For Immediate Release
October 7, 2010

NCRP Forms Scientific Committee 1-20, "Biological Effectiveness of Photons as a Function of Energy"

The Committee will prepare a report on important unresolved questions in evaluating the risk of cancer from exposure to photons that addresses:

1. relative biological effectiveness (RBE) with energy; and
2. dose and dose-rate effectiveness factor (DDREF).

A quantitative determination of both Items 1 and 2 is necessary for estimating cancer risk from exposure to photons in mammography, other medical imaging procedures, and from various occupational and public radiation sources. Recent reviews of radiobiological studies and human epidemiology data have provided estimates of RBE and DDREF that vary widely. In particular, available evidence indicates that the biological effectiveness of lower-energy photons may be two or more times greater than for higher-energy photons. A second issue is under what circumstances should the DDREF be applied or not be applied to relatively higher dose rates such as those used in medical procedures. This would require establishing quantitative criteria for the DDREF with regard to dose and dose rate.

NCRP will undertake a comprehensive evaluation of the variation in RBE as a function of photon energy based on a review of results from cytogenetic studies, carcinogenesis studies with laboratory animals and *in vitro* test systems, and epidemiological surveys of cancer incidence and mortality in exposed human populations. NCRP will also evaluate the quantitative criteria for the DDREF with regard to dose and dose rate. The result of this effort will be a report that provides an improved scientific foundation for the assessment of cancer risks for photons over the entire energy and dose-rate range associated with medical, occupational, or other human exposures.

The membership of SC 1-20 is:

S. Simon, *Chairman*	K. Mabuchi
L.A. Braby	J.S. Puskin
P.Y. Chang	D. Richardson
D. Goodhead	J. Tucker
S.C. Hora	E. Vano
D.C. Kocher	M. Rosenstein, *NCRP Staff Consultant*

The first meeting of SC 1-20 is scheduled for December 9-10, 2010 at the NCRP Headquarters in Bethesda, Maryland.

For additional information contact David A. Schauer, ScD, CHP at schauer@NCRPonline.org, 301-657-2652, ext. 20, or 301-907-8768 (fax).

The National Council on Radiation Protection and Measurements

Media Contact:
DA Schauer, Executive Director
7910 Woodmont Avenue, Suite 400
Bethesda, Maryland 20814-3095
Telephone: (301) 657-2652
Fax: (301) 907-8768
http://NCRPonline. org
http://NCRPpublications.org