

Annual Report

2013

Year in Review





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Charter

The National Council on Radiation Protection and Measurements is a nonprofit corporation chartered by Congress in 1964 to:

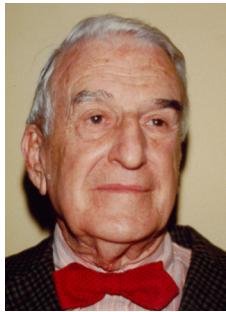
1. Collect, analyze, develop and disseminate in the public interest information and recommendations about (a) protection against radiation and (b) radiation measurements, quantities and units, particularly those concerned with radiation protection.
2. Provide a means by which organizations concerned with the scientific and related aspects of radiation protection and of radiation quantities, units and measurements may cooperate for effective utilization of their combined resources, and to stimulate the work of such organizations.
3. Develop basic concepts about radiation quantities, units and measurements, about the application of these concepts, and about radiation protection.
4. Cooperate with the International Commission on Radiological Protection, the International Commission on Radiation Units and Measurements, and other national and international organizations, governmental and private, concerned with radiation quantities, units and measurements and with radiation protection.

The Council is the successor to the unincorporated association of scientists known as the National Committee on Radiation Protection and Measurements and was formed to carry on the work begun by the Committee in 1929.

Participants in the Council's work are the Council members and members of scientific, advisory and administrative committees. Council members are selected on the basis of their scientific expertise and serve as individuals, not as representatives of any particular organization. The scientific committees, composed of experts having detailed knowledge and competence in the particular area of the committees' interests, draft reports, commentaries and statements. These are then submitted to the full membership of the Council for careful review and approval before being published.

Mission

To support radiation protection by providing independent scientific analysis, information and recommendations that represent the consensus of leading scientists.



Lauriston S. Taylor
1929–1977



Warren K. Sinclair
1977–1991



Charles B. Meinhold
1991–2002



Thomas S. Tenforde
2002–2012



John D. Boice, Jr.
2012–



President's Message

The visibility, influence and importance of the National Council on Radiation Protection and Measurements (NCRP) is in a resurgence. The nation and world recognizes the need for sound guidance in radiation protection and we are striving to meet these needs. A few of many highlights for this past year:

- The WARP initiative (Where are the Radiation Professionals? A National Crisis) was submitted to Council for publication as a statement (only the 11th such statement in our history).
- An update for NCRP Report No. 116 (1993) on Radiation Protection Guidance for the United States has begun (Chairs John D. Boice, Jr. and Kenneth R. Kase).
- SC 1-23 is providing a fresh look on the radiation protection issues for lens of the eye (Chairs Eleanor A. Blakely and Lawrence T. Dauer).
- SC 1-21 will have a commentary out in 2014 on integrating radiation epidemiology with radiation biology (Chairs Sally A. Amundson and Jonine Bernstein).
- SC 1-22 will have a commentary out in 2014 on radiation protection issues for astronauts (Chairs Dudley T. Goodhead and R. Julian Preston).
- SC 1-24 has begun to look at radiation exposures in space and the potential for effects on the central nervous system (Chairs Leslie A. Braby and Richard S. Nowakowski).
- SC 3-1 in cooperation with New York City Department of Health and Mental Hygiene, will be addressing the complex issues of dosimetry for emergency responders in the event of an improvised nuclear device going off in a city (Chairs Adela Salame-Alfie and Stephen V. Musolino).
- SC 4-6 is preparing an NCRP statement on managing dose and deterministic injuries associated with fluoroscopically-guided interventions (Chair Stephen Balter).
- SC 6-8 continues to provide peer review of the radiation dose assessment approach taken by the U.S. Department of Defense regarding the 70,000 military and civilians in Japan in 2011 at the time of the Fukushima earthquake, tsunami, and nuclear reactor accident (Chair John E. Till).
- SC 6-9 is providing a tour de force assessment of the complex radiation dose assessment procedures needed for the Million Worker and Veteran Study (Chairs Andre Bouville and Richard E. Toohey).
- The Million Worker and Veteran Study continues with support from the U.S. Department of Energy, the U.S. Nuclear Regulatory Agency, the National Aeronautics and Space Administration, the U.S. Environmental Protection Agency, as well as the U.S. Department of Defense and the U.S. Department of Veteran Affairs. The study will address the level of risk when healthy individuals receive radiation gradually over a period of years.

- A new Program Area Committee (PAC 7) was created and chaired by Paul A. Locke. It will address the critically important areas of Radiation Education, Risk Communication, Outreach, and Policy.

Other important ongoing activities deal with radiation and nanotechnology (Chairs Mark Hoover and David S. Myers), sealed radioactive sources (Chair Kathryn H. Pryor), protection in dentistry (Chairs Alan G. Lurie and Mel L. Kantor), communicating radiation risks and Institutional Review Board guidance (Chair Julie E.K. Timins), and patient dose and computed tomography (Chair Mannudeep K.S. Kalra).

Yet despite the obvious need for radiation guidance in the United States we are being overwhelmed by two tidal waves of societal change: there continues to be a dwindling number of radiation professionals available to meet the needs of the nation and the sources of funding for radiation protection activities continue in a downward spiral. Our WARP initiative will address these tsunami trends of reality, but solutions must come from increased governmental recognition and support.

And the issues of radiation protection in the 21st century have been sculptured by events, by medicine, and by horrific possibilities. The main event of course was the March 11, 2011 Fukushima nuclear reactor accident and melt down which brought into vivid focus the need for improved radiation guidance and improved ways to communicate with the press, members of the general public, and other professionals. Another happening was the 2007 International Commission on Radiological Protection (ICRP) recommendations that have generated interest around the world and coincide with U.S. initiatives to update and revise our protection regulations. The remarkable increase in public exposure to medical radiological imaging (over 85 million computed tomography exams per year!) accentuates the need for continued protection guidance in this important medical advance in the beneficial uses of ionizing radiation. The unsettling nature of world affairs raises the possibility that a terrorist event with nuclear devices may occur on U.S. soil. The 2013 NCRP Annual Meeting entitled, "Population Dose and Impact on Exposed Populations" addressed many of these issues and was dedicated to the people of Fukushima who suffered after the earthquake, tsunami, and nuclear reactor accident.

Our financial situation, in my view, is a C+ to B-: good but not great; stable in the short term but uncertain in the long term. In addition to grants and contracts, we received interagency support for research efforts to study one million U.S. radiation workers and veterans, and we are reaching out to government agencies to support the initiatives outlined above as well as professional societies, universities, industry, donors, and benefactors. We are grateful for our corporate sponsors and many professional contributors but we need more resources to increase beyond our current basal metabolic rate. We will embark upon innovative approaches for resource gathering in 2014 – please send us your ideas or your interest in helping!

Our 2014 Annual Meeting showcased NCRP and the past 50 y of accomplishments since being chartered by Congress in 1964, and our plans, goals and dreams for the future. It continued many innovations from the 2013 meeting, including written question and published answers and a "rapid" publication goal of the proceedings. A column on NCRP activities ("The Boice Report") is prepared each month for the *Health Physics News* covering recent events in radiation protection, measurements,

science, and health throughout the world. There have been 20 columns published through December 2013. NCRP activities were presented at the Agency for Toxic Substances and Disease Registry Director's Science Seminar Series, Federal Radiological Preparedness Coordinating Committee, Food and Drug Administration, Health Physics Society, ICRP Second International Symposium on the System of Radiological Protection in Abu Dhabi, Johns Hopkins University Applied Physics Laboratory, National Academy of Sciences, National Cancer Institute, Radiation Research Society, Veterans Advisory Board for Dose Reconstruction, U.S. Department of Energy, U.S. Nuclear Regulatory Commission, and at an international symposium in Fukushima City. The 2013 calendar year was productive with the initiation of many scientific committees outlined above and with the publication of NCRP commentaries, reports, proceedings, and scientific articles. These include:

- NCRP Report No. 174 on *Preconception and Prenatal Radiation Exposure: Health Effects and Protective Guidance* (Chaired by Robert L. Brent).
- NCRP Report No. 171, *Uncertainties in the Estimation of Radiation Risks and Probability of Disease Causation* (Chaired by R. Julian Preston) was published in 2012 but a synopsis by the scientific committee was published in the scientific literature in 2013: Preston, R.J., Boice, J.D., Jr., Brill, A.B., Chakraborty, R., Conolly, R., Hoffman, F.O., Hornung, R.W., Kocher, D.C., Land, C.E., Shore, R.E. and Woloshak, G.E. (2013). "Uncertainties in estimating health risks associated with exposure to ionising radiation," *J. Radiol. Prot.* 33, 573–588. Publishing a summary of completed NCRP reports and commentaries in the broader scientific literature is enthusiastically encouraged as a way to reach broader audiences.
- NCRP Report No. 173, *Investigation of Radiological Incidents* (Chaired by David S. Myers) was published in 2012 and a brief overview appeared in the May 2013 issue of *Health Physics News* by Kathryn H. Pryor and David S. Myers.
- The Proceedings of the 48th Annual Meeting in 2012 on "Emerging Issues in Radiation Protection in Medicine, Emergency Response, and then Nuclear Fuel Cycle" admirably chaired by Richard E. Toohey was published in November 2013 in *Health Physics* (Volume 105, Issue 5). An informative summary appeared in the April 2012 issue of *Health Physics News*.
- The 2012 Proceedings included the 36th Lauriston S. Taylor Lecture on Radiation Protection and Measurements by Antone L. Brooks on "From the field to the laboratory and back: the what ifs, wows, and who cares of radiation biology" [*Health Phys.* **105**(5), 407–421, 2013] and the 9th Annual Warren K. Sinclair Keynote Address by Fred A. Mettler, Jr. on "Effects of childhood radiation exposure: An issue from computed tomography scans to Fukushima" [*Health Phys.* **105**(5), 424–429, 2013].
- The Proceedings of the 49th Annual Meeting Proceedings in 2013 on "Population Dose and Impact on Exposed Populations" (Chairs S.Y. Chen and Bruce A. Napier) was almost published in the same year (2013) as the meeting but fell short by only a few months. This is a new attempt to make our publications more timely and accessible. An incredible summary by Bruce Napier with accompanying photos by Genevieve S. Roessler was published just a few weeks after the Annual Meeting in the April 2013 issue of *Health Physics News*!

- Guidance on computed tomography use in emergency medicine was published in the *Journal of the American College of Radiology* and in the *Annals of Emergency Medicine*: Sierzenski, P.R., Linton, O.W., Amis, E.S., Jr., Courtney, D.M., Larson, P.A., Mahesh, M., Novelline, R.A., Frush, D.P., Mettler, F.A., Timins, J.K., Tenforde, T.S., Boice, J.D., Jr., Brink, J.A., Bushberg, J.T. and Schauer, D.A. (2014). “Applications of justification and optimization in medical imaging: Examples of clinical guidance for computed tomography use in emergency medicine,” *J. Am. Coll. Radiol.* **11**, 36–44 and *Ann. Emerg. Med.* **63**, 25–32,.

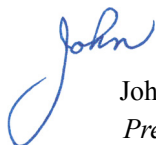
Active committees are preparing the reports and commentaries highlighted at the beginning of the President’s message. In addition, NCRP is continuing to move forward to address the evolving and challenging, issues of radiation protection facing our nation. These include:

- An important and anticipated publication in 2014 is NCRP Report No. 175 on *Decision Making for Late-Phase Recovery from Nuclear or Radiological Incidents* (Chaired by S.Y. Chen). An overview of the report by Anne F. Nisbet and S.Y. Chen will appear in the *Annals of the ICRP*.
- Approaches to improve radiation risk communication, perception and outreach have begun.
- Expanding our efforts in medicine, such as quality management in radiological medical imaging and electronically tracking patient exposures are encouraged.
- Partnering with the Radiation Research Society to continue to provide travel awards for young scientists to attend the annual meeting.
- Assigning each Council member to a program area committee and having more frequent PAC meetings — the PAC meetings at the Annual Meeting and joint session of all PACs were remarkably rewarding and will continue.
- Issues surrounding mobile phone, radiofrequency, and other nonionizing radiation uses are being considered.
- Becoming more attuned to the modern age with Twitter, Facebook, webcasts, dynamic electronic publishing, and website development.
- Participating in meetings or conferences of the Health Physics Society, the International Commission on Radiological Protection, the NRC Regulatory Information Conference, the Radiation Research Society, the United Nations Scientific Committee on the Effects of Atomic Radiation, the Veterans Advisory Board for Dose Reconstruction, and seminar series sponsored by the U.S. Food and Drug Administration, Harvard University, Johns Hopkins Applied Physics Laboratory, Memorial Sloan-Kettering Cancer Center, and the American Board of Radiology Foundation national summit to address the safe and appropriate use of medical imaging, and other venues to increase NCRP visibility and impact.

Our reports, activities, members, programs and more can be found on the NCRP website <http://ncrp.org>. The NCRP program of activities is made possible by the partnership and financial support from many governmental agencies, including the Centers for Disease Control and Prevention, National Aeronautics and Space Administration, National Cancer Institute, U.S. Department of Defense, U.S.

Department of Energy, U.S. Department of Homeland Security, U.S. Environmental Protection Agency, and U.S. Nuclear Regulatory Commission. Gifts from our corporate sponsors and many collaborating organizations remain critical to our continued success and are gratefully acknowledged.

Finally, the NCRP remains a dynamic and influential organization only because of the generous contributions of time and knowledge made by Council members, the Senior Vice President, Scientific Vice Presidents, committee members, Board of Directors, consultants, and the NCRP staff! These continue to be exciting and challenging times and opportunities abound. We're only limited by our imagination (and by shrinking budgets!). Please continue to help NCRP address the needs of the nation as we meet together the challenges of radiation protection for the 21st century!



John D. Boice, Jr.
President

Membership

There are 100 Council Members serving six-year terms. There are normally 15 to 19 vacancies each year. Election of Council Members is based on nominations made by committee chairmen, current and Distinguished Emeritus Council members, and the Nominating Committee. New members are nominated and elected based primarily on the scientific contributions they have made to the work of the Council and/or recognized interest and scientific or professional competence in some aspect of radiation protection and measurements. In addition, the Board of Directors recommends that candidates with specific areas of expertise be sought based on the needs of the Council. The Council is comprised of specialists in biophysics, dentistry, dosimetry, environmental transport, epidemiology, genetics, health physics, medical physics, molecular and cellular biology, nuclear energy, nuclear medicine, pathology, physics, public health, public policy, radiation measurements, radiation therapy, radiobiology, radiology, risk analysis and communication, statistics, and waste management. In 2013 there were 14 vacancies; seven new members were elected, and seven members were re-elected. The seven new members were:

Richard R. Brey	Ehsan Samei
Donald A. Cool	George Sgouros
Francis A. Cucinotta	Daniel O. Stram
Wayne D. Newhauser	

2013 Council Membership

Sally A. Amundson	Columbia University Medical Center	2010–2016
A. Iulian Apostoaei	SENES Oak Ridge, Inc.	2012–2018
Kimberly E. Applegate	Emory University School of Medicine	2013–2019
Edouard I. Azzam	New Jersey Medical School	2012–2018
Stephen Balter	Columbia-Presbyterian Medical Center	2013–2019
Steven M. Becker	University of Alabama at Birmingham	2011–2017
Joel S. Bedford	Colorado State University	2010–2016
Jonine L. Bernstein	Memorial Sloan-Kettering Cancer Center	2012–2018
Mythreyi Bhargavan	American College of Radiology	2009–2015
Eleanor A. Blakely	Lawrence Berkeley National Laboratory	2012–2018

William F. Blakely	Armed Forces Radiobiology Research Institute	2009–2015
John D. Boice, Jr.	National Council on Radiation Protection and Measurements	2012–2018
Wesley E. Bolch	University of Florida	2011–2017
Richard R. Brey	Idaho State University	2013–2019
James A. Brink	Massachusetts General Hospital	2011–2017
Brooke R. Buddemeier	Lawrence Livermore National Laboratory	2009–2015
Jerrold T. Bushberg	University of California, Davis	2008–2014
John F. Cardella	BayState Health System	2008–2014
Polly Y. Chang	SRI International	2011–2017
S.Y. Chen	Argonne National Laboratory	2011–2017
Lawrence L. Chi	General Electric Hitachi Nuclear Energy Americas	2010–2016
Mary E. Clark	U.S. Environmental Protection Agency	2008–2014
Donald A. Cool	U.S. Nuclear Regulatory Commission	2013–2019
Michael L. Corradini	University of Wisconsin, Madison	2010–2016
Allen G. Croff	Retired	2010–2016
Francis A. Cucinotta	University of Nevada, Las Vegas	2013–2019
Lawrence T. Dauer	Memorial Sloan-Kettering Cancer Center	2012–2018
Paul M. DeLuca	University of Wisconsin Medical School	2008–2014
Christine A. Donahue	CB&I	2009–2015
Andrew J. Einstein	Columbia University	2012–2018
Alan J. Fischman	Massachusetts General Hospital	2009–2015
Patricia A. Fleming	Saint Mary's College, Notre Dame	2009–2015
Norman C. Fost	University of Wisconsin – Madison	2011–2017
John R. Frazier	Independent Consultant	2008–2014
Donald P. Frush	Duke University Medical Center	2010–2016
Ronald E. Goans	MJW Corporation	2013–2019
Milton J. Guiberteau	Greater Houston Radiology Associates	2010–2016
Raymond A. Guilmette	Lovelace Respiratory Research Institute	2009–2015
Roger W. Harms	Mayo Clinic	2009–2015
Martin Hauer-Jensen	University of Arkansas for Medical Sciences	2010–2016
Kathryn D. Held	Massachusetts General Hospital	2012–2018
Roger W. Howell	University of Medicine and Dentistry of New Jersey	2009–2015
Hank C. Jenkins-Smith	University of Oklahoma	2010–2016
Cynthia G. Jones	U.S. Nuclear Regulatory Commission	2011–2017
Timothy J. Jorgensen	Georgetown University Medical Center	2013–2019
William E. Kennedy, Jr.	Dade Moeller & Associates, Inc.	2010–2016
David C. Kocher	SENES Oak Ridge, Inc.	2011–2017
Amy Kronenberg	Lawrence Berkeley National Laboratory	2011–2017
Susan M. Langhorst	Washington University School of Medicine	2011–2017



John J. Lanza	Florida Department of Health	2010–2016
Edwin M. Leidholdt, Jr.	U.S. Department of Veterans Affairs	2012–2018
Martha S. Linet	National Cancer Institute	2010–2016
Jonathan M. Links	Johns Hopkins University Bloomberg School of Public Health	2011–2017
Jill A. Lipoti	Retired	2013–2019
Paul A. Locke	Johns Hopkins University	2010–2016
Ruth E. McBurney	Conference of Radiation Control Program Directors, Inc.	2013–2019
Charles W. Miller	Centers for Disease Control and Prevention	2012–2018
Donald L. Miller	Food and Drug Administration	2012–2018
William H. Miller	University of Missouri, Columbia	2011–2017
William F. Morgan	Pacific Northwest National Laboratory	2008–2014
Stephen V. Musolino	Brookhaven National Laboratory	2008–2014
Bruce A. Napier	Pacific Northwest National Laboratory	2008–2014
Gregory A. Nelson	Loma Linda University Medical Center	2012–2018
Wayne D. Newhauser	Louisiana State University	2013–2019
Andrea K. Ng	Harvard Medical School, Brigham & Women’s Hospital	2009–2015
Harald Paganetti	Massachusetts General Hospital	2012–2018
Carl J. Paperiello	Independent Consultant	2008–2014
David J. Pawel	U.S. Environmental Protection Agency	2011–2017
Terry C. Pellmar	Armed Forces Radiobiology Research Institute	2008–2014
R. Julian Preston	U.S. Environmental Protection Agency	2009–2015
Kathryn H. Pryor	Pacific Northwest National Laboratory	2010–2016
Sara Rockwell	Yale School of Medicine	2011–2017
Adela Salame-Alfie	New York State Department of Health	2009–2015
Ehsan Samei	Duke University Medical Center	2013–2019
Beth A. Schueler	Mayo Clinic	2009–2015
Debra M. Scroggs	Dade Moeller and Associates	2012–2018
J. Anthony Seibert	University of California Davis Medical Center	2008–2014
Stephen M. Seltzer	National Institute of Standards and Technology	2010–2016
George Sgouros	Johns Hopkins University School of Medicine	2013–2019
Steven L. Simon	National Cancer Institute	2010–2016
Christopher G. Soares	National Institute of Standards and Technology	2011–2017
Michael G. Stabin	Vanderbilt University	2010–2016
Daniel O. Stram	University of Southern California	2013–2019
Daniel J. Strom	Pacific Northwest National Laboratory	2008–2014
Steven G. Sutlief	VA Puget Sound Health Care System	2012–2018
Tammy P. Taylor	Pacific Northwest National Laboratory	2010–2016
Julie K. Timins	Diagnostic Radiology	2010–2016
Richard E. Toohey	M.H. Chew	2012–2018

Elizabeth L. Travis	MD Anderson Cancer Center	2009–2015
Louis K. Wagner	University of Texas-Houston Medical School	2010–2016
Michael M. Weil	Colorado State University	2011–2017
Chris G. Whipple	Environ	2013–2019
Robert C. Whitcomb, Jr.	Centers for Disease Control and Prevention	2008–2014
Stuart C. White	University of California, Los Angeles	2010–2016
Jacqueline P. Williams	University of Rochester Medical College	2012–2018
Gayle E. Woloschak	Northwestern University	2009–2015
Shiao Y. Woo	University of Louisville	2011–2017
X. George Xu	Rensselaer Polytechnic Institute	2008–2014
R. Craig Yoder	Landauer, Inc.	2008–2014
Gary H. Zeman	Argonne National Laboratory	2011–2017

Board of Directors

John D. Boice, Jr.	Donald P. Frush*	William F. Morgan
James A. Brink	Raymond A. Guilmette	Bruce A. Napier
Jerrold T. Bushberg	Kathryn D. Held	Kathryn H. Pryor*
Paul M. DeLuca	Paul A. Locke	Richard E. Toohey
	Ruth E. McBurney*	

*Newly elected to the Board of Directors on March 12, 2013.

Officers

President	John D. Boice, Jr.
Senior Vice President	Jerrold T. Bushberg
Secretary and Treasurer	James R. Cassata



Distinguished Emeritus Members

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 Warren K. Sinclair, *President Emeritus*
 Thomas S. Tenforde, *President Emeritus*
 S. James Adelstein, *Honorary Vice President*
 Kenneth R. Kase, *Honorary Vice President*
 William M. Beckner, *Executive Director Emeritus*
 W. Roger Ney, *Executive Director Emeritus*
 David A. Schauer, *Executive Director Emeritus*

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 William J. Bair
 Harold L. Beck
 Bruce B. Boecker
 Thomas B. Borak*
 Andre Bouville
 Leslie A. Braby*
 Robert L. Brent
 Antone L. Brooks
 Randall S. Caswell
 J. Donald Cossairt
 Gerald D. Dodd
 Sarah S. Donaldson
 William P. Dornsife
 Keith F. Eckerman
 Thomas S. Ely

Stephen A. Feig
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 Genevieve S. Roessler
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 Lawrence N. Rothenberg
 Henry D. Royal
 Michael T. Ryan
 William J. Schull
 Roy E. Shore
 Paul Slovic
 John E. Till
 Lawrence W. Townsend
 Robert L. Ullrich
 Arthur C. Upton
 Richard J. Vetter
 F. Ward Whicker
 Susan D. Wiltshire
 Marvin C. Ziskin

*Elected to Distinguished Emeritus Membership March 12, 2013.

Consociate Members

Full members of the Council become Consociate Members at the end of their terms provided they are not re-elected to another term on the Council or are not appointed to Distinguished Emeritus membership.

Peter R. Almond	Kenneth R. Foster	Peter C. Nowell
E. Stephen Amis, Jr.*	Everett G. Fuller	Eugene F. Oakberg
Larry E. Anderson	Arthur H. Gladstein	Gilbert S. Omenn
Mary M. Austin-Seymour	Barry B. Goldberg	Frank L. Parker
Charles M. Barnes	Robert L. Goldberg	Lester J. Peters
John W. Baum	Marvin Goldman	Ronald C. Petersen
Merrill A. Bender	Douglas Grahn	Adam Recht
B. Gordon Blaylock	Andrew J. Grosovsky	William C. Reinig
Frederick J. Bonte	Ellis M. Hall	Allan C.B. Richardson
Harold S. Boyne	Robert J. Hasterlik	Robert Robbins
John W. Brand	John M. Heslep	Lester Rogers
David J. Brenner	John W. Hirshfeld, Jr.	Robert E. Rowland
A. Bertrand Brill	David G. Hoel	Jonathan M. Samet
Thomas F. Budinger	George B. Hutchison	Keith J. Schiager
Patricia A. Buffler	Marylou Ingram	Robert A. Schlenker
William W. Burr, Jr.	A. Everette James, Jr.	Thomas M. Seed
Stephanie K. Carlson	John R. Johnson	Raymond Seltser
Paul L. Carson	James G. Kereiakes	Ferdinand J. Shore
Donald K. Chadwick	H. William Koch	Edward A. Sickles*
Charles E. Chambers*	Harold L. Kundel	Kenneth W. Skrable
Chung-Kwang Chou	Richard W. Leggett	David H. Sliney
Kelly L. Classic	George R. Leopold	James H. Sterner
Stephen F. Cleary	Howard L. Liber	Louise C. Strong
James E. Cleaver	James C. Lin	Herman D. Suit
Fred T. Cross	Thomas A. Lincoln	Richard A. Tell
Francis A. Cucinotta	David I. Livermore	Joop W. Thiessen
Stanley B. Curtis	Ray D. Lloyd	Ralph H. Thomas
Carter Denniston	Richard A. Luben	Lois B. Travis
John F. Dicello	Jay H. Lubin	Fong Y. Tsai
Richard L. Doan	Arthur C. Lucas	John C. Villforth
Carl H. Durney	Harry R. Maxon	Niel Wald
David A. Eastmond	C. Douglas Maynard	Daniel E. Wartenberg
Marc Edwards	Claire M. Mays	David A. Weber
Charles M. Eisenhauer	Cynthia H. McCollough	J. Frank Wilson
Joe A. Elder	Mortimer L. Mendelsohn	H. Rodney Withers
Edward R. Epp	Jack Miller	Andrew J. Wyrobek
Donald C. Fleckenstein	William A. Mills	Marco A. Zaider
H. Keith Florig	John E. Moulder	Pat B. Zanzonico

*Elected to Consociate Membership March 12, 2013.

Administrative Committees

Budget & Finance Committee (appointed by the Board of Directors, March 12, 2013)

Richard E. Toohey, *Chairman*

Jerrold T. Bushberg

Ruth E. McBurney

Terry C. Pellmar

R. Craig Yoder

Nominating Committee (appointed by the Board of Directors, March 12, 2013)

Amy Kronenberg, *Chairman*

Christine A. Donahue

Paul A. Locke

Donald L. Miller

Chris G. Whipple

Program Committee for 2014 Annual Meeting

(appointed by the Board of Directors, March 12, 2013)

Kenneth R. Kase, *Chairman*

John D. Boice, Jr., *Co-Chair*

Jerrold T. Bushberg, *Co-Chair*

James A. Brink

S. Y. Chen

Raymond A. Guilmette

Kathryn D. Held

John W. Poston, Sr.

Kathryn H. Pryor

Richard E. Toohey

Scientific and Administrative Staff

James R. Cassata	Executive Director
Laura J. Atwell	Office Manager, ICRU Assistant Executive Secretary
Bruce B. Boecker	Technical Staff Consultant
Sarah S. Cohen	Technical Staff Consultant
Steven R. Frey	Technical Staff Consultant
Joel E. Gray	Technical Staff Consultant
Michael P. Grissom	Technical Staff Consultant
Kenneth L. Groves	Technical Staff Consultant
Cindy L. O'Brien	Managing Editor
Terry C. Pellmar	Technical Staff Consultant
R. Julian Preston	Technical Staff Consultant
Marvin Rosenstein	Technical Staff Consultant
David A. Schauer	Executive Director Emeritus
Richard E. Toohey	Technical Staff Consultant
Myrna A. Young	Financial Records Manager

Program Area Committees and Advisory Panels

The program area and advisory committees advise the NCRP President and Board of Directors on issues specific to their expertise. They have responsibility for evaluating the need for new NCRP activities related to the philosophy and the basic principles and requirements in their subject areas.

The work of the Council is supported by seven program area committees and an advisory panel. They are:

Program Area Committees

Basic Criteria, Epidemiology, Radiobiology, and Risk	Kathryn D. Held
Operational Radiation Safety	Kathryn H. Pryor
Nuclear and Radiological Security and Safety	John W. Poston, Sr.
Radiation Protection in Medicine	James A. Brink
Environmental Radiation and Radioactive Waste Issues	S.Y. Chen
Radiation Measurements and Dosimetry	Raymond A. Guilmette
Radiation Education, Risk Communication, Outreach, and Policy	Paul A. Locke

Advisory Panel

Nonionizing Radiation

Vice Presidents

Each scientific program area committee is chaired by an NCRP Vice President. The Vice Presidents:

- Chair their program area committee
- Provide recommendations for new work in their area
- Represent NCRP to federal agencies and other potential supporters
- Represent NCRP at scientific meetings
- Advise on membership of their program area committee
- Assist NCRP President and chairmen of new scientific committees with selection of potential committee or advisory members
- Assist in management of scientific committee efforts
- Provide the chairman of the nominating committee with potential candidates for Council membership
- Review all draft publications within their program area committee prior to Council review

Basic Criteria, Epidemiology, Radiobiology, and Risk

Vice President, Kathryn D. Held

Key Functions of Program Area Committee (PAC) 1

- Evaluate and approve all NCRP scientific committee draft recommendations on exposure limits
- Evaluate new epidemiological and radiobiological data and determine their potential effect on human risk coefficients for radiation protection

Members of PAC 1

Kathryn D. Held, *Vice President*
Sally A. Amundson
Joel S. Bedford
Jonine Bernstein
Antone L. Brooks
Ann R. Kennedy
Amy Kronenberg
William F. Morgan
Gregory A. Nelson
Roy E. Shore
Daniel O. Stram
Julie E.K. Timins
Gayle E. Woloschak
John D. Boice, Jr., *NCRP Contact*

Active Scientific Committees Under PAC 1

SC 1-20 Biological Effectiveness of Photons as a Function of Energy

Status: Middle drafting stage

Steven L. Simon, *Chair*

Leslie A. Braby

Polly Y. Chang

Dudley Goodhead

Stephen C. Hora

David C. Kocher

Kiyohiko Mabuchi

Jerome S. Puskin

David Richardson

James D. Tucker

Eliseo Vano

Marvin Rosenstein, *Technical Staff Consultant*

SC 1-21 Multiplatform National Approach for Providing Guidance on Integrating Basic Science and Epidemiological Studies on Low-Dose Radiation Biological and Health Effects

Status: Preparing for PAC review

Sally A. Amundson, *Co-Chair*

Jonine L. Bernstein, *Co-Chair*

Keith F. Eckerman

Raymond A. Guilmette

Amy Kronenberg

Mark P. Little

William F. Morgan

Jac A. Nickoloff

Simon N. Powell

Daniel O. Stram

R. Julian Preston, *Consultant*

Terry C. Pellmar, *Technical Staff Consultant*

Marvin Rosenstein, *Technical Staff Consultant*

SC 1-22 Radiation Protection for Astronauts in Short-Term Missions

Status: Preparing for PAC review

Dudley T. Goodhead, *Co-Chair*

R. Julian Preston, *Co-Chair*

Patricia A. Fleming

Kathryn D. Held

Amy Kronenberg

Gregory A. Nelson

Walter Schimmerling

Roger P. Shaw

Michael M. Weil

Marvin Rosenstein, *Technical Staff Consultant*

SC 1-23 Guidance on Radiation Dose Limits for the Lens of the Eye

Status: Forming committee

Eleanor A. Blakely, *Co-Chair*

Lawrence T. Dauer, *Co-Chair*

SC 1-24 Radiation Exposures in Space and the Potential for Central Nervous System Effects

Status: Forming committee

Leslie A. Braby, *Co-Chair*

Richard S. Nowakowski, *Co-Chair*

Authorized but Unfunded Activities

- Lung cancer risks from inhaled radionuclides

Operational Radiation Safety

Vice President, Kathryn H. Pryor

Key Functions of Program Area Committee (PAC) 2

- Serve as a national resource for information on operational radiation safety
- Formulate guidance regarding the application of operational radiation safety principles

Members of PAC 2

Kathryn H. Pryor, *Vice President*
Edgar D. Bailey
Carol D. Berger
Mary L. Birch
John R. Frazier
Eric M. Goldin
David S. Myers
John W. Poston, Sr.
Glenn M. Sturchio
Joshua Walkowicz
James G. Yusko
John D. Boice, Jr., *NCRP Contact*

Active Scientific Committees Under PAC 2

SC 2-6 Radiation Safety Aspects of Nanotechnology

Status: Middle drafting stage

Mark D. Hoover, *Chair*

David S. Myers, *Vice Chair*

Raymond A. Guilmette

Leigh J. Cash

Wolfgang G. Kreyling

Gunter Oberdoerster

Rachel Smith

Bruce B. Boecker, *Technical Staff Consultant*

Michael P. Grissom, *Technical Staff Consultant*



SC 2-7 Radiation Safety of Sealed Radioactive Sources

Status: Early drafting stage

Kathryn H. Pryor, *Chair*

Edgar D. Bailey

Carol D. Berger

Mary L. Birch

John R. Frazier

Eric M. Goldin

David S. Myers

John W. Poston, Sr.

Glen M. Sturchio

Joshua Walkowicz

James L. Thompson, *Consultant*

Authorized but Unfunded Activities

- Air monitoring
- Operational radiation safety in medical fusion imaging procedures
- Design of facilities and installed equipment for handling unsealed radioactive materials
- Radiation protection guidelines for industrial accelerators and irradiators

Nuclear and Radiological Security and Safety

Vice President, John W. Poston, Sr.

Key Functions of Program Area Committee (PAC) 3

- Identify important steps to be taken in the interdiction of, preparedness for, and effective responses to possible acts of nuclear or radiological terrorism
- Define performance requirements, instrumentation, and testing criteria for security surveillance systems
- Develop operational strategies and optimization procedures for early, intermediate and late-phase responses to a nuclear or radiological terrorism incident
- Recommend effective methods for protecting against, mitigating, and treating traumatic injuries and long-term health and psychological effects of radiation exposure and other immediate stress effects such as thermal burns, shock, and contaminated shrapnel wounds resulting from a nuclear or radiological explosions to possible acts of nuclear or radiological terrorism
- Analyze methods for optimizing the cleanup, site restoration, and disposition of contaminated materials resulting from a nuclear or radiological terrorism incident
- Develop operational strategies and optimization procedures for early, intermediate and late-phase responses to a nuclear or radiological terrorism incident

Under a grant to NCRP from the Centers for Disease Control and Prevention, PAC 3 planned and conducted a Workshop/Table-Top Exercise that addressed the medical and public health aspects of a response to an improvised nuclear device terrorism scenario. This activity took place in Bethesda, Maryland on March 12–13 immediately following the 2013 NCRP Annual Meeting.

Members of PAC 3

John W. Poston, Jr., *Vice President*
Debra M. Scroggs, *Vice Chair*
Steven M. Becker
Brooke R. Buddemeier
Stephen V. Musolino
Terry C. Pellmar
Tammy P. Taylor
Leslie A. Braby, *Liaison*
Jerrold T. Bushberg, *Liaison*
Jill A. Lipoti, *Liaison*
Julie E.K. Timins, *Liaison*
John D. Boice, Jr., *NCRP Contact*

Radiation Protection in Medicine

Vice President, James A. Brink

Key Functions of Program Area Committee (PAC) 4

- Identify areas with which NCRP should be concerned in radiation protection of patients in medical, dental and chiropractic practice
- Examine and evaluate techniques and procedures to eliminate unnecessary radiation exposure to the patient
- Examine and evaluate training of medical personnel in radiation protection

Members of PAC 4

James A. Brink, *Vice President*
Donald L. Miller, *Co-Chair*
E. Stephen Amis
Stephen Balter
Jerrold T. Bushberg
John F. Cardella
Charles E. Chambers
Donald P. Frush
Ronald E. Goans
Marilyn J. Goske
Mannudeep K.S. Kalra
Linda A. Kroger
Edwin M. Leidholdt
Mahadevappa Mahesh
Fred A. Mettler, Jr.
Theodore L. Phillips
Ehsan Samei
J. Anthony Seibert
Steven G. Sutlief
Stuart C. White
Shiao Y. Woo
John D. Boice, Jr., *NCRP Contact*

Active Scientific Committees Under PAC 4

SC 4-5 **Radiation Protection in Dentistry Supplement: Cone Beam Computed Tomography, Digital Imaging and Handheld Dental Imaging**

Status: Early drafting stage

Alan G. Lurie, Co-Chair

Mel L. Kantor, *Co-Chair*

Mansur Ahmad

Veeratrishual Allareddy

John B. Ludlow

Edwin T. Parks

Eleonore D. Paunovich

Robert J. Pizzutiello

Robert A. Sauer

David C. Spelic

Edwin M. Leidholdt, *Consultant*

W. Doss McDavid, *Consultant*

Donald L. Miller, *Consultant*

Joel E. Gray, *Technical Staff Consultant*

SC 4-6 **Policies for Managing Substantial Dose Procedures and Deterministic Injuries Associated with Fluoroscopically-Guided Interventions**

Status: Early drafting stage

Stephen Balter, *Chair*

Jerrold T. Bushberg

Charles Chambers

Edwin M. Leidholdt

Donald L. Miller

John P. Winston

Completed in 2012

NCRP Report No. 174, *Preconception and Prenatal Radiation Exposure: Health Effects and Protective Guidance*, was completed in 2013. This Report was drafted by Scientific Committee 4-4 under the chairmanship of Robert L. Brent.

Authorized but Unfunded Activities

- Medical evaluation of workers
- Radiological protection standards and ethical issues in studies involving radiation exposure of human research subjects
- Revision of NCRP Report No. 102 on *Medical X-Rays, Electron Beam and Gamma-Ray Protection for Energies Up to 50 MeV* (1989)

Environmental Radiation and Radioactive Waste Issues

Vice President, S.Y. Chen

Key Functions of Program Area Committee (PAC) 5

- Serve as a national resource for environmental radiation and radioactive waste information and data
- Prepare scientific reports, commentaries and statements that can be used as fundamental scientific references dealing with radionuclides in the environment
- Help formulate NCRP recommendations on disposal of radioactive and mixed wastes
- Encourage scientific and technical discourse on the disposal of radioactive and mixed wastes including environmental and human risk from disposal
- Encourage scientific and technical discourse on the cost-benefit of activities generating radioactive and mixed wastes

Members of PAC 5

S.Y. Chen, *Vice President*
Mary E. Clark
Thomas Hinton
E. Vincent Holahan
Katherine A. Kiel
Jill A. Lipoti
Ruth E. McBurney
Bruce A. Napier
Carl J. Paperiello
Brian A. Powell
Andrew Wallo, III
Chris G. Whipple
John D. Boice, Jr., *NCRP Contact*

Active Scientific Committees Under PAC 5

SC 5-1 Approach to Optimizing Decision Making for Late-Phase Recovery from Nuclear or Radiological Terrorism Incidents

Status: Preparing for printer

S.Y. Chen, *Chair*

Daniel J. Barnett
Brooke R. Buddemeier
Vincent T. Covello
Katherine A. Kiel
Jill A. Lipoti
Debra M. Scroggs
Andrew Wallo, III
David J. Allard, *Advisor*
Jonathan D. Edwards, *Advisor*
Helen A. Grogan, *Advisor*
Anne F. Nisbet, *Advisor*
John J. Cardarelli, *Consultant*
John A. MacKinney, *Consultant*
Michael A. Noska, *Consultant*
Steven R. Frey, *Technical Staff Consultant*

Authorized but Unfunded Activities

- Assessment of measurement methodologies for environmental indicators of past releases (joint with PAC 6)
- Case studies and lessons learned from remediation of sites and facilities with radioactive contamination
- Clearance as a radiation protection strategy for radioactive material management
- Development of a risk assessment and risk management parameter handbook
- Radiation protection criteria for plants and animals
- Risk-based corrective actions in remediation of contaminated ecosystems
- Usage factors for environmental dose calculations

Radiation Measurements and Dosimetry

Vice President, Raymond A. Guilmette

Key Functions of Program Area Committee (PAC) 6

- Evaluate the field of radiation measurements and dosimetry
- Serve as a source of information to scientific committees preparing reports that include radiation measurements and dosimetry
- Maintain liaison with other organizations and professional societies that have similar interests

Members of PAC 6

Raymond A. Guilmette, *Vice President*
Luiz Bertelli
William F. Blakely
Wesley E. Bolch
Leslie A. Braby
John F. Dicello
Richard T. Kouzes
Steven L. Simon
Jeffrey J. Whicker
Gary H. Zeman
James R. Cassata, *NCRP Contact*

Active Scientific Committees Under PAC 6

SC 6-8 Operation TOMODACHI Radiation Dose Assessment Peer Review

Status: Preparing final report

John E. Till, *Chair*

A. Iulian Apostoaei

John D. Boice, Jr.

William E. Kennedy, Jr.

John R. Mercier, *Advisor*

Michael P. Grissom, *Technical Staff Consultant*

SC 6-9 U.S. Radiation Workers and Nuclear Weapons Test Participants Radiation

Dose Assessment

Status: Early drafting stage

Andre Bouville, *Chair*

Richard E. Toohey, *Co-Chair*

Harold L. Beck

James R. Cassata

Lawrence T. Dauer

Keith F. Eckerman

Derek Hagemeyer

Bruce A. Napier

Kathryn H. Pryor

Marvin Rosenstein

David A. Schauer

Daniel O. Stram

James L. Thompson

John E. Till

R. Craig Yoder

Cary Zeitlin

Richard W. Leggett, *Consultant*

Sami Sherbini, *Consultant*

Marvin Rosenstein, *Technical Staff Consultant*

Authorized but Unfunded Activities

- Aerosol measurements
- Biological dosimetry
- Requirements and methods for recording information for accurate dose reconstruction in nuclear or radiological incidents
- Update of Report 58, A Handbook of Radioactivity Measurements
- Wound model dose coefficients

Radiation Education, Risk Communication, Outreach, and Policy

Vice President, Paul A. Locke

Key Functions of Program Area Committee (PAC) 7

- identify the policy implications of NCRP publications, meetings and other events, and seek to communicate those implications in a credible and comprehensible manner to policy makers and the public;
- suggest members or serve as members of new NCRP scientific committees whose topics relate to education, risk communication, policy, and outreach;
- provide advice, wording, and strategic outreach options to policy makers and the public for NCRP reports;
- ensure that NCRP communications and outreach emphasize NCRP's paramount role in providing scientific information and develop communications and outreach strategies so that recommendations are of maximum assistance to policy makers; and
- bolster educational efforts aimed at recruiting, training and retaining radiation health professionals.

Members of PAC 7

Paul A. Locke, *Vice President*
John F. Ahearne
Steven M. Becker
Jerrold T. Bushberg
Francis X. Cameron
Hank C. Jenkins-Smith
Jill A. Lipoti
Charles W. Miller
William F. Morgan
Dennis O'Connor
Debra M. Scroggs
John E. Till
Julie E.K. Timins
John D. Boice, Jr., *NCRP Contact*

Nonionizing Radiation

Key Functions of Nonionizing Radiation Panel

- Analyze mechanisms of interaction of nonionizing radiation with biological systems, including humans
- Identify biological responses and potential human health effects
- Evaluate theoretical and applied aspects of dosimetry and exposure assessment of humans to nonionizing radiation
- Provide recommendations on acceptable exposure levels for nonionizing radiation in occupational, medical and public environments
- Analyze procedures for mitigating exposure in public and occupational settings

Members of Advisory Panel

Jerrold T. Bushberg
James E. Cleaver
Arthur W. Guy
David G. Hoel
James C. Lin
David H. Sliney
Jan A.J. Stolwijk
Richard A. Tell
Marvin C. Ziskin
John D. Boice, Jr., *NCRP Contact*

Collaborating Organizations

Organizations or groups of organizations that are national in interest and are concerned with scientific problems involving radiation quantities, units, measurements and effects, or radiation protection may be granted collaborating status by NCRP. Collaborating Organizations provide a means by which NCRP can gain input into its activities from a wider segment of society. At the same time, the relationships with the Collaborating Organizations facilitate wider dissemination of information about the Council's activities, interests and concerns. Collaborating Organizations have the opportunity to comment on draft documents at the time that drafts are submitted to the members of the Council. This is intended to capitalize on the fact that Collaborating Organizations are in an excellent position to both contribute to the identification of what needs to be treated in NCRP documents and to identify problems that might result from proposed recommendations. The Collaborating Organizations for the year 2013 are:

Organization	Contact Person
American Academy for Dermatology	Karen Collishaw, Robert O. Gorson
American Academy of Environmental Engineers	William C. Anderson
American Academy of Health Physics	Howard W. Dickson
American Academy of Orthopaedic Surgeons	Karen L. Hackett
American Association of Physicists in Medicine	Lynne Fairbent, Angela R. Keyser
American Brachytherapy Society	Rick Guggolz, Mark J. Rivard
American College of Cardiology	Rebecca Kelly Gretchen Wyatt
American College of Medical Physics	Lawrence N. Rothenberg
American College of Nuclear Physicians	Bennett Greenspan, Virginia Pappas
American College of Occupational and Environmental Medicine	Joel R. Bender, Thomas S. Ely
American College of Radiology	William T. Thorwarth
American Conference of Governmental Industrial Hygienists	James Price

American Dental Association	Kathleen O'Laughlin
American Industrial Hygiene Association	O. Gordon Banks, Irene Patrek
American Institute of Ultrasound in Medicine	Carmine M. Valente, Marvin C. Ziskin
American Medical Association	Barry Dickinson, James Lyznicki
American Nuclear Society	Bernard L. Cohen, Shawn Coyne-Naubett, Patricia Schroeder
American Pharmacists Association	Anne Burns
American Podiatric Medical Association	James Christina, Glenn B. Gastwirth
American Public Health Association	Georges C. Benjamin
American Radium Society	Ritsuko Komaki
American Roentgen Ray Society	James A. Brink
American Society for Radiation Oncology	Laura Thevenot
American Society of Emergency Radiology	Stephen R. Baker
American Society of Health-System Pharmacists	Henri Manasse, Jr.
American Society of Nuclear Cardiology	Beth Hodge
American Society of Radiologic Technologists	F. Lynn May, Greg Morrison
American Thyroid Association	Barbara Smith
Association of Educators in Imaging and Radiological Sciences	Valerie Christensen
Association of University Radiologists	Josette Szalko
Bioelectromagnetics Society	Stefan Engstrom, Gloria Parsley
Campus Radiation Safety Officers	Ninni Jacob
College of American Pathologists	Myron Pollycove, Lee Van Breman
Conference of Radiation Control Program Directors, Inc.	David Allard, Ruth McBurney
Council on Radionuclides and Radiopharmaceuticals	Henry Kramer, Leonard R. Smith
Defense Threat Reduction Agency	Paul K. Blake
Electric Power Research Institute	Kurt E. Yeager



Federal Aviation Administration	Wallace Friedberg, Frederick Tilton
Federal Communications Commission	Robert F. Cleveland, Jr.
Federal Emergency Management Agency	Vanessa Quinn
Genetics Society of America	Seymour Abrahamson
Health Physics Society	President, Brett J. Burk
Institute of Electrical and Electronics Engineers, Inc.	Ronald C. Petersen, Mary Ward-Callan
Institute of Nuclear Power Operations	Jeff Place
International Brotherhood of Electrical Workers	William F. Paul
International Society of Exposure Science	Tina Bahadori
National Aeronautics and Space Administration	NASA Administrator
National Association of Environmental Professionals	Clay E. Easterly
National Center for Environmental Health / Agency for Toxic Substances and Disease Registry	Sam Keith
National Electrical Manufacturers Association	Stephen Vastagh
National Institute for Occupational Safety and Health	William G. Lotz
National Institute of Standards and Technology	Alan Thompson, James Turner
Nuclear Energy Institute	Ralph Andersen
Office of Science and Technology	John Holdren
Paper, Allied-Industrial, Chemical and Energy Workers International Union	Mark Griffon, Herman Potter
Product Stewardship Institute	Scott Cassel
Radiation Research Society	Martin Brown
Radiological Society of North America	Mark Watson
Society for Cardiovascular Angiography and Interventions	Charles Chambers, Wayne Powell, Bonnie H. Weiner
Society for Pediatric Radiology	Marilyn J. Goske
Society for Risk Analysis	Robin Cantor
Society of Cardiovascular Computed Tomography	President, Carrie Kovar
Society of Chairmen of Academic Radiology Departments	Lise Swanson
Society of Interventional Radiology	Stephen Balter, Debbie Katsarelis

Society of Nuclear Medicine and Molecular Imaging	Fred Fahey, Virginia Pappas
Society of Radiologists in Ultrasound	Susan Roberts
Society of Skeletal Radiology	David Rubin
U.S. Air Force	Ramachandra K. Bhat
U.S. Army	Surgeon General U.S. Army, Robert Eng
U.S. Coast Guard	Michael Adess
U.S. Department of Energy	Secretary of DOE
U.S. Department of Housing and Urban Development	Secretary of HUD
U.S. Department of Labor	Secretary of DOL
U.S. Department of Transportation	Richard W. Boyle
U.S. Environmental Protection Agency	EPA Administrator, Michael Flynn
U.S. Navy	Chairman, Navy Radiation Safety Committee
U.S. Nuclear Regulatory Commission	NRC Chairman, Terry Brock
U.S. Public Health Service	Petro Shandruk
Utility Workers Union of America	John M. Walsh, Jr.

Special Liaison Organizations

Special Liaison relationships are established with various organizations outside of the United States that have an interest in radiation protection and measurements. This relationship provides: (1) an opportunity for participating organizations to designate an individual to provide liaison between the organization and NCRP; (2) that the individual designated will receive copies of draft NCRP publications (at the time that these are submitted to the members of the Council) with an invitation to comment but not vote; and (3) that new NCRP efforts might be discussed with liaison individuals as appropriate, so that they might have an opportunity to make suggestions on new studies and related matters. The Special Liaison Organizations for 2013 are:

Organization	Contact Person
Australian Radiation Protection and Nuclear Safety Agency	Keith H. Lokan
Bundesamt für Strahlenschutz (Germany) (Federal Office for Radiation Protection)	Wolfram König
Canadian Association of Medical Radiation Technologists	Charles A. Shields
Canadian Nuclear Safety Commission	J.K. Pereira
Central Laboratory for Radiological Protection (Poland)	Slawomir Sterlinski
China Institute for Radiation Protection	Huating Yang
Commissariat à l'Énergie Atomique (France)	Jean-François Lecomte
Commonwealth Scientific Instrumentation Research Organization (Australia)	Stan Barnett
European Commission	Hans Forsström
Heads of the European Radiological Protection Competent Authorities	Olvido Guzman
Health Council of the Netherlands	A. Wijkbenga
Health Protection Agency	John Cooper
International Commission on Non-Ionizing Radiation Protection	Paolo Vecchia
International Commission on Radiation Units and Measurements	Hans G. Menzel
International Commission on Radiological Protection	Claire Cousins
International Radiation Protection Association	Renate Czarwinski
Japan Radiation Council	Yasuhito Sasaki

Korea Institute of Nuclear Safety	Kwang Sik Choi
Nuclear Safety Commission of Japan	Atsuyuki Suzuki
Russian Scientific Commission on Radiation Protection	Anatoly F. Tsyb*
South African Forum for Radiation Protection	D. van As
World Association for Nuclear Operators	Edgar Hux
World Health Organization, Unit of Radiation and Environmental Health	Zhanat Carr

*Died in 2013.

Corporate Sponsors

The Corporate Sponsor's Program facilitates the interchange of information and ideas, and corporate sponsors provide valuable fiscal support for the NCRP program. The Corporate Sponsors for 2013 are:

Organization

3M
Global Dosimetry Solutions
Landauer, Inc.
Nuclear Energy Institute

Contact Person

Frederick Entwistle
Sander Perle
R. Craig Yoder
Ralph L. Andersen

Review Process

The review process for draft publications is elaborate and comprehensive. It begins with a review by a group of critical reviewers designated by the appropriate Program Area Committee Vice President and the NCRP Secretariat. Second, following modification of the draft on the basis of the comments of the critical reviewers, the publication is submitted for review to the full Council membership (100), Distinguished Emeritus Members (69), Collaborating Organizations (79), and Special Liaison Organizations (23). At the time a draft is submitted for Council review it is also placed on NCRP's website for public comment (<http://NCRPonline.org>). Further modification of draft reports on the basis of the comments received follows, with the goal of reaching a scientific consensus on the material included in the report. An NCRP report can be released for publication by the President only if there are no more than two remaining disapprovals by members of the Council after resolution of review comments.

In addition to full reports, NCRP also produces statements, commentaries, and presidential reports. Statements are brief documents (usually four or fewer pages) that succinctly address topics of contemporary interest and importance for radiation protection. The review and approval process for statements is the same as for reports. NCRP commentaries are documents that provide preliminary evaluations, critiques, reviews and results of exploratory studies, or extensions of previously published NCRP reports on an accelerated schedule when time for the normal review process is not available. Approval is by the Board of Directors with involvement by other Council members to an extent dependent on the time available. Presidential reports are documents on specific issues in radiation health protection that are developed by a scientific committee, reviewed by members of Council and other subject-area experts as needed, and approved for publication by the Board of Directors and the President.

Lauriston S. Taylor Lectures

Year	Title	Lecturer
2013	When Does Risk Assessment Get Fuzzy?	John E. Till
2012	From the Field to the Laboratory and Back: The <i>What Ifs</i> , <i>Wows</i> , and <i>Who Cares</i> of Radiation Biology	Antone L. Brooks
2011	What Makes Particle Radiation so Effective?	Eleanor A. Blakely
2010	Radiation Protection and Public Policy in an Uncertain World	Charles E. Land
2009	Radiation Epidemiology: The Golden Age and Remaining Challenges	John D. Boice, Jr.
2008	Radiation Standards, Dose/Risk Assessments, Public Interactions, and Yucca Mountain: Thinking Outside the Box	Dade W. Moeller
2007	The Quest for Therapeutic Actinide Chelators	Patricia W. Durbin
2006	Fifty Years of Scientific Investigation: The Importance of Scholarship and the Influence of Politics and Controversy	Robert L. Brent
2005	Nontargeted Effects of Radiation: Implications for Low-Dose Exposures	John B. Little
2004	Radiation Protection in the Aftermath of a Terrorist Attack Involving Exposure to Ionizing Radiation	Abel J. Gonzalez
2003	The Evolution of Radiation Protection: From Erythema to Genetic Risks to Risks of Cancer to ?	Charles B. Meinhold
2002	Developing Mechanistic Data for Incorporation into Cancer Risk Assessment: Old Problems and New Approaches	R. Julian Preston
2001	Assuring the Safety of Medical Diagnostic Ultrasound	Wesley L. Nyborg
2000	Administered Radioactivity: <i>Unde Venimus Quoquo Imus</i>	S. James Adelstein
1999	Back to Background	Naomi H. Harley
1998	From Chimney Sweeps to Astronauts: Cancer Risks in the Work Place	Eric J. Hall
1997	Radionuclides in the Body: Meeting the Challenge	William J. Bair

1996	70 Years of Radiation Genetics: Fruit Flies, Mice and Humans	Seymour Abrahamson
1995	Certainty and Uncertainty in Radiation Research	Albrecht M. Kellerer
1994	Mice, Myths, and Men	R.J. Michael Fry
1993	Science, Radiation Protection and the NCRP	Warren K. Sinclair
1992	Dose and Risk in Diagnostic Radiology: How Big? How Little?	Edward W. Webster
1991	When is a Dose Not a Dose?	Victor P. Bond
1990	Radiation Protection and the Internal Emitter Saga	J. Newell Stannard
1989	Radiobiology and Radiation Protection: The Past Century and Prospects for the Future	Arthur C. Upton
1988	How Safe is Safe Enough?	Bo Lindell
1987	How to be Quantitative about Radiation Risk Estimates	Seymour Jablon
1986	Biological Effects on Non-Ionizing Radiations: Cellular Properties and Interactions	Herman P. Schwan
1985	Truth (and Beauty) in Radiation Measurements	John H. Harley
1984	Limitation and Assessment in Radiation Protection	Harald H. Rossi
1983	The Human Environment—Past, Present and Future	Merril Eisenbud
1982	Ethics, Trade-Offs and Medical Radiation	Eugene L. Saenger
1981	How Well Can We Assess Genetic Risk? Not Very	James F. Crow
1980	From “Quantity of Radiation” and “Dose” to “Exposure” and “Absorbed Dose”—An Historical Review	Harold O. Wyckoff
1979	Radiation Protection—Concepts and Trade Offs	Hymer L. Friedell
1978	Why be Quantitative About Radiation Risk Estimates?	Sir Edward Pochin
1977	The Squares of the Natural Numbers in Radiation Protection	Herbert M. Parker

Annual Meetings

Year	Topic
2013	Radiation Dose and the Impacts on Exposed Populations
2012	Emerging Issues in Radiation Protection in Medicine, Emergency Response, and the Nuclear Fuel Cycle
2011	Scientific and Policy Challenges of Particle Radiations in Medical Therapy and Space Missions
2010	Communication of Radiation Benefits and Risks in Decision Making
2009	Future of Nuclear Power Worldwide: Safety, Health and Environment
2008	Low Dose and Low Dose-Rate Radiation Effects and Models
2007	Advances in Radiation Protection in Medicine
2006	Chernobyl at Twenty
2005	Managing the Disposition of Low-Activity Radioactive Materials
2004	Advances in Consequence Management for Radiological Terrorism Events
2003	Radiation Protection at the Beginning of the 21st Century—A Look Forward
2002	Where the New Biology Meets Epidemiology: Impact on Radiation Risk Estimates
2001	Fallout from Atmospheric Nuclear Tests—Impact on Science and Society
2000	Ionizing Radiation Science and Protection in the 21st Century
1999	Radiation Protection in Medicine: Contemporary Issues
1998	Cosmic Radiation Exposure of Airline Crews, Passengers and Astronauts
1997	The Effects of Pre- and Postconception Exposure to Radiation
1996	Implications of New Data on Radiation Cancer Risk
1995	Environmental Dose Reconstruction and Risk Implications
1994	Extremely-Low-Frequency Electromagnetic Fields: Issues in Biological Effects and Public Health
1993	Radiation Science and Societal Decision Making
1992	Radiation Protection in Medicine
1991	Genes, Cancer and Radiation Protection
1990	Health and Ecological Implications of Radioactively Contaminated Environments

- 1989 Radiation Protection Today—The NCRP at Sixty Years
- 1988 Radon
- 1987 New Dosimetry at Hiroshima and Nagasaki and Its Implications for Risk Estimates
- 1986 Nonionizing Electromagnetic Radiations and Ultrasound
- 1985 Radioactive Waste
- 1984 Some Issues Important in Developing Basic Radiation Protection Recommendations
- 1983 Environmental Radioactivity
- 1982 Radiation Protection and New Medical Diagnostic Approaches
- 1981 Critical Issues in Setting Radiation Dose Limits
- 1980 Quantitative Risk in Standards Setting
- 1979 Perceptions of Risk

2013 Annual Meeting

The Forty-Ninth Annual Meeting of NCRP was held March 11–12, 2013 at the Hyatt Regency Bethesda in Bethesda, Maryland. The topic of the meeting was *Radiation Dose and the Impacts on Exposed Populations*. The sessions and presentations were as follows:

Tenth Annual Warren K. Sinclair Keynote Address

Fukushima Nuclear Power Plant Accident and Comprehensive Health Risk Management, Shunichi Yamashita

Overview

Exposed Populations: Who Are They?, Steven L. Simon

Why Study Radiation-Exposed Populations?, Martha S. Linet

Radiation Impacts on Human Health: Certain, Fuzzy and Unknown, Roy E. Shore

Emotional Consequences of Nuclear Power Plant Disasters, Evelyn Bromet

Medical

Exposed Medical Staff: Challenges, Available Tools, and Opportunities for Improvement, Lawrence T. Dauer

Dose Tracking and Rational Exam Selection for the Medically-Exposed Population, James A. Brink

Second Malignant Neoplasms and Cardiovascular Disease Following Radiotherapy, Lois B. Travis

Worker Exposures

Characterization of Exposures to Workers Covered Under the U.S. Energy Employees Compensation Act, James W. Neton

Increased Occupational Exposures: Nuclear Industry Workers, Andre Bouville
Radiation Exposure of U.S. Military Individuals, Paul K. Blake

Thirty-Seventh Lauriston S. Taylor Lecture on Radiation Protection and Measurements

When Does Risk Assessment Get Fuzzy?, John E. Till

Public Exposures

Impact on the Japanese Atomic- Bomb Survivors of Radiation Received from the Bombs, Harry M. Cullings

Joint U.S./Russian Studies of Population Exposures Resulting from Nuclear Production Activities in the Southern Urals, Bruce A. Napier

Populations Living Near Nuclear Power Plants, Daniel O. Stram

Nuclear Reactor Accidents: Exposures and Health Effects Among Members of the Public, Maureen Hatch

Summary

Implications of Radiation Dose and Exposed Populations on Radiation Protection in the 21st Century, John D. Boice, Jr.

Serving on the Program Committee for the 2013 Annual Meeting were: *Co-Chairs*, S.Y. Chen and Bruce A. Napier; *Members*: Christopher H. Clement, Barrett Fountos, Kathryn D. Held, Paul A. Locke, David J. Pawel, Kazuo Sakai, Steven L. Simon, John E. Till, and Shunichi Yamashita. The proceedings of the 2013 Annual Meeting will be published in *Health Physics*.

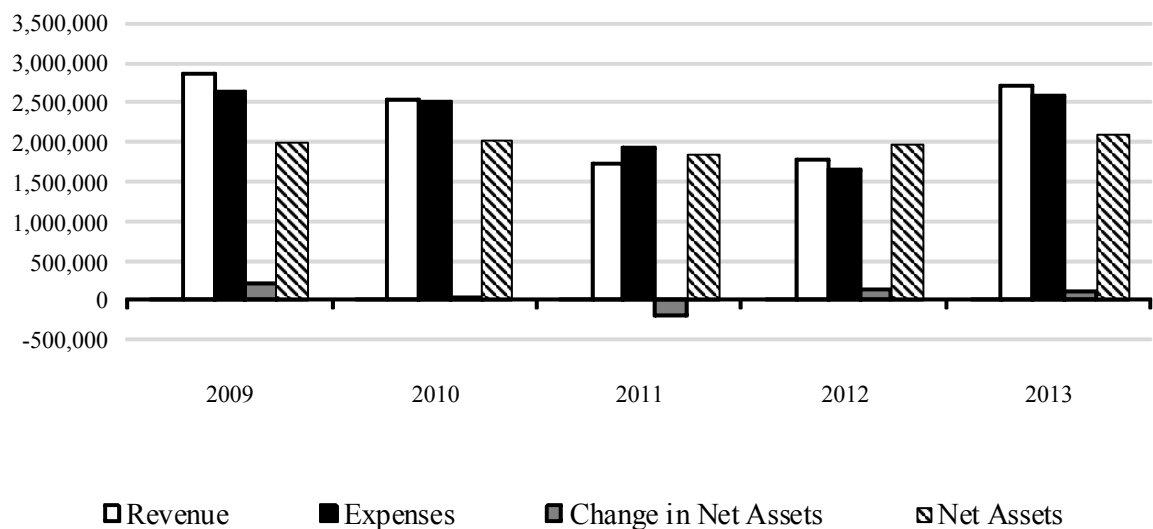
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Financial Summary

The table and bar graph presented below exhibit NCRP’s year-end financial data for 2013 and the four preceding years in the categories: (1) total revenue from grants, contracts, contributions, corporate sponsorships, contributed professional services, administrative services, sales of publications, and investments; (2) total operating and investment expenses; (3) change in net assets of the corporation; and (4) net assets.

Year	Revenue	Expenses	Change in Net Assets	Net Assets
2009	2,854,973	2,645,035	209,938	1,975,274
2010	2,535,213	2,505,323	29,890	2,005,164
2011	1,725,326	1,916,162	(190,836)	1,814,328
2012	1,776,001	1,638,754	137,247	1,951,574
2013	2,704,013	2,594,840	109,173	2,060,747



Appendix 1. Finances

Exhibit A Statement of Financial Position For the year ended December 31, 2013 (unaudited)

Current Assets

Cash and cash equivalents	\$ 79,700
Investments [at market]	1,894,084
Accounts receivable:	
Publications [net of allowance of \$155]	5,641
Grants and contracts	78,969
International Commission on Radiation Units and Measurements	1,309
Inventory—publications	309,515
Prepaid expenses and other assets	21,879
Total current assets	<u>2,391,097</u>

Property and Equipment [at cost]

Furniture and equipment	154,828
Less accumulated depreciation	138,480
Total property and equipment	<u>16,348</u>

TOTAL ASSETS \$ 2,407,445

Liabilities

Line of credit	\$ 32,000
Accounts payable and accrued expenses	144,152
Total current liabilities	<u>176,152</u>

Other Liabilities

Deferred rent liability	15,763
Accrued post-retirement benefits	154,783
Total other liabilities	<u>170,546</u>

TOTAL LIABILITIES 346,698

Net Assets



Unrestricted:	
Undesignated	147,676
Board designated	1,683,365
Temporarily restricted	194,706
Permanently restricted	35,000
TOTAL NET ASSETS	<u>2,060,747</u>
TOTAL LIABILITIES AND NET ASSETS	<u><u>\$ 2,407,445</u></u>

Exhibit B Statement of Activities For the year ended December 31, 2013 (unaudited)

	Unrestricted	Temporarily Restricted	Permanently Restricted	Total
Revenue and Other Increases				
Contracts and grants	\$ 1,865,795	\$ —	\$ —	\$ 1,865,795
Contributions	95,066	14,500	—	109,566
Corporate sponsorship	40,000	—	—	40,000
Contributed professional services	266,475	—	—	266,475
Sales of publications	206,023	—	—	206,023
Dividends and interest	55,249	6,601	—	61,850
Net realized and unrealized gain on investments	129,209	8,842	—	138,051
Professional and administrative services	16,253	—	—	16,253
Total revenue and other increases	2,674,070	29,943	—	2,704,013
Expenses and other decreases				
Program costs:				
Contracts and grants	1,362,954	—	—	1,362,954
Publications	83,984	—	—	83,984
Contributed professional services	266,475	—	—	266,475
Total program costs	1,713,413	—	—	1,713,413
Management and general expenses	890,433	—	—	890,433
Total expenses	2,603,846	—	—	2,603,846
Investment fees	15,458	1,244	—	16,702
Post-retirement benefit change	(25,708)	—	—	(25,708)
	2,593,596	1,244	—	2,594,840
Change in Net Assets	80,474	28,699	—	109,173
Net Assets at Beginning of Year	1,750,567	166,007	35,000	1,951,574
Net Assets at End of Year	1,831,041	194,706	35,000	2,060,747



Exhibit C
Statement of Cash Flow
For the year ended December 31, 2013
(unaudited)

Cash flows from operating activities:	
Change in net assets	\$ 109,173
Adjustments to reconcile change in net assets to cash provided by operating activities	
Depreciation	9,558
Net realized and unrealized gain on investments	(138,051)
(Increase) decrease in assets:	
Accounts receivable	152,934
Inventory—publications	(6,758)
Prepaid expenses and other assets	(6,933)
Increase (decrease) in liabilities:	
Accounts payable and accrued expenses	(111,051)
Deferred rent liability	(5,918)
Accrued post-retirement benefits	(25,708)
Net cash used by operating activities	<u>(22,754)</u>
Cash flows from investing activities:	
Purchase of equipment	(11,578)
Purchase of investments	(666,264)
Sale of investments	610,051
Net cash used by investing activities	<u>(67,791)</u>
Cash flows from financing activities:	
Net borrowings on line of credit	32,000
Net decrease in cash and cash equivalents	<u>(58,545)</u>
Cash and cash equivalents at beginning of year	<u>138,245</u>
Cash and cash equivalents at end of year	<u><u>\$ 79,700</u></u>

Schedule 1 Schedule of Contracts and Grants Revenue For the year ended December 31, 2013

(unaudited)

Contracts

Defense Threat Reduction Agency	\$ 74,114
Department of Homeland Security	90,564
U.S. Food and Drug Administration	5,694

Total contracts 170,372

Grants

Centers for Disease Control and Prevention	220,305
Department of Energy	1,475,118

Total grants 1,695,423

Total contracts and grants revenue \$ 1,865,795



Schedule 2
Schedule of Contributions & Corporate Sponsorship Revenue
For the year ended December 31, 2013

(unaudited)

Contributions

American Academy of Health Physics	\$ 1,000
American Association of Physicists in Medicine	5,000
American College of Radiology Foundation	25,000
American Roentgen Ray Society	7,500
American Society for Radiation Oncology	3,000
American Society of Radiologic Technologists	6,000
Council on Radionuclides and Radiopharmaceuticals	2,500
Health Physics Society	12,000
Individuals	1,066
Landauer, Inc.	3,000
Lillian and Robert Brent Fund	1,500
Radiological Society of North America	25,000
Society of Nuclear Medicine	2,500

Total contributions	\$ 95,066
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Corporate Sponsors

3M	\$ 5,000
Landauer, Inc.	10,000
Mirion Technologies (GDS), Inc.	5,000
Nuclear Energy Institute*	20,000

Total Corporate Sponsors	\$ 40,000
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*Contribution pledged in 2012 but received in January 2013.

Appendix 2. Publications

Distribution of NCRP Publications

(during the period May 16, 1931 through December 31, 2013)

No.	Title and Year of Publication	Number of Copies Distributed				
		Government Printing Office ^a	NCRP Publications ^b		Total NCRP Publications	All Sources Combined
			2013			
		Hardcopy	E-Pub			
NCRP Reports						
174	Preconception and Prenatal Radiation Exposure: Health Effects and Protective Guidance (2013)	__d	123	74	197	197
173	Investigation of Radiological Incidents (2012)	__d	65	34	218	218
172	Reference Levels and Achievable Doses in Medical and Dental Imaging: Recommendations for the United States (2012)	__d	114	125	410	410
171	Uncertainties in the Estimation of Radiation Risks and Probability of Disease Causation (2012)	__d	50	35	238	238
170	Second Primary Cancers and Cardiovascular Disease After Radiation Therapy (2011)	__d	38	22	218	218
169	Design of Effective Radiological Effluent Monitoring and Environmental Surveillance Programs (2010)	__d	26	18	195	195
168	Radiation Dose Management for Fluoroscopically-Guided Interventional Medical Procedures (2010)	__d	46	34	721	721
167	Potential Impact of Genetic Susceptibility and Previous Radiation Exposure on Radiation Risk for Astronauts (2010)	__d	12	9	161	161
166	Population Monitoring and Radionuclide Decorporation Following a Radiological or Nuclear Incident (2010)	__d	19	20	317	317
165	Responding to a Radiological or Nuclear Terrorism Incident: A Guide for Decision Makers (2010)	__d	22	25	735	735
164	Uncertainties in Internal Radiation Dosimetry (2009)	__d	0	14	170	170
163	Radiation Dose Reconstruction: Principles and Practices (2009)	__d	15	10	341	341
162	Self Assessment of Radiation-Safety Programs (2009)	__d	20	15	526	526
161	Management of Persons Contaminated with Radionuclides (2009)	__d	55	48	1,225	1,225

No.	Title and Year of Publication	Number of Copies Distributed				
		Government Printing Office ^a	NCRP Publications ^b		Total NCRP Publications	All Sources Combined
			2013			
			Hardcopy	E-Pub		
160	Ionizing Radiation Exposure of the Population of the United States (2009)	__d	113	54	1,546	1,546
159	Risk to the Thyroid from Ionizing Radiation (2008)	__d	12	7	282	282
158	Uncertainties in the Measurement and Dosimetry of External Radiation (2007)	__d	7	7	709	709
157	Radiation Protection in Educational Institutions (2007)	__d	7	7	862	862
156	Development of a Biokinetic Model for Radionuclide-Contaminated Wounds and Procedures for Their Assessment, Dosimetry and Treatment (2006)	__d	9	8	779	779
155	Management of Radionuclide Therapy Patients (2006)	__d	28	22	1,143	1,143
154	Cesium-137 in the Environment: Radioecology and Approaches to Assessment and Management (2006)	__d	8	8	590	590
153	Information Needed to Make Radiation Protection Recommendations for Space Missions Beyond Low-Earth Orbit (2006)	__d	9	7	715	715
152	Performance Assessment of Near-Surface Facilities for Disposal of Low-Level Radioactive Waste (2005)	__d	4	5	585	585
151	Structural Shielding Design and Evaluation for Megavoltage X- and Gamma-Ray Radiotherapy Facilities (2005)	__d	66	38	3,476	3,476
150	Extrapolation of Radiation-Induced Cancer Risks from Nonhuman Experimental Systems to Humans (2005)	__d	5	4	719	719
149	A Guide to Mammography and Other Breast Imaging Procedures (2004)	__d	6	8	1,166	1,166
148	Radiation Protection in Veterinary Medicine (2004)	__d	23	21	1,216	1,216
147	Structural Shielding Design for Medical X-Ray Imaging Facilities (2004)	__d	41	62	4,363	4,363
	Compact disk version of Report No. 147	__d	0	0	143	143
146	Approaches to Risk Management in Remediation of Radioactively Contaminated Sites (2004)	__d	3	4	1,107	1,107
145	Radiation Protection in Dentistry (2003)	__d	33	52	2,302	2,302
144	Radiation Protection for Particle Accelerator Facilities (2003)	__d	24	22	2,204	2,204
143	Management Techniques for Laboratories and Other Small Institutional Generators to Minimize Off-Site Disposal of Low-Level Radioactive Waste (2003)	__d	3	4	734	734
142	Operational Radiation Safety Program for Astronauts in Low-Earth Orbit: A Basic Framework (2002)	__d	7	6	1,156	1,156
141	Managing Potentially Radioactive Scrap Metal (2002)	__d	5	3	1,241	1,241

No.	Title and Year of Publication	Number of Copies Distributed				
		Government Printing Office ^a	NCRP Publications ^b		Total NCRP Publications	All Sources Combined
			2013			
			Hardcopy	E-Pub		
140	Exposure Criteria for Medical Diagnostic Ultrasound: II. Criteria Based on All Known Mechanisms (2002)	__d	5	5	817	817
139	Risk-Based Classification of Radioactive and Hazardous Chemical Wastes (2002)	__d	4	4	994	994
138	Management of Terrorist Events Involving Radioactive Material (2001)	__d	12	8	7,588	7,588
137	Fluence-Based and Microdosimetric Event-Based Methods for Radiation Protection in Space (2001)	__d	4	4	780	780
136	Evaluation of the Linear-Nonthreshold Dose-Response Model for Ionizing Radiation (2001)	__d	9	5	1,382	1,382
135	Liver Cancer Risk from Internally-Deposited Radionuclides (2001)	__d	2	3	1,120	1,120
134	Operational Radiation Safety Training (2000)	__d	5	7	1,352	1,352
133	Radiation Protection for Procedures Performed Outside the Radiology Department (2000)	__d	7	11	1,703	1,703
132	Radiation Protection Guidance for Activities in Low-Earth Orbit (2000)	__d	7	6	1,038	1,038
131	Scientific Basis for Evaluating the Risks to Populations from Space Applications of Plutonium (2001)	__d	4	3	803	803
130	Biological Effects and Exposure Limits for “Hot Particles” (1999)	__d	8	4	1,140	1,140
129	Recommended Screening Limits for Contaminated Surface Soil and Review of Factors Relevant to Site-Specific Studies (1999)	__d	3	3	1,683	1,683
128	Radionuclide Exposure of the Embryo/Fetus (1998)	__d	8	9	1,604	1,604
127	Operational Radiation Safety Program (1998)	__d	26	11	2,366	2,366
126	Uncertainties in Fatal Cancer Risk Estimates Used in Radiation Protection (1997)	__d	5	3	1,895	1,895
125	Deposition, Retention and Dosimetry of Inhaled Radioactive Substances (1997)	__d	5	4	2,564	2,564
124	Sources and Magnitude of Occupational and Public Exposures from Nuclear Medicine Procedures (1996)	__d	9	19	3,194	3,194
123	Screening Models for Releases of Radionuclides to Atmosphere, Surface Water, and Ground (1996)	__d	16	28	3,189	3,189
122	Use of Personal Monitors to Estimate Effective Dose Equivalent and Effective Dose to Workers for External Exposure to Low-LET Radiation (1995)	__d	38	10	3,341	3,341
121	Principles and Application of Collective Dose in Radiation Protection (1995)	__d	4	8	2,462	2,462

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			2013			
			Hardcopy	E-Pub		
120	Dose Control at Nuclear Power Plants (1994)	__d	2	2	3,005	3,005
119	A Practical Guide to the Determination of Human Exposure to Radiofrequency Fields (1993)	__d	5	4	3,508	3,508
118	Radiation Protection in the Mineral Extraction Industry (1993)	__d	6	4	2,643	2,643
117	Research Needs for Radiation Protection (1993)	__d	5	5	1,955	1,955
116	Limitation of Exposure to Ionizing Radiation (1993)	__d	49	30	7,263	7,263
115	Risk Estimates for Radiation Protection (1993)	__d	16	8	3,176	3,176
114	Maintaining Radiation Protection Records (1992)	__d	4	3	2,466	2,466
113	Exposure Criteria for Medical Diagnostic Ultrasound: I. Criteria Based on Thermal Mechanisms (1992)	__d	4	5	3,287	3,287
112	Calibration of Survey Instruments Used in Radiation Protection for the Assessment of Ionizing Radiation Fields and Radioactive Surface Contamination (1991)	__d	6	4	3,839	3,839
111	Developing Radiation Emergency Plans for Academic, Medical and Industrial Facilities (1991)	__d	4	3	4,081	4,081
110	Some Aspects of Strontium Radiobiology (1991)	__d	2	4	2,567	2,567
109	Effects of Ionizing Radiation on Aquatic Organisms (1991)	__d	2	4	2,206	2,206
108	Conceptual Basis for Calculations of Absorbed-Dose Distributions (1991)	__d	3	5	3,136	3,136
107	Implementation of the Principle of As Low As Reasonably Achievable (ALARA) for Medical and Dental Personnel (1990)	__d	6	9	3,384	3,384
106	Limit for Exposure to "Hot Particles" on the Skin (1990)	__d	3	5	2,883	2,883
105	Radiation Protection for Medical and Allied Health Personnel (1989)	__d	7	14	6,820	6,820
104	The Relative Biological Effectiveness of Radiations of Different Quality (1990)	__d	2	4	2,416	2,416
103	Control of Radon in Houses (1989)	__d	3	2	3,765	3,765
102	Medical X-Ray, Electron Beam and Gamma-Ray Protection for Energies up to 50 MeV (Equipment Design, Performance and Use) (1989)	__d	12	22	7,792	7,792
101	Exposure of the U.S. Population from Occupational Radiation (1989)	__d	3	2	4,163	4,163
100	Exposure of the U.S. Population from Diagnostic Medical Radiation (1989)	__d	3	4	4,981	4,981
99	Quality Assurance for Diagnostic Imaging (1988)	__d	7	6	4,842	4,842

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98	Guidance on Radiation Received in Space Activities (1989)	__d	2	4	3,405	3,405
97	Measurement of Radon and Radon Daughters in Air (1988)	__d	3	6	4,240	4,240
96	Comparative Carcinogenicity of Ionizing Radiation and Chemicals (1989)	__d	4	4	4,096	4,096
95	Radiation Exposure of the U.S. Population from Consumer Products and Miscellaneous Sources (1987)	__d	4	6	4,271	4,271
94	Exposure of the Population in the United States and Canada from Natural Background Radiation (1987)	__d	2	9	4,425	4,425
93	Ionizing Radiation Exposure of the Population of the United States (1987)	__d	1	6	7,386	7,386
92	Public Radiation Exposure from Nuclear Power Generation in the United States (1987)	__d	2	3	3,689	3,689
91	Recommendations on Limits for Exposure to Ionizing Radiation (1987)	__d	0	0	8,486	8,486
90	Neptunium: Radiation Protection Guidelines (1988)	__d	1	3	2,906	2,906
89	Genetic Effects from Internally Deposited Radionuclides (1987)	__d	1	2	3,965	3,965
88	Radiation Alarms and Access Control Systems (1986)	__d	2	4	4,810	4,810
87	Use of Bioassay Procedures for Assessment of Internal Radionuclide Deposition (1987)	__d	2	3	4,250	4,250
86	Biological Effects and Exposure Criteria for Radiofrequency Electromagnetic Fields (1986)	__d	1	10	5,297	5,297
85	Mammography—A User's Guide (1986)	__d	1	0	32,655	32,655
84	General Concepts for the Dosimetry of Internally Deposited Radionuclides (1985)	__d	2	2	4,256	4,256
83	The Experimental Basis for Absorbed-Dose Calculations in Medical Uses of Radionuclides (1985)	__d	2	2	3,550	3,550
82	SI Units in Radiation Protection and Measurements (1985)	__d	4	3	4,585	4,585
81	Carbon-14 in the Environment (1985)	__d	2	4	3,998	3,998
80	Induction of Thyroid Cancer by Ionizing Radiation (1985)	__d	1	3	4,271	4,271
79	Neutron Contamination from Medical Electron Accelerators (1984)	__d	2	12	4,827	4,827
78	Evaluation of Occupational and Environmental Exposures to Radon and Radon Daughters in the United States (1984)	__d	1	2	6,477	6,477
77	Exposures from the Uranium Series with Emphasis on Radon and Its Daughters (1984)	__d	2	2	6,652	6,652

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76	Radiological Assessment: Predicting the Transport, Bioaccumulation, and Uptake by Man of Radionuclides Released to the Environment (1984)	__d	1	2	6,686	6,686
75	Iodine-129: Evaluation of Release from Nuclear Power Generation (1983)	__d	1	2	5,947	5,947
74	Biological Effects of Ultrasound: Mechanisms and Clinical Implications (1983)	__d	3	5	11,226	11,226
73	Protection in Nuclear Medicine and Ultrasound Diagnostic Procedures in Children (1983)	__d	2	3	5,502	5,502
72	Radiation Protection and Measurement for Low-Voltage Neutron Generators (1983)	__d	2	4	4,448	4,448
71	Operational Radiation Safety—Training (1983)	__d	0	0	5,067	5,067
70	Nuclear Medicine—Factors Influencing the Choice and Use of Radionuclides in Diagnosis and Therapy (1982)	__d	2	2	5,413	5,413
69	Dosimetry of X-Ray and Gamma-Ray Beams for Radiation Therapy in the Energy Range 10 keV to 50 MeV (1981)	__d	3	3	5,020	5,020
68	Radiation Protection in Pediatric Radiology (1981)	__d	2	4	4,504	4,504
67	Radiofrequency Electromagnetic Fields—Properties, Quantities and Units, Biophysical Interaction and Measurements (1981)	__d	0	5	5,452	5,452
66	Mammography (1980)	__d	0	0	4,598	4,598
65	Management of Persons Accidentally Contaminated with Radionuclides (1980)	__d	0	9	18,438	18,438
64	Influence of Dose and Its Distribution in Time on Dose-Response Relationships for Low-LET Radiations (1980)	__d	1	3	5,249	5,249
63	Tritium and Other Radionuclide Labeled Organic Compounds Incorporated in Genetic Material (1979)	__d	0	3	4,328	4,328
62	Tritium in the Environment (1979)	__d	0	8	3,961	3,961
61	Radiation Safety Training Criteria for Industrial Radiography (1978)	__d	0	3	6,171	6,171
60	Physical, Chemical and Biological Properties of Radium Relevant to Radiation Protection Guidelines (1979)	__d	0	3	4,034	4,034
59	Operational Radiation Safety Program (1979)	__d	0	0	8,046	8,046
58	A Handbook of Radioactivity Measurements Procedures (1978)	__d	1	5	13,632	13,632
57	Instrumentation and Monitoring Methods for Radiation Protection (1978)	__d	1	9	10,977	10,977

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			2013			
			Hardcopy	E-Pub		
56	Radiation Exposure from Consumer Products and Miscellaneous Sources (1977)	__d	__e	0	5,905	5,905
55	Protection of the Thyroid Gland in the Event of Releases of Radioiodine (1977)	__d	0	3	6,842	6,842
54	Medical Radiation Exposure of Pregnant and Potentially Pregnant Women (1977)	__d	3	12	10,596	10,596
53	Review of NCRP Radiation Dose Limit for Embryo and Fetus in Occupationally Exposed Women (1977)	__d	__e	0	9,289	9,289
52	Cesium-137 from the Environment to Man: Metabolism and Dose (1977)	__d	0	4	4,706	4,706
51	Radiation Protection Design Guidelines for 0.1-100 MeV Particle Accelerator Facilities (1977)	__d	1	0	8,512	8,512
50	Environmental Radiation Measurements (1976)	__d	2	4	7,924	7,924
49	Structural Shielding Design and Evaluation for Medical Use of X Rays and Gamma Rays of Energies up to 10 MeV (1976)	__d	7	30	17,640	17,640
	Adjunct to NCRP Report 49 (1976)	__d	0	0	2,797	2,797
48	Radiation Protection for Medical and Allied Health Personnel (1976)	__d	__e	0	14,359	14,359
47	Tritium Measurement Techniques (1976)	__d	2	10	6,381	6,381
46	Alpha-Emitting Particles in Lungs (1975)	__d	2	4	6,088	6,088
45	Natural Background Radiation in the United States (1975)	__d	__e	0	7,296	7,296
44	Krypton-85 in the Atmosphere—Accumulation, Biological Significance, and Control Technology (1975)	__d	0	4	6,571	6,571
43	Review of the Current State of Radiation Protection Philosophy (1975)	__d	__e	0	9,722	9,722
42	Radiological Factors Affecting Decision-Making in a Nuclear Attack (1974)	__d	3	5	47,238	47,238
41	Specification of Gamma-Ray Brachytherapy Sources (1974)	__d	5	4	5,473	5,473
40	Protection Against Radiation from Brachytherapy Sources (1972)	__d	1	9	9,799	9,799
39	Basic Radiation Protection Criteria (1971)	__d	__e	0	40,393	40,393
38	Protection Against Neutron Radiation (1971)	__d	3	14	8,977	8,977
37	Precautions in the Management of Patients who have Received Therapeutic Amounts of Radionuclides (1970)	__d	0	0	17,402	17,402
36	Radiation Protection in Veterinary Medicine (1970)	__d	0	0	7,620	7,620
35	Dental X-Ray Protection (1970)	__d	0	0	28,559	28,559

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			2013			
			Hardcopy	E-Pub		
34	Medical X-Ray and Gamma-Ray Protection for Energies up to 10 MeV—Structural Shielding Design and Evaluation (1970)	__d	__e	0	17,622	17,622
33	Medical X-Ray and Gamma-Ray Protection for Energies up to 10 MeV—Equipment Design and Use (1968)	__d	__e	0	98,134	98,134
32	Radiation Protection in Educational Institutions (1966)	__d	0	0	22,362	22,362
31	Shielding for High Energy Electron Accelerator Installations (1964)	3,700	__e	0	2,697	6,397
30	Safe Handling of Radioactive Materials (1964)	24,450	4	0	9,941	34,391
29	Exposure to Radiation in an Emergency	55,705	__e	0	3,678	59,383
28	A Manual of Radioactivity Procedures (1961)	22,892	__e	0	3,665	26,557
27	Stopping Powers for Use with Cavity Chambers (1961)	4,144	1	0	3,831	7,975
26	Medical X-Ray Protection up to Three Million Volts (1961)	75,894	__e	0	27,154	103,048
25	Measurement of Absorbed Dose of Neutrons and Mixtures of Neutrons and Gamma Rays (1961)	10,790	0	0	4,083	14,873
24	Protection Against Radiations from Sealed Gamma Sources (1960)	35,710	__e	0	953	36,663
23	Measurement of Neutron Flux and Spectra for Physical and Biological Applications (1960)	11,849	0	0	3,073	14,922
22	Maximum Permissible Body Burdens and Maximum Permissible Concentrations of Radionuclides in Air and in Water for Occupational Exposure (1959)	52,526	1	0	7,446	59,972
21	Safe Handling of Bodies Containing Radioactive Isotopes (1958)	29,304	__e	0	2,352	31,656
20	Protection Against Neutron Radiation up to 30 Million Electron Volts (1957)	16,989	__e	0	353	17,342
19	Regulation of Radiation Exposure by Legislative Means (1955)	15,140	__e	0	0	15,140
18	X-Ray Protection (1955)	98,713	__e	0	0	98,713
17	Permissible Dose from External Sources of Ionizing Radiation (1954)	60,530	__e	0	2,038	62,568
16	Radioactive Waste Disposal in the Ocean (1954)	16,203	__e	0	2,664	18,867
15	Safe Handling of Cadavers Containing Radioactive Isotopes (1953)	14,486	__e	0	0	14,486
14	Protection Against Betatron-Synchrotron Radiations up to 100 Million Electron Volts (1954)	27,190	__e	0	1,710	28,900
13	Protection Against Radiation from Radium, Cobalt-60 and Cesium-137 (1954)	22,785	__e	0	0	22,785

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		Government Printing Office ^a	NCRP Publications ^b		Total NCRP Publications	All Sources Combined
			2013			
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12	Recommendations for the Disposal of Carbon-14 Wastes (1953)	23,506	__e	0	2,571	26,077
11	Maximum Permissible Amounts of Radioisotopes in the Human Body and Maximum Permissible Concentrations in Air and Water (1953)	32,494	__e	0	0	32,494
10	Radiological Monitoring Methods and Instruments (1952)	59,651	__e	0	3,894	63,545
9	Recommendations for Waste Disposal of Phosphorus-32 and Iodine-131 for Medical Users (1951)	28,810	__e	0	5,682	34,492
8	Control and Removal of Radioactive Contamination in Laboratories (1951)	50,500	3	0	7,653	58,153
7	Safe Handling of Radioactive Isotopes (1949)	60,867	__e	0	0	60,867
6	Medical X-Ray Protection up to Two Million Volts (1949)	70,261	__e	0	0	70,261
5	Safe Handling of Radioactive Luminous Compounds (1941)	6,187	__e	0	0	6,187
4	Radium Protection (1938)	10,086	__e	0	0	10,086
3	X-Ray Protection (1936)	16,490	__e	0	0	16,490
2	Radium Protection (1934)	__g	__e	0	0	0
1	X-Ray Protection (1931)	1,596	__e	0	0	1,596
Total NCRP Reports Distributed		959,448	1,452	1,402	952,784	1,912,232

Lauriston S. Taylor Lectures

37	When Does Risk Assessment Get Fuzzy?, John E. Till (2013)	__i	__i	__i	__i
36	From the Field to the Laboratory and Back: The <i>What Ifs</i> , <i>Whats</i> , and <i>Who Cares</i> of Radiation Biology, Antone L. Brooks (2012), Health Phys. 105 (5), 407–421	__i	__i	__i	__i
35	What Makes Particle Radiation So Effective?, Eleanor A. Blakely (2011), Health Phys. 103 (5), 508–528	__i	__i	__i	__i
34	Radiation Protection and Public Policy in an Uncertain World, Charles E. Land (2010), Health Phys. 101 (5), 497–629 (2011)	__i	__i	__i	__i
33	Radiation Epidemiology: The Golden Age and Remaining Challenges, John D. Boice, Jr. (2009), Health Phys. 100 (1) 59–76 (2011)	__i	__i	__i	__i
32	Radiation Standards, Dose/Risk Assessments, Public Interactions, and Yucca Mountain: Thinking Outside the Box, Dade W. Moeller (2008,) Health Phys. 97 , 376–391 (2009)	__i	__i	__i	__i

No.	Title and Year of Publication	Number of Copies Distributed				
		Government Printing Office ^a	NCRP Publications ^b		Total NCRP Publications	All Sources Combined
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31	The Quest for Therapeutic Actinide Chelators, Patricia W. Durbin (2007), Health Phys. 95 , 465–492 (2008)	__i	__i	__i	__i	
30	Fifty Years of Scientific Investigation: The Importance of Scholarship and the Influence of Politics and Controversy, Robert L. Brent (2006), Health Phys. 93 , 348–379 (2007)	__i	__i	__i	__i	
29	Nontargeted Effects of Radiation: Implications for Low-Dose Exposures, John B. Little (2005), Health Phys. 91 , 416–426 (2006)	__i	__i	__i	__i	
28	Radiation Protection in the Aftermath of a Terrorist Attack Involving Exposure to Ionizing Radiation, Abel J. Gonzalez (2004), Health Phys. 89 , 418–446 (2005)	__i	__i	__i	__i	
27	The Evolution of Radiation Protection—From Erythema to Genetic Risks of Cancer ? Charles B. Meinhold (2003), Health Phys. 87 , 240–248 (2004)	__i	__i	__i	__i	
26	Developing Mechanistic Data for Incorporation into Cancer and Genetic Risk Assessments: Old Problems and New Approaches, R. Julian Preston (2002), Health Phys. 85 , 4–12 (2003)	__i	__i	__i	__i	
25	Assuring the Safety of Medical Diagnostic Ultrasound, Wesley L. Nyborg (2001), Health Phys. 82 , 578–587 (2002)	__i	__i	__i	__i	
24	Administered Radioactivity: <i>Unde Venimus Quoque Imus</i> , S. James Adelstein (2000), Health Phys. 80 , 317–324 (2001)	__i	__i	__i	__i	
23	Back to Background: Natural Radiation and Radioactivity Exposed, by Naomi H. Harley (1999), Health Phys. 79 , 121–128 (2000)	__i	__i	__i	__i	
22	From Chimney Sweeps to Astronauts: Cancer Risks in the Work Place, by Eric J. Hall (1998), Health Phys. 75 , 357–366 (1999)	__i	__i	__i	__i	
21	Radionuclides in the Body: Meeting the Challenge, by William J. Bair (1997), Health Phys. 73 , 423–432 (1998)	__i	__i	__i	__i	
20	70 Years of Radiation Genetics: Fruit Flies, Mice and Humans, by Seymour Abrahamson (1996), Health Phys. 71 , 624–633 (1997)	__i	__i	__i	__i	
19	Certainty and Uncertainty in Radiation Research, by Albrecht M. Kellerer (1995), Health Phys. 69 , 446–453 (1976)	__i	__i	__i	__i	
18	Mice, Myths and Men, by R.J. Michael Fry (1995)	__d	0	__j	512	
17	Science, Radiation Protection and the NCRP, by Warren K. Sinclair (1993)	__d	0	__j	544	
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No.	Title and Year of Publication	Number of Copies Distributed				
		Government Printing Office ^a	NCRP Publications ^b		Total NCRP Publications	All Sources Combined
			2013			
			Hardcopy	E-Pub		
15	When is a Dose Not a Dose?, by Victor P. Bond (1992)	__d	0	0	752	752
14	Radiation Protection and the Internal Emitter Saga, by J. Newell Stannard (1990)	__d	0	0	354	354
13	Radiobiology and Radiation Protection: The Past Century and Prospects for the Future, by Arthur C. Upton (1989)	__d	0	0	579	579
12	How Safe is Safe Enough?, by Bo Lindell (1988)	__d	0	0	1,009	1,009
11	How to Be Quantitative about Radiation Risk Estimates, by Seymour Jablon (1988)	__d	0	0	1,023	1,023
10	Biological Effects of Non-Ionizing Radiations: Cellular Properties and Interactions, by Herman P. Schwan (1987)	__d	0	0	1,691	1,691
9	Truth (and Beauty) in Radiation Measurement, by John H. Harley (1985)	__d	1	0	765	765
8	Limitation and Assessment in Radiation Protection, by Harald H. Rossi (1984)	__d	1	0	1,529	1,529
7	The Human Environment—Past, Present and Future, by Merrill Eisenbud (1983)	__d	0	0	1,034	1,034
6	Ethics, Trade-Offs and Medical Radiation, by Eugene L. Saenger (1982)	__d	1	0	1,249	1,249
5	How Well Can We Assess Genetic Risk? Not Very, by James F. Crow (1981)	__d	0	0	1,404	1,404
4	From “Quantity of Radiation” and “Dose” to “Exposure” and “Absorbed Dose”—An Historical Review, by Harold O. Wyckoff (1980)	__d	1	0	1,851	1,851
3	Radiation Protection—Concepts and Trade Offs, by Hymer L. Friedell (1979)	__d	0	0	2,084	2,084
2	Why be Quantitative about Radiation Risk Estimates? by Sir Edward E. Pochin	__d	0	__j	2,338	2,338
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Total Lectures Distributed		0	4	0	21,664	21,664

NCRP Annual Meeting Proceedings

34	Emerging Issues in Radiation Protection in Medicine, Emergency Response, and the Nuclear Fuel Cycle, Proceedings of the Forty-Eighth Annual Meeting held March 12–13, 2012.	__i	__i	__i		__i
33	Scientific and Policy Challenges of Particle Radiations in Medical Therapy and Space Missions, Proceedings of the Forty-Seventh Annual Meeting held March 78, 2011. Health Phys. 103 (5), 529–684 (2012)	__i	__i	__i		__i

No.	Title and Year of Publication	Number of Copies Distributed				
		Government Printing Office ^a	NCRP Publications ^b		Total NCRP Publications	All Sources Combined
			2013			
			Hardcopy	E-Pub		
32	Communication of Radiation Benefits and Risks in Decision Making, Proceedings of the Forty-Sixth Annual Meeting held March 8–9, 2010. Health Phys. 101 (5), 497–629 (2011)	__i	__i	__i	__i	
31	Future of Nuclear Power Worldwide: Safety, Health and Environment, Proceedings of the Forty-Fifth Annual Meeting held March 2–3, 2009. Health Phys. 100 (1), 2–112 (2011).	__i	__i	__i	__i	
30	Low Dose and Low Dose-Rate Radiation Effects and Models, Proceedings of the Forty-Fourth Annual Meeting held April 14–15, 2008. Health Phys. 97 (5), 373–541 (2009)	__i	__i	__i	__i	
29	Advances in Radiation Protection in Medicine, Proceedings of the Forty-Third Annual Meeting held April 16–17, 2007. Health Phys. 95 (5), 461–686 (2008)	__i	__i	__i	__i	
28	Chernobyl at Twenty, Proceedings of the Forty-Second Annual Meeting held April 3–4, 2006. Health Phys. 93 (5), 345–595 (2007)	__i	__i	__i	__i	
27	Managing the Disposition of Low-Activity Radioactive Materials, Proceedings of the Forty-First Annual Meeting held March 30–31, 2005. Health Phys. 91 , 413–536 (2006)	__i	__i	__i	3 3	
26	Advances in Consequence Management for Radiological Terrorism Events, Proceedings of the Fortieth Annual Meeting held April 14–15, 2004. Health Phys. 89 (5), 415–588 (2005)	__i	__i	__i	1 1	
	Compact disk version of Proceedings No. 26	__i	0	0	102 102	
25	Radiation Protection at the Beginning of the 21st Century—A Look Forward, Proceedings of the Thirty-Ninth Annual Meeting held April 9–10, 2004. Health Phys. 87 (3), 249–318 (2004)	__i	__i	__i	__i	
24	Where the New Biology Meets Epidemiology: Impact on Radiation Risk Estimates, Proceedings of the Thirty-eighth Annual Meeting held April 10–11, 2002. Health Phys. 85 , 1–108 (2003)	__i	__i	__i	__i	
23	Fallout from Atmospheric Nuclear Tests—Impact on Science and Society, Proceedings of the Thirty-seventh Annual Meeting held April 4–5, 2001. Health Phys. 82 , 573–748 (2002)	__i	__i	__i	__i	
22	Ionizing Radiation Science and Protection in the 21st Century, Proceedings of the Thirty-sixth Annual Meeting held April 5–6, 2000. Health Phys. 80 , 317–402 (2001)	__i	__i	__i	__i	
21	Radiation Protection in Medicine: Contemporary Issues, Proceedings of the Thirty-fifth Annual Meeting held April 7–8, 1999 (1999)	__d	0	0	204 204	

No.	Title and Year of Publication	Number of Copies Distributed				
		Government Printing Office ^a	NCRP Publications ^b		Total NCRP Publications	All Sources Combined
			2013			
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	Compact disk version of Proceedings No. 21	__d	0	0	82	82
20	Cosmic Radiation Exposure of Airline Crews, Passengers and Astronauts, Proceedings of the Thirty-fourth Annual Meeting held on April 1–2, 1998, Health Phys. 79 , 466–613 (2000)	__i	__i	__i	0	__i
19	The Effects of Pre- and Postconception Exposure to Radiation, Proceedings of the Thirty-third Annual Meeting held on April 2–3, 1997, Teratology 59 , 181–317 (1999)	__i	__i	__i	0	__i
18	Implications of New Data on Radiation Cancer Risk, Proceedings of the Thirty-second Annual Meeting held April 3–4, 1996 (1997)	__d	1	__j	383	383
17	Environmental Dose Reconstruction and Risk Implications, Proceedings of the Thirty-first Annual Meeting held April 12–13, 1995 (1996)	__d	1	__j	428	428
16	Extremely-Low-Frequency Electromagnetic Fields: Issues in Biological Effects and Public Health, Proceedings of the Thirtieth Annual Meeting held on April 6–7, 1994 [not published]	__d	0	__j	0	0
15	Radiation Science and Societal Decision Making, Proceedings of the Twenty-Ninth Annual Meeting held April 7–8, 1993 (1994)	__d	0	__j	565	565
14	Radiation Protection in Medicine, Proceedings of the Twenty-Eighth Annual Meeting held April 1–2, 1992 (1993)	__d	0	__j	847	847
13	Genes, Cancer and Radiation Protection, Proceedings of the Twenty-Seventh Annual Meeting held April 3–4, 1991 (1992)	__d	0	__j	690	690
12	Health and Ecological Implications of Radioactively Contaminated Environments, Proceedings of the Twenty-Sixth Annual Meeting held April 4–5, 1990 (1991)	__d	0	__j	917	917
11	Radiation Protection Today—The NCRP at Sixty Years, Proceedings of the Twenty-Fifth Annual Meeting held April 4–5, 1990 (1990)	__d	0	7	661	661
10	Radon, Proceedings of the Twenty-Fourth Annual Meeting held March 30–31, 1988 (1989)	__d	0	__j	1,454	1,454
9	New Dosimetry at Hiroshima and Nagasaki and Its Implications for Risk Estimates, Proceedings of the Twenty-Third Annual Meeting held April 8–9, 1987 (1989)	__d	0	__j	748	748
8	Nonionizing Electromagnetic Radiations and Ultrasound, Proceedings of the Twenty-Second Annual Meeting held April 2–3, 1986 (1988)	__d	0	__j	1,025	1,025
7	Radioactive Waste, Proceedings of the Twenty-First Annual Meeting held April 3–4, 1985 (1986)	__d	0	__j	1,421	1,421

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6	Some Issues Important in Developing Basic Radiation Protection Recommendations, Proceedings of the Twentieth Annual Meeting held April 4–5, 1984 (1985)	__d	0	__j	1,537	1,537
5	Environmental Radioactivity, Proceedings of the Nineteenth Annual Meeting held April 6–7, 1983 (1984)	__d	0	__j	3,976	3,976
4	Radiation Protection and New Medical Diagnostic Approaches, Proceedings of the Eighteenth Annual Meeting held April 6–7, 1982 (1983)	__d	0	__j	1,210	1,210
3	Critical Issues in Setting Radiation Dose Limits, Proceedings of the Seventeenth Annual Meeting held April 8–9, 1981 (1982)	__d	1	__j	1,667	1,667
2	Quantitative Risk in Standards Setting, Proceedings of the Sixteenth Annual Meeting held April 2–3, 1980 (1981)	__d	__e	__j	2,158	2,158
1	Perceptions of Risk, Proceedings of the Fifteenth Annual Meeting held March 14–15, 1979 (1980)	__d	0	__j	1,944	1,944
Total Proceedings Distributed		0	3	7	22,023	22,023

NCRP Commentaries

22	Radiological Health Protection Issues Associated With Use of Active Detection Technology Systems for Detection of Radioactive Threat Materials (2011)	__d	4	3	62	62
21	Radiation Protection in the Application of Active Detection Technologies (2011)	__d	5	2	77	77
20	Radiation Protection and Measurement Issues Related to Cargo Scanning With Accelerator-Produced High-Energy X Rays (2007)	__d	4	3	351	351
19	Key Elements of Preparing Emergency Responders for Nuclear and Radiological Terrorism (2005)	__d	5	6	1,301	1,301
18	Biological Effects of Modulated Radiofrequency Fields (2003)	__d	1	4	451	451
17	Pulsed Fast Neutron Analysis System Used in Security Surveillance (2003)	__d	0	0	486	486
16	Screening of Humans for Security Purposes Using Ionizing Radiation Scanning Systems (2003)	__d	1	6	630	630
15	Evaluating the Reliability of Biokinetic and Dosimetric Models and Parameters Used to Assess Individual Doses for Risk Assessment Purposes (1998)	__d	0	0	657	657
14	A Guide for Uncertainty Analysis in Dose and Risk Assessments Related to Environmental Contamination (1996)	__d	0	3	1,661	1,661

No.	Title and Year of Publication	Number of Copies Distributed				
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13	An Introduction to Efficacy in Diagnostic Radiology and Nuclear Medicine (Justification of Medical Radiation Exposure) (1995)	__d	0	0	1,397	1,397
12	Radiation Exposure and High-Altitude Flight (1995)	__d	0	0	558	558
11	Dose Limits for Individuals Who Receive Exposure from Radionuclide Therapy Patients (1995)	__d	0	0	1,316	1,316
10	Advising the Public about Radiation Emergencies: A Document for Public Comment (1994)	__d	0	0	1,172	1,172
9	Considerations Regarding the Unintended Radiation Exposure of the Embryo, Fetus or Nursing Child (1994)	__d	0	2	1,390	1,390
8	Uncertainty in NCRP Screening Models Relating to Atmospheric Transport, Deposition and Uptake by Humans (1993)	__d	0	0	910	910
7	Misadministration of Radioactive Material in Medicine—Scientific Background (1991)	__d	0	0	1,084	1,084
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5	Review of the Publication, “Living Without Landfills” (1989)	__d	0	0	3,104	3,104
4	Guidelines for the Release of Waste Water from Nuclear Facilities with Special Reference to the Public Health Significance of the Proposed Release of Treated Waste Waters at Three Mile Island (1987)	__d	0	0	859	859
3	Screening Techniques for Determining Compliance with Environmental Standards—Releases of Radionuclides to the Atmosphere (1986)	__d	__e	0	3,602	3,602
2	Preliminary Evaluation of Criteria for the Disposal of Transuranic Contaminated Waste (1982)	__d	__e	0	292	292
1	Krypton-85 in the Atmosphere—with Specific Reference to the Public Health Significance of the Proposed Controlled Release at Three Mile Island (1980)	__d	0	0	697	697
Total Commentaries Distributed		0	20	29	23,161	23,161

NCRP Symposia Proceedings

3	Acceptability of Risk from Radiation—Application to Human Space Flight, Proceedings of a Symposium held May 29, 1996 (1997)	__d	1	0	655	655
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No.	Title and Year of Publication	Number of Copies Distributed				
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			2013			
			Hardcopy	E-Pub		
1	The Control of Exposure of the Public to Ionizing Radiation in the Event of Accident or Attack, Proceedings of a Symposium held April 27-28, 1981 (1982)	^d	0	0	1,849	1,849
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^gNo record of distribution is available.

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