On October 7, 2016 (from 11:00 a.m. to 12:15 p.m.), the undersigned conducted a regular (radiation) inspection of Memorial University. Assistance was provided by Mr. Rod Hobbs (Radiation & Biological Safety Officer) and Ms. Patricia Mulroney (Laboratory Manager).

According to Mr. Hobbs, the university currently has ownership of 15 provincially-regulated radiation-emitting devices (with 1 located at Labrador Institute). This inspection focused on the equipment with Registration No. REV1203040882. The following information was verified during the inspection:

1. Registration No.: REV1203040882
2. OHS Control ID No.: Unknown (marker absent)

Manufacturer: Sterne
Model: Acu-Ray Junior (Portable Multi-purpose X-Ray)
Serial No.: D04ARJ5682

Location: Health Sciences Centre (Responsible Party: Dr. Thomas Michalak)
Area/Room: HSC-1721 (storage location only)
Remote Control: Connected Hand Switch

Reportedly, Equipment [1] has not been used for an extended period of time. It was intended for an earlier research project and the only known operator is a veterinarian technician who does not work at the university on a regular basis. Because of this, exposure monitoring by radiation dosimeters is not being conducted in association with Equipment [1].

The seldom use of Equipment [1] was also stated as a reason for not having performed a radiation protection survey in the recent two years. In any case, we currently require that all provincially-regulated radiation-emitting equipment undergo radiation protection surveys at least once every two years. More frequent testing may be specified by the equipment manufacturer or if deemed necessary by the OHS Division. To Mr. Hobbs' knowledge, the last radiation protection survey was performed by OHS Officer Al Samms in between 2003 and 2004.

A copy of this inspection/order report must be provided at the earliest possible opportunity to your OHS Committee, Worker Representative or Workplace Designate.
The operating manual for Equipment [1] was stored nearby. Employees are given access to "Safety Requirements and Guidance for Analytical X-ray Equipment - Safety Code 32" through a link posted in the EH&S section of the university's website, under "X-Ray Safety".

Mr. Hobbs and Ms. Mulroney were unsure whether personal radiation protective equipment are used by employees when operating Equipment [1]. They believe that operators step out of the lab and activate the X-ray using a hand switch connected to the unit. More information is required to verify that the set-up used for operating Equipment [1] provides adequate shielding.

An appropriate warning label was observed on Equipment [1].

Mr. Hobbs provided copies of the recently revised internal X-Ray safety training material and X-Ray safety manual.

Since the current condition of Equipment [1] is undetermined, the employer is directed to effectively remove it from service. Until satisfactory radiation protection survey results and acceptable standard operating procedures have been obtained for Equipment [1], Equipment [1] shall not be used, but be locked in storage with access controlled by the site RSO. Other non-compliant portable equipment could be stored in the same locked room. Effective locks shall be placed on non-compliant equipment which could not be moved, to prevent power-up. Alternatively, inactive equipment could be formally decommissioned through the OHS Division.

In total, 4 Orders are being issued in conjunction with this report.

A copy of this inspection/order report must be provided at the earliest possible opportunity to your OHS Committee, Worker Representative or Workplace Designate.
ORDER FORM
Reference #: 1080059
OCT 7,2016

Toll Free: 1-800-563-5471

MEMORIAL UNIVERSITY OF NFLD
DEPT OF HUMAN RESOURCES
ST JOHNS
NL

ORDER: 1080059- 01
ACT: Radiation Health and Safety Act
5 - 2 -Owner to Register

During the month of September in each year an owner shall register with the assistant deputy minister, in the form prescribed by the regulations.

TO WIT:

The employer shall ensure that an application is submitted to the OHS Division for each radiation-emitting device requiring re-registration.

Note: Indicate on application forms whether the OHS ID sticker/marker and/or registration certificate is missing for the equipment to be re-registered.

This Order shall be carried out on or before: NOV 7,2016

ORDER: 1080059- 02
ACT: Radiation Health and Safety Act
5 - 1 -Owner to Register

A person who becomes an owner of a radiation installation or radiation equipment shall, within 30 days after that person becomes an owner, register with the assistant deputy minister in the form prescribed by the regulations.

TO WIT:

The employer shall ensure that OHS Control ID marker/stickers, once received, are affixed to the respective equipment, on or near the main controls.

A copy of this inspection/order report must be provided at the earliest possible opportunity to your OHS Committee, Worker Representative or Workplace Designate.
ORDER FORM

Reference #: 1080059

ORDER: 1080059- 03

ACT: Radiation Health and Safety Act
       6 - 1f - Responsibility of Owner

The owner of radiation equipment shall, where directed by the minister, discontinue the use of radiation equipment, until changes have been made with the radiation equipment or the radiation equipment's manner of operation.

TO WIT:

The employer shall ensure that the Sterne Acu-Ray Junior is locked in storage, with access controlled by the site radiation safety officer. The use of the Sterne Acu-Ray Junior shall be discontinued until satisfactory radiation protection survey results and acceptable standard operating procedures have been obtained.

This Order shall be carried out on or before: NOV 18, 2016

ORDER: 1080059- 04

ACT: Radiation Health and Safety Act
       6 - 1a - Responsibility of Owner

The owner of radiation equipment shall, where directed by the minister, install radiation equipment in accordance with standards of safety prescribed by the regulations;

TO WIT:

The employer shall assess the need to remove other owned radiation-emitting devices from service based on unavailability of satisfactory radiation protection survey results and acceptable standard operating procedures. Submit a summary of findings and corrective actions.

This Order shall be carried out on or before: NOV 1, 2016

A copy of this inspection/order report must be provided at the earliest possible opportunity to your OHS Committee, Worker Representative or Workplace Designate.
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<tr>
<th>Received By:</th>
<th>Dr. Rod Hobbs</th>
<th>Rod Hobbs</th>
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<tbody>
<tr>
<td>Position:</td>
<td>Radiation and Biological Safety Control Officer</td>
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<tr>
<td>Officer's Name:</td>
<td>Cheuk, Ivan</td>
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| Return Address: | P.O. Box 8700  
St. John's, NL, A1B 4J6 |
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<td>Fax:</td>
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A copy of this inspection/order report must be provided at the earliest possible opportunity to your OHS Committee, Worker Representative or Workplace Designate.