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From: Commanding Officer, Navy Environmental Health Center

Subj: NAVAL RADIOACTIVE MATERIAL PERMIT (NRMP) INFORMATION NOTICE 2003-02:
MEDICAL MISADMINISTRATIONS CAUSED BY FAILURE TO PROPERLY PERFORM
TESTS ON DOSE CALIBRATORS FOR BETA- AND LOW- ENERGY PHOTON-EMITTING
RADIONUCLIDES

1. NRC Information Notice 2002-19 dated 14 June 2002 addresses lessons learned from an event involving multiple misadministrations due to inaccurate measurement of dosages of beta-emitting radiopharmaceuticals, and the importance of conducting proper tests (Geometry) of the dose calibrator when measuring beta- and low-energy photon-emitting radiopharmaceuticals and liquid brachytherapy sources (e.g., samarium-153, strontium-89, yttrium-90, phosphorous-32, and iodine-125). The Information Notice can be accessed at <http://www.nrc.gov/reading-rm/doc-collections/gen-comm/info-notices/2002/in02019.pdf>.
2. The incidents involved 61 medical misadministrations at nine midwestern hospitals that occurred between 1997 and 2001 as a result of inaccurate measurement of the samarium-153 unit dosages provided by a commercial nuclear pharmacy. The hospitals were not required to measure the dosages in dose calibrators because they ordered unit dosages of the beta-emitting radiopharmaceutical from a nuclear pharmacy licensed under 10 CFR Part 32. In these cases, as provided in NRC's regulations, the hospitals relied solely on the nuclear pharmacy to provide a measurement or the correct activity of beta emitting (samarium-153) in the radiopharmaceuticals. In 1994, another medical licensee reported potential phosphorus-32 and strontium-89 misadministrations due to licensee's use of a dose calibrator that was not properly calibrated for assay of the radionuclides and failure to evaluate the system for geometric consistency among different delivery syringe volumes.
3. Please review this information and use it to evaluate potential weaknesses in your own programs and procedures. If there is a significant discrepancy between your measured activity and the pharmacy or manufacturer, the discrepancy must be resolved with the commercial pharmacy or manufacturer of the unit dosage before the dosage is administered.
4. For additional information, please contact LCDR P. T. Fetherston, MSC, USN, Radiation Health Team Leader, at DSN 377-0766 or (757) 953-0766, Fax (757) 953-0685, or E-Mail at fetherstonp@nehc.med.navy.mil.

/s/
P. T. FETHERSTON
By direction

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