

## SAFETY INSPECTION REPORT AND COMPLIANCE INSPECTION

1. LICENSEE/LOCATION INSPECTED:  Michigan State University FRIB-NSCL 640 South Shaw Lane East Lansing, MI 48824  REPORT NUMBER(S) 202001		2. NRC/REGIONAL OFFICE  Region III U. S. Nuclear Regulatory Commission 2443 Warrenville Road, Suite 210 Lisle, IL 60532-4352	
3. DOCKET NUMBER(S)  030-39039	4. LICENSE NUMBER(S)  21-00021-31	5. DATE(S) OF INSPECTION  February 5, 2020	

## 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	Luis Nieves Folch	Luis A. Nieves Folch	Digitally signed by Luis A. Nieves Folch Date: 2020.02.25 11:50:42 -06'00'
BRANCH CHIEF	Robert Ruiz	Robert Ruiz	Digitally signed by Robert Ruiz Date: 2020.02.25 14:53:59 -06'00'

**Docket File Information**

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6. INSPECTION PROCEDURES USED  87126	7. INSPECTION FOCUS AREAS  All		

**SUPPLEMENTAL INSPECTION INFORMATION**

1. PROGRAM CODE(S)  03210	2. PRIORITY  2	3. LICENSEE CONTACT  Petra Grivins - RSO	4. TELEPHONE NUMBER  (517) 749-8527
<input checked="" type="checkbox"/> Main Office Inspection      Next Inspection Date: February 5, 2022			
<input type="checkbox"/> Field Office Inspection _____			
<input type="checkbox"/> Temporary Job Site Inspection _____			

**PROGRAM SCOPE**

This was an unannounced, routine inspection of an R&D facility that possesses two cyclotrons and one linear accelerator to perform research and produce radioactive isotopes for research. Since the last inspection, the licensee had produced Calcium 47 and transferred the isotope to the Michigan State University license. Also, the licensee used sealed sources for the calibration of radiation instruments. The licensee had no unsealed licensed material at the time of the inspection. The licensee expects to start producing more radioactive isotopes in the near future.

**Performance Observations**

The inspector toured the facilities to evaluate the licensee's measures for material security, hazard communication, and exposure control. Dosimeter badges records showed that the highest whole body and extremity doses were well below the regulatory limits. The inspectors obtained information regarding physical inventories of selected sealed sources, sealed source leak testing, survey instruments and calibration, and there were no concerns. The licensee used Radiation Work Permits for doing cyclotron maintenance and repair to keep radiation doses down. Records showed that selected authorized users were approved by the licensee based on the required information Selected Radiation Safety Committee meeting minutes included applicable information. Selected records showed that authorized users were approved by the licensee based on the required information.

No violations of NRC requirements were identified as a result of this inspection.

**Shaughnessy, Patrice**

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**From:** Nieves Folch, Luis  
**Sent:** Wednesday, February 26, 2020 5:54 AM  
**To:** Grivins, Petra  
**Subject:** FW: Michigan State FRIB cyclotron 591 SignedM.pdf  
**Attachments:** Michigan State FRIB cyclotron 591 SignedM.pdf

Dear Mrs. Grivins

Attach is the clear 591 report for the inspection conducted on February 5, 2020. At this point there is no further actions on your part.

In accordance with Title 10 of the Code of Federal Regulations 2.390 of the NRC's "Rules of Practice," a copy of this message will be available electronically for public inspection in the NRC's Public Document Room or from the NRC's Agencywide Documents Access and Management System (ADAMS), accessible from the NRC's website at <http://www.nrc.gov/reading-rm/adams.html>.

Please feel free to contact me if you have any questions regarding this correspondence.

Thank you,

Luis Nieves  
Health Physicist  
U.S. Nuclear Regulatory Commission  
Division of Nuclear Materials Safety  
Office: (630) 829-9571  
Fax: (630) 515-1259