



**Docket File Information**

**SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION**

1. LICENSEE/LOCATION INSPECTED:  Manchester University 604 E. College Avenue North Manchester, IN 46962  REPORT NUMBER(S) 2018001	2. NRC/REGIONAL OFFICE  Region III U. S. Nuclear Regulatory Commission 2443 Warrenville Road, Suite 210 Lisle, IL 60532-4352
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3. DOCKET NUMBER(S)  030-08302	4. LICENSE NUMBER(S)  13-00267-04	5. DATE(S) OF INSPECTION  March 8, 2018
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6. INSPECTION PROCEDURES USED  87126	7. INSPECTION FOCUS AREAS  03.01-03.07
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**SUPPLEMENTAL INSPECTION INFORMATION**

1. PROGRAM CODE(S)  03620	2. PRIORITY  5	3. LICENSEE CONTACT  Dwight B. Beery, Ph.D.	4. TELEPHONE NUMBER  (260) 982-6021
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Main Office Inspection                      Next Inspection Date:                      03/08/2023  
 Field Office Inspection \_\_\_\_\_  
 Temporary Job Site Inspection \_\_\_\_\_

**PROGRAM SCOPE**

This was an unannounced, routine inspection of a small liberal arts academic program authorized by its NRC license for the use of one neutron howitzer, containing 5 Ci of americium-241, for activation studies in the undergraduate physics program. The college had an overall enrollment of 1300 students. The radiation program was composed of the Radiation Safety Officer (RSO) and a supervising user, who served as the Assistant RSO. The neutron howitzer was used only about twice a year, typically in the spring semester, to activate metals for a modern physics laboratory. The neutron howitzer was stored, and authorized for use, in a locked room of the Physics Department.

**PERFORMANCE OBSERVATIONS**

The inspector observed the area in which the unit was stored, and determined that the device was located as described in submitted license documentation, and was adequately secured and not readily accessible to members of the general public. According to licensee staff, the source was used and stored in this room, and was kept locked at all times of non-use. Interviews conducted during the inspection with the RSO and assistant RSO revealed that the unit is operated exclusively under the supervision and control of these two individuals. Independent measurements taken indicated a maximum reading of approximately 5.0 mR/hr at the unit surface and 0.5 mR/hr at three feet. Unrestricted areas (wall surface) adjacent to the stored device indicated less than 0.2 mr/hr. The licensee maintained two calibrated CDV survey instruments used during the academic year. A review of one instrument indicated adequate operation and comparison with the NRC unit. A review of select records since the previous inspection included: (1) survey meter use and calibration; (2) leak tests; and (3) inventory, with no issues identified.

The licensee was previously cited during a routine inspection conducted on February 25, 2013, (ref. IR 03008302/2013001(DNMS)) for two violations of regulatory requirements, specifically, for failure (1) to calibrate its survey meters every twelve months, as required by the license, and (2) to perform leak testing of its Am 241 sealed source every six months, as required by the license. The inspector confirmed that these two violations were corrected, and that the licensee's actions to prevent recurrence were effective in ensuring that no further violations of the survey meter calibration and leak testing requirements occurred. These violations are therefore closed.

No violations of NRC requirements were identified during this inspection.