

***View of the National Council on Radiation  
Protection and Measurements (NCRP) on  
Adopting SI Units for Radiation Measurements  
in the United States***

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## National Council on Radiation Protection and Measurements

**NCRP was chartered by the U.S. Congress in 1964 as the National Council on Radiation Protection and Measurements.**

**The Charter of the Council (Public Law 88-376) states its objectives that includes:**

**“...develop basic concepts about radiation quantities, units and measurements, about the application of these concepts, and about radiation protection...”**

NCRP REPORT No. 82

# SI UNITS IN RADIATION PROTECTION AND MEASUREMENTS

**NCRP**

*National Council on Radiation Protection and Measurements*

Report 82 published in 1985; chaired by Randy Caswell of the National Bureau of Standards.

“The Council has decided to recommend to all that the SI be used and the special names for the SI units be employed where indicated. To accomplish this, the Council recommends (noting that the ICRU's 10-year period has essentially elapsed) a further transition period ending in five years, December 1989.

For approximately a two year period through 1986, the NCRP recommends simultaneous use of SI and the present units, the present units being reported first and SI in brackets. During 1987-89, SI units will be quoted first with present units in brackets. Thereafter, only SI will be used.”

**RESPONDING TO A  
RADIOLOGICAL OR  
NUCLEAR TERRORISM  
INCIDENT: A GUIDE  
FOR DECISION MAKERS**



**Report 165 published in 2010, chaired by John Poston of Texas A&M University.**

**“This Report is focused almost exclusively on the early-phase response to radiological or nuclear terrorism incidents.**

The primary radiation quantities and units used in this Report to implement (1) and (2) are those in common use in the United States for emergency response, and are listed below.

NCRP has adopted the International System (SI) of radiation quantities and units for its reports (NCRP, 1985). Therefore, in the text the corresponding SI quantity and unit is displayed in parenthesis after the common quantity and unit.”

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## Report 165 (con't.)

**For the radiation control zones (regarding exposure rate from external sources):**

- “Common use: exposure rate in milliroentgens per hour ( $\text{mR h}^{-1}$ ) or roentgens per hour ( $\text{R h}^{-1}$ ); and
- SI system: air-kerma rate in milligrays per hour ( $\text{mGy h}^{-1}$ ) or grays per hour ( $\text{Gy h}^{-1}$ ).

**For the radiation control zones (regarding surface contamination):**

- Common use: activity in disintegrations per minute per unit area ( $\text{dpm cm}^{-2}$ ); and
- SI system: activity in becquerels per unit area ( $\text{Bq cm}^{-2}$ ).



**Despite the mixed view expressed by Report No. 165, NCRP has not changed its earlier recommendation that the U.S. endorse and move to SI units.**

**Under the current national security paradigm that includes a much stronger concern about the possibility of radiological terrorism or nuclear accidents, and the needs of those that respond to those situations, the NCRP understands that the nation has to consider these needs and be more flexible in terms of transition time.**

**Nonetheless, the NCRP's position remains the same in that SI units should be used (even in emergency response) and the transition time for the U.S. has been much too long already.**