

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. LICENSEE/LOCATION INSPECTED: Washington University in St. Louis Washington University in St. Louis Campus St. Louis, MO REPORT NUMBER(S) 2012-001	2. NRC/REGIONAL OFFICE NRC Region III Office 2443 Warrenville Rd. Lisle, IL 60532
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3. DOCKET NUMBER(S) 030-38167	4. LICENSE NUMBER(S) 24-00167-14	5. DATE(S) OF INSPECTION 7/16-20/12
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LICENSEE:

The inspection was an examination of the activities conducted under your license as they relate to radiation safety and to compliance with the Nuclear Regulatory Commission (NRC) rules and regulations and the conditions of your license. The inspection consisted of selective examinations of procedures and representative records, interviews with personnel, and observations by the inspector. The inspection findings are as follows:

- 1. Based on the inspection findings, no violations were identified.
- 2. Previous violation(s) closed.
- 3. The violation(s), specifically described to you by the inspector as non-cited violations, are not being cited because they were 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.

Non-cited violation(s) were discussed involving the following requirement(s):

- 4. 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.
(Violations and Corrective Actions)

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 REPRESENTATIVE			
NRC INSPECTOR	Robert G. Gattone, Jr. Robert P. Hays	Robert G. Gattone, Jr. <i>[Signature]</i>	7/20/12 7/20/12
BRANCH CHIEF	YAMARA BLOOMER	<i>[Signature]</i>	8/7/12

Docket File Information
SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. LICENSEE/LOCATION INSPECTED: Washington University in St. Louis Washington University in St. Louis Campus St. Louis, MO REPORT NUMBER(S) 12-001	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) 030-38167	4. LICENSE NUMBER(S) 24-00167-14	5. DATE(S) OF INSPECTION 7/16-20/12
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6. INSPECTION PROCEDURES USED 87125	7. INSPECTION FOCUS AREAS 02.01-02.07
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SUPPLEMENTAL INSPECTION INFORMATION

1. PROGRAM CODE(S) 03210	2. PRIORITY 2	3. LICENSEE CONTACT Sue Langhorst, RSO	4. TELEPHONE NUMBER (314) 362-2988
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Main Office Inspection Next Inspection Date: 07/16/2014

Field Office Inspection

Temporary Job Site Inspection

PROGRAM SCOPE

The Radiation Safety Officer reported to the Assistant Vice Chancellor for Environmental Health and Safety. The radiation safety personnel were supervised by two senior health physicists, who reported to the Associate RSO. The licensee's radiation safety staff included 12 individuals who are assigned specific duties relating to the radiation safety program to ensure compliance with license requirements. The licensee operated three cyclotrons for the production of radioactive materials (a.k.a. Positron Emission Tomography radiopharmaceuticals) used in medicine (i.e., CS-15 Cyclotron, RDS Cyclotron, and JSW Cyclotron).

Performance Observations

The inspectors observed: (1) that all three cyclotron facilities were as described in the license; (2) that the cyclotron facilities were posted as required; (3) that licensee staff used appropriate and calibrated surveys instruments to conduct ambient exposure rate surveys; (4) that the inspectors' confirmatory survey result was the same as the licensee's survey result; (5) a Cyclotron Operator demonstrate and describe how he had conducted cyclotron filament replacement, which included pre-work ambient exposure rate surveys in strategic areas; (6) licensee staff wear whole body and extremity dosimetry badges; (7) that the facilities were equipped with operating "cyclotron on" warnings; (8) a Radiation Safety Specialist demonstrate how she conducted radiation safety audits of the CS-15 Cyclotron Facility; (9) that licensee staff members knew the action levels for ambient exposure rate and removable contamination radiation surveys and how to respond if the action levels were exceeded; (10) that the CS-15 Cyclotron Facility audible and visible alarm functioned when the steel doors closed; (11) that, based on a scenario posed by the inspectors, the staff knew they must shut down the CS-15 Cyclotron if the facility doors open with the cyclotron on; (12) a maximum of 20 mR/hr at the surface of the RDS Cyclotron and 5 mR/hr at the RDS Cyclotron target bunker surface using an NRC Ludlum Model 2403 survey instrument that was calibrated less than 1 year ago; (13) a Cyclotron Operator demonstrate how he conducted daily operability checks of the survey instruments prior to first use each day; and (14) that selected fire extinguishers were checked at the correct frequency.