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INFORMATION BULLETIN 2009-05

To: Brachytherapy Licensees

From: Todd S. Carpenter
Radiation Protection Services Section

Subject: Reportable medical events involving treatment delivery errors caused by confusion of units for the specification of brachytherapy sources.

The U.S. Nuclear Regulatory Commission (NRC) has issued an information notice 2009-17 to alert licensees to treatment delivery errors and associated medical events caused by confusion of units for the specification of low-energy photon emitting brachytherapy sources implanted into patients.

The NRC has received reports of numerous medical events caused by errors in confusing the units of source strength in the specification of sources specifically, units of air-kerma strength and apparent activity in units of millicurie (mCi). Details of medical events have identified human error and not the design or functioning of the equipment caused all of the reportable events.

Three problematic areas addressed are:

1. Data entry error, whereby the source strength was entered into a computerized treatment planning system in units not used by the system.

2. Ordering error, whereby incorrect source strength were delivered and used because either the licensee or the manufacturer made an error in the requested units.

3. Conversion error, whereby a conversion between two different units was omitted or performed incorrectly.

Licensees may refer to guidance and practical standards contained in the American Association of Physicists in Medicine Report No. 32, issued 1987
http://www.aapm.org/pubs/reports/rpt21.pdf.