NRC FORM 591 PART 1
(10-2011)
10 CFR 2.201

U.S. NUCLEAR REGULATORY COMMISSION

SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. LICENSEE/LOCATION INSPECTED:	2. NRC/REGIONAL OFFICE
Boone Hospital Center 1600 East Broadway, Columbia, MO. and 1605 East Broadway, Columbia, MO. REPORT NUMBER(S) 2012-001	Region III U. S. Nuclear Regulatory Commission 2443 Warrenville Road, Suite 210 Lisle, IL 60532-4352

3. DOCKET NUMBER(S)	4. LICENSE NUMBER(S)	5. DATE(S) OF INSPECTION
030-02304	24-01565-01	2/14-3/21/12

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 violations(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	Jason M. Razo	for	3/26/12
BRANCH CHIEF	Tamara E. Bloomer	Ken Lambert for	3/27/12

NRC FORM 591M PART 3
(10-2011)
10 CFR 2.201

U.S. NUCLEAR REGULATORY COMMISSION

Docket File Information

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6. INSPECTION PROCEDURES USED	7. INSPECTION FOCUS AREAS
87131	03.01-03.09

SUPPLEMENTAL INSPECTION INFORMATION

1. PROGRAM CODE(S)	2. PRIORITY	3. LICENSEE CONTACT	4. TELEPHONE NUMBER
02120	3	Liesje Myers, RSO	(573) 815-3729

☑ Main Office Inspection Next Inspection Date: 02/2015

☑ Field Office Inspection 1605 East Broadway, Columbia, MO.

☐ Temporary Job Site Inspection

PROGRAM SCOPE

Licensee is a 400-bed full service hospital located in Columbia, Missouri. Radiation Safety Officer (RSO) reports to the Director of Imaging Services. The Director of Imaging Services reports to the Vice President and Chief Operating Officer. The Vice President and Chief Operating Officer reports to the President. Licensed activities are divided into three functional areas: nuclear medicine at the main hospital (35.100-300, including PET), brachytherapy services at the main hospital (35.400 permanent implant seeds), and nuclear medicine at the Cardiac Diagnostic Center (CDC) (35.100-200 only, including Rb-82). The RSO oversees all program areas and is responsible for a secured closet decay-in storage and older sealed sources.

Performance Observation

The main hospital nuclear medicine department provides an array of imaging, diagnostic, and therapeutic studies using I-123, I-131, Tc-99m. F-18, and other radioisotopes. Up to 25 scans per day may be performed by up to 5 nuclear medicine technologists (NMT). Opening shift beings equipment calibration at 0600. Security of the deppartment and of the hotlab was adequate.

All staff were observed wearing required dosimetry; maximum doses through 2011 were 461 mrem DDE, and 1960 mrem SDE. Required posting were available at all areas of use and storage. Independent surveys conducted by the inspector verified that radiation levels were within regulatory limits. Observed demonstrations of package receipt procedures, daily area surveys, and weekly contamination wipes. Reviewed records of required calibrations for dose calibrators and survey instruments. Reviewed written directives for I-131, P-32 and Sm-153. I-131 treatments occur every other month; files had all information required by title 10 Code of Federal Regulations (CFR) 35.41 and justification for release of patients administered greater than 33 mCi. other records reviewed included annual audits, training, radiation safety committee meeting minutes, waste disposal, and sealed source leak test and inventories.

The CDC is located across the street from the main hospital. It includes a small hotlab and two NMTs. They perform only outpatient cardiology servies. Their CardioGem-82 program was dormant at the time of the inspection due to the manufacturer's recall. observed NMTs follow all safety policies and protocols.

NRC FORM 591 PART 2
(10-2011)
10 CFR 2.201

U.S. NUCLEAR REGULATORY COMMISSION

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(Continued)

Brachytherapy program includes permanent implant of I-125 seeds and occasionally Pd-103. Radiation therapy staff at Missouri Cancer Associates (030-37082) assists with the procedures and dose modeling. Typical treatment used between 80-120 seeds to administer 145 Gy. Licensee averaged two patients per month until Fall 2011. Unused seeds are returned to the manufacturer. Corrective actions from inspection report 03002304/08-001 were adequate and the violation is closed. Treatment documentation included verification that the treatment room and ancillary materials were at background radiation levels. Pre and post plan reviews indicated that no patients received doses in excess of plus or minus twenty percent of the intended dose to the prostate. No violations were identified.

A clear 591M Part was issued from the Region III office.