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|--|--|--|---|--|----------------------------------|--|--|
| U.S. NUCLEAR REGULATORY COMMISSION<br>(10-2011)<br>10 CFR 2.201<br>SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION  |  |  |   |  |                                  |  |  |
| 1. LICENSEE/LOCATIO  | IN INSPECTED:  |  | 2. NRC/REGIONAL OFFICE  |  |                                  |  |  |
| Missouri University of Science and Technology<br>108 Campus Support Facility<br>1201 State St.<br>Rolla, MO 65409-0110   |  |  | Region III<br>U. S. Nuclear Regulatory Commission<br>2443 Warrenville Road, Suite 210<br>Lisle, IL 60532-4352 |  |                                  |  |  |
| REPORT NUMBER(S  |  | 4. LICENSE NUMBER  | (6)   | 5. DATE(S) OF INSPECTIO  | N                                |  |  |
| 030-32692  |  | 24-00513-40  |   | November 16, 2011  | • • •                            |  |  |
| LICENSEE:  |  |  |   |  |                                  |  |  |
| The inspection was a Regulatory Commissi procedures and represent the second se | in examination of the activities conduction (NRC) rules and regulations and the sentative records, interviews with per-<br>the inspection findings, no violations violation(s) closed.<br>tions(s), specifically described to you be | ne conditions of your<br>sonnel, and observati<br>were identified.<br>by the inspector as no | license. The inspection consis<br>ons by the inspector. The ins   | eted of selective examination<br>pection findings are as follo<br>ng cited because they were | ns of<br>ws:<br>self-identified, |  |  |
| non-repetitive, and corrective action was or is being taken, and the remaining criteria in the NRC Enforcement Policy, to exercise discretion, were satisfied.<br>Non-cited violation(s) were discussed involving the following requirement(s):  |  |  |   |  |                                  |  |  |
| vu   |  | see involving the folic  | mig foldirement(s).   |  |                                  |  |  |
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| <ul> <li>During this inspection, certain of your activities, as described below and/or attached, were in violation of NRC requirements and are being cited in accordance with NRC Enforcement Policy. This form is a NOTICE OF VIOLATION, which may be subject to posting in accordance with 10 CFR 19.11.</li> <li>(Violations and Corrective Actions)</li> </ul>   |  |  |   |  |                                  |  |  |
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| Statement of Corrective Actions  |  |  |   |  |                                  |  |  |
| I hereby state that, within 30 days, the actions described by me to the Inspector will be taken to correct the violations identified. This statement of corrective actions is made in accordance with the requirements of 10 CFR 2.201 (corrective steps already taken, corrective steps which will be taken, date when full compliance will be achieved). I understand that no further written response to NRC will be required, unless specifically requested.   |  |  |   |  |                                  |  |  |
| TITLE  | PRINTED NAME   |  | SIGNATURE   |  | DATE                             |  |  |
| LICENSEE'S<br>REPRESENTATIVE   |  |  |   |  |                                  |  |  |
| NRC INSPECTOR  | Robert P. Hays   |  | Tokul ?   | Eber   | uliel.                           |  |  |
| BRANCH CHIEF   | Tamara E. Bloomer  |  | K. Alam   | . (),  | 11/30/                           |  |  |

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NRC FORM 591M PART 1 (10-2011)

| NRC FORM 591M PART 3<br>(10-2011)<br>10 CFR 2.201<br>U.S. NUCLEAR REGULATORY COMMISSION<br>Docket File Information<br>SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION |                  |                                     |   |                                       |  |  |  |  |
|--|------------------|-------------------------------------|---|---------------------------------------|--|--|--|--|
| 1. LICENSEE/LOCATION INS   | SPECTED:         |                                     | 2. NRC/REGIONAL OFFICE  |                                       |  |  |  |  |
| Missouri University of Science and Technology<br>108 Campus Support Facility<br>1201 State St.<br>Rolla, MO 65409-0110<br>REPORT NUMBER(S) 11-01                         |                  |                                     | Region III<br>U. S. Nuclear Regulatory Commission<br>2443 Warrenville Road, Suite 210<br>Lisle, IL 60532-4352 |                                       |  |  |  |  |
| 3. DOCKET NUMBER(S)  |                  | 4. LICENSE NUMBER(                  | S)  | 5. DATE(S) OF INSPECTION              |  |  |  |  |
| 030-32692  |                  | 24-00513-40                         |   | November 16, 2011                     |  |  |  |  |
| 6. INSPECTION PROCEDURES USED  |                  | 7. INSPECTION FOCU                  | 7. INSPECTION FOCUS AREAS   |                                       |  |  |  |  |
| 87126  |                  | 03.01-03.07                         | 03.01-03.07   |                                       |  |  |  |  |
| SUPPLEMENTAL INSPECTION INFORMATION  |                  |                                     |   |                                       |  |  |  |  |
| 1. PROGRAM CODE(S)<br>03610  | 2. PRIORITY<br>3 | 3. LICENSEE CONTAC<br>Ray Bono, RSO |   | 4. TELEPHONE NUMBER<br>(573) 341-4305 |  |  |  |  |
| ✓ Main Office Inspection   |                  | Next Inspection                     | Date: 1   | 1/16/2014                             |  |  |  |  |
| Field Office Inspection  |                  |                                     |   |                                       |  |  |  |  |
| Temporary Job Site Inspection  |                  |                                     |   |                                       |  |  |  |  |
| PROGRAM SCOPE  |                  |                                     |   |                                       |  |  |  |  |

The licensee is authorized for atomic nos. 3-83, thorium, uranium, and various sealed sources to be used on the MUST campus. The licensee also possesses generally-licensed devices and licensed, under a separate license, for a research reactor. The majority of sealed sources are currently stored in the research reactor building or in the waste storage facility. The licensee currently has 16 radiation safety committee-approved authorized users. Minor research projects are periodically conducted on campus by no more than one or two authorized users which involves less than 1 millicurie of either H-3 or C-14 for each experiment protocol. Other research included sealed sources used in pebble-bed reactor protocols. No animal studies have been conducted since the previous inspection. Unsealed research isotopes are maintained, inventoried, and are currently decaying in storage, but none currently in use. Licensee procedures requires each authorized lab to be classified according to an A, B, C, or D, lab classification system. The licensee currently has 4 B labs and 9 C labs. Any radioactive waste is collected and handled by Rad. Safety Staff and periodically transferred to the waste storage facility. Rad. Safety staff consists of the RSO, two student health physicists , and one job offer pending for an additional full-time health physicist.

## Performance Observations

During the inspection, the RSO and research staff demonstrated/discussed: (1) lab area surveys, survey meter use and calibrations; (2) package ordering, receiving, and check-in procedures; (3) contamination surveys; (4) dosimetry; (5) research waste handling, storage and disposal procedures; (6) unsealed isotope inventory control; (7) security of licensed material and access to research labs; (8) radiation safety committee meetings, including approvals for research investigators and research protocols; (9) radiation safety program audits; (10) any minor contamination events (none); (11) staff training; (12) lab audits; (13) sealed source inventory and leak tests. The inspector performed independent and confirmatory radiation measurements, which indicated results consistent with licensee survey records and postings.