td>
<td>1.5</td>
</tr>
<tr>
<td>Nuclear Medicine</td>
<td>18</td>
<td>5</td>
<td>231,000</td>
<td>26</td>
<td>0.8</td>
</tr>
<tr>
<td>Interventional</td>
<td>17</td>
<td>4</td>
<td>128,000</td>
<td>14</td>
<td>0.4</td>
</tr>
<tr>
<td>Conventional Radiography &amp; Fluoroscopy</td>
<td>292</td>
<td>74</td>
<td>99,000</td>
<td>11</td>
<td>0.3</td>
</tr>
<tr>
<td><strong>TOTALS</strong></td>
<td><strong>426</strong></td>
<td><strong>100</strong></td>
<td><strong>898,000</strong></td>
<td><strong>100</strong></td>
<td>~3</td>
</tr>
</tbody>
</table>

(600 % increase)
Collaborative Efforts Related to Radiation Protection in Medicine

- Image Gently and Step Lightly Campaigns
- WHO Global Initiative on Radiation Safety in Health Care Settings
  - Role of justification in medical imaging
  - Justification, optimization and implementation
  - August 6-7, 2009
- Computed Tomography in Emergency Medicine: Ensuring Appropriate Use
  - Co-sponsored by AAPM, ACEP, ACR, ASER, SAEM, CDC, EPA and Landauer, Inc.
  - September 23-24, 2009
Recent Publications and Current Scientific Committees Working on Issues Related to Radiation Dosimetry and Measurements


NCRP Publications – “Disseminate”

- NCRP reports and current activities are described online at http://NCRPonline.org
- Publications can be purchased online at http://NCRPpublications.org
- Institutional license agreements are now available through:
  - ebrary (http://www.ebrary.com)
2010 Annual Meeting

Communication of Radiation Benefits and Risks in Decision Making
(Chairman, Dr. Locke, Johns Hopkins)

– Will build on topics discussed at previous NCRP annual meetings, e.g.,
  • Exposures from medical imaging and nuclear power

– March 8-9, 2010 at the Bethesda Hyatt