



UNITED STATES
NUCLEAR REGULATORY COMMISSION
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(STP-06-017, March, Other, ALARA)

February 22, 2006

ALL AGREEMENT STATES, MINNESOTA, PENNSYLVANIA, VIRGINIA

NRC INSPECTION VALUE ADDED FINDINGS: (1) ALARA CONSIDERATIONS DURING INSPECTIONS; AND (2) FIXED GAUGE WITH REVERSED SHUTTER CONTROL ARM (STP-06-017)

Purpose: To share with the Agreement States NRC's inspection findings that could be useful in your inspection program.

Background: The NRC Regional Offices routinely share with other NRC offices good practices they have incorporated into their inspection programs. Recently, the Office of State and Tribal Programs (STP) received copies of such documents from the NRC Region III Office. STP determined that the good practices discussed in the documents could be useful to the Agreement States and we plan to continue to share such information.

Finding 1

Evaluating As Low As is Reasonably Achievable (ALARA) Considerations During Inspections-RIII Value Added Finding (VAF)-2006-03: During routine inspections of two nuclear medicine clinics, an NRC inspector identified cost-effective measures to reduce the extremity doses to nuclear medicine technologists, and maintain doses ALARA. In each case, the inspector identified elevated radiation levels of between 16 and 20 millirem per hour behind the L-shields which were in close proximity to radioactive waste containers. The L-shields were used by the technologists to prepare doses of radiopharmaceuticals for injection and to calibrate sources for the dose calibrator.

In both instances, the NRC inspector discussed ALARA considerations with the licensees' staff. At one facility, the technologist relocated the waste container to a lead-lined storage container in the hot lab, which resulted in the reduction of radiation levels behind the L-shield to background. At the other facility, the licensee used additional lead bricks to increase the shielding around the waste container. This VAF illustrates the importance of not only inspecting for compliance, but also the value of identifying the application of ALARA concepts. For additional information regarding VAF-2006-03, please contact Ms. Sarah Bakhsh at 630-829-9816 or email: srb2@nrc.gov.

Finding 2

Shutter Control Arm Reversed on a Fixed Gauge Enabling the Sources to be in an Open/Unshielded Position During Lock-Out-RIII VAF-2006-04: During a routine inspection of a licensee, an NRC inspector identified that the shutter control lever arm on a fixed gauge had been reversed. The reverse positioning allowed the radioactive sources to be in the exposed/open position although the lever indicated that they were shielded. The inspector observed that when the lever was moved to the "lock-out" or shielded position, radiation levels measured were 4.0 millirem per hour (mr/hr). Whereas, when the lever was moved to the "open" position, radiation levels diminished to 0.5 mr/hr. This reverse positioning could potentially result in unnecessary radiation exposures.

The fixed gauge was removed from service until it could be repaired by the manufacturer. The manufacturer repaired the device. No exposures to the licensee's staff were identified from this occurrence. The NRC is monitoring the manufacturer's follow-up actions regarding this occurrence.

This finding illustrates the importance of verifying assumptions regarding radiation levels near licensee equipment when conducting performance-based inspections. This includes not only the shutter position on fixed and portable gauges, but also licensee postings of "Radiation Area" and "High Radiation Area" as a means of identifying potentially significant health, safety and design issues. For additional information, please contact Mr. Sam Mulay at 630-829-9837 or email: SJM@NRC.GOV.

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Janet R. Schlueter, Director
Office of State and Tribal Programs