The Workers Compensation Act requires that the employer must post a copy of this report in a conspicuous place at or near the workplace inspected for at least seven days, or until compliance has been achieved, whichever is the longer period. A copy of this report must also be given to the joint committee or worker health and safety representative, as applicable.

### Inspection Report #201917871102B

<table>
<thead>
<tr>
<th>Employer Name</th>
<th>Jobsite Inspected</th>
<th>Scope of Inspection</th>
</tr>
</thead>
<tbody>
<tr>
<td>SIMON FRASER UNIVERSITY</td>
<td>8888 University Dr</td>
<td>Education Building (Mechanical Room #6): Incident Response</td>
</tr>
</tbody>
</table>

**Date of Initiating Inspection** | **Date of This Inspection** | **Delivery Date of This Report** | **Delivery Method**
--- | --- | --- | ---
Oct 11, 2019 | Nov 26, 2019 | Nov 26, 2019 | Email

**THERE ARE TWO (2) ORDERS OR OTHER ITEMS OUTSTANDING**

**ACTION REQUIRED**

**Summary of Orders or other Items**

See “Orders/Items – Full Details” section of this Inspection Report for orders/items cited

- **Order/Item No.1**: Status: **Closed**
  - Cited: **OHS10.2**
- **Order/Item No.2**: Status: **Outstanding**
  - Cited: **OHS10.4(1)**
- **Order/Item No.3**: Status: **Outstanding**
  - Cited: **WCA115(2)(e)**

**ORDER STATUS LEGEND**

<table>
<thead>
<tr>
<th>Order Status</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Outstanding</td>
<td>Order Outstanding - Action Required to Achieve Compliance</td>
</tr>
<tr>
<td>Complied</td>
<td>Compliance Achieved - No Further Action Required</td>
</tr>
<tr>
<td>Closed</td>
<td>Order is Closed</td>
</tr>
<tr>
<td>Rescinded</td>
<td>Order has been cancelled – No Further Action Required</td>
</tr>
</tbody>
</table>
INSPECTION NOTES

This was a follow-up inspection to authenticate appropriate compliance with the order(s) noted in the Inspection Report (IR) 201917871102A.

This Inspection Report (IR) is issued as a result of receipt of correspondence from the employer and is related to IR201917871102A.

Documents Received:

On October 16, 2019, the employer representative provided the following documentation for review:

- Material Safety Data Sheet for Artisan MIT (use for hot water and chilled system water treatment), dated May 1, 2019
- Draft Lockout / Isolation Procedures for Heating Pumps (issue date: October 16, 2019)
- Facilities Services Employee Orientation Test (May 29, 2018, July 24, 2019)

Upon review of the "Facilities Services, New and Young Employee Safety Orientation" presentation, it appears to contain the topics or elements as outlined in section 3.23 of the *Occupational Health and Safety Regulation*.

On November 18, 2019, the employer representative provided the following documentation for review:

- Notice of Compliance (NOC) report (dated November 18, 2019);
- Lockout / Isolation Heating Pumps Procedures (dated October 22, 2019); and
- Worker instruction/training record related to the Lockout / Isolation Heating Pump Procedures (dated October 16, 2019 and again on November 14, 2019).

Next Steps:

The NOC indicates that an inventory of all heating pumps at the Burnaby Campus is being conducted, equipment/machine specific lockout/isolation procedures will be developed upon completion of the inventory, and worker training will be provided once the written procedures have been developed. The NOC indicates that these actions are anticipated to be completed by January 15, 2020.

Therefore, I will extend the follow-up due date for Orders #2 and #3 to January 31, 2020 for the employer to achieve compliance and to provide the following documents to me for review:

- Inventory of heat pumps,
- Equipment/machine specific lockout procedures, and
- Worker training records.

*Compliance is in progress for Orders #2 and #3. Please see Order Text for details.*

Contact Information:

If you have any questions regarding this report, please contact me.

Yvonne Nann
Occupational Hygiene Officer
Prevention Field Services
e-mail: yvonne.nann@worksafebc.com

Mailing address: PO Box 5350 Stn Terminal, Vancouver BC V6B 5L5
worksafebc.com | T 604.232.5985 | 1.888.621.7233 | F 604.232.5950
More information about health and safety, including the Workers Compensation Act and the Occupational Health and Safety Regulation may be found at the WorkSafeBC website (www.worksafebc.com).

To report a serious accident/incident or major chemical release, call: 604.276.3100 in the Lower Mainland; 888.621.7233 toll-free within B.C. To report after hour health and safety emergencies, call 866.922.4357.
**ORDERS/ITEMS**

An employer who fails to comply with Part 3 of the *Workers Compensation Act*, the Occupational Health & Safety Regulation, or WorkSafeBC orders may be subject to monetary or other sanctions as prescribed by the *Workers Compensation Act*.

<table>
<thead>
<tr>
<th>Order/Item No.1</th>
<th>Status: Closed</th>
<th>Cited: OHS10.2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Order/Item No.1</td>
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</tbody>
</table>

The employer representative stated that after the occurrence of the incident, hot water in the pipe of the hot water heating system was shut off and isolated to the pump #25 area. I observed an isolation valve located upstream and another isolation valve downstream to the mechanical hot water pump #25. There are not specific markings or indications to determine if the valves were closed or open to effectively isolate and control the energy source (e.g., hot water with approximate temperature of 95 degrees Celsius). A drain spigot lever or bleed valve was also observed near the mechanical hot water pump #25 that was intended to drain the water between the upstream and downstream isolation valves. This bleed valve was observed to be in the horizontal or closed position during this inspection. In discussions with a worker representative, it was uncertain if the isolation valves were closed or the water was adequately and effectively isolated and control prior to the removal of the mechanical hot water pump #25.

Therefore, the employer did not ensure that the energy source (e.g., hot water) was effectively and adequately isolated and controlled prior to the commencement of work activities on the hot water heating system.

This is in contravention of the Occupational Health and Safety Regulation Section 10.2.

If the unexpected energization or startup of machinery or equipment or the unexpected release of an energy source could cause injury, the energy source must be isolated and effectively controlled.

**Measures to Ensure Compliance:**

The employer must ensure that all energy sources (e.g., hot water, electrical, kinetic, potential, etc.) are adequately and effectively isolated and controlled before the commencement of any work on the equipment, machinery, or system where there is an unexpected energization or startup of machinery or equipment or the unexpected release of an energy source that could cause injury.

This order is coded as "closed" because after the occurrence of the incident, hot water to pump #25 had been isolated, isolation valves have been placed in the closed position, and there was no water leaking from the piping system at the pump #25 location.
### Orders/Items - Full Details

<table>
<thead>
<tr>
<th>Order/Item No.</th>
<th>Status</th>
<th>Cited</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
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<td>OHS10.4(1)</td>
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</table>

#### Progress towards compliance:
**Order/Item No.2**
- **Status:** Outstanding
- **Cited:** OHS10.4(1)

**Progress towards compliance:**
**Nov 26, 2019 - Compliance in progress** - On November 18, 2019, the employer representative provided a copy of the Notice of Compliance (NOC) which outlined immediate interim actions taken and actions to be taken, which included the following:

- Developed interim general lockout/isolation procedures for heating pumps (completed on October 22, 2019);
- Provided worker instructions/training on the general lockout/isolation procedures for heating pumps which was held on October 16 and November 14, 2019;
- Will prepare an inventory of all heating pumps at the Burnaby Campus by December 11, 2019;
- Will categorize, assess, and develop written equipment/machine specific safe work procedures and lockout/isolation procedures by January 8, 2020; and
- Will provide education and training to all Maintenance & Operations staff on the new procedures by January 15, 2020.

Upon completion and to support compliance with this order, the employer is requested to submit the inventory, equipment specific lockout/isolation procedures, and training records by **January 31, 2020**.

#### Initiating order:
**Oct 11, 2019 -** Two workers of this employer were performing planned maintenance on the hot water close loop heating system in Mechanical Room #6, Room 765 of the Education Building. The work involved the removal and replacement of the mechanical hot water pump #25 in the piping system that contains hot water with approximately temperature of 95 degrees Celsius. An isolation valve was observed to be permanently installed at the upstream of the pipe and another isolation valve was permanently installed at the downstream of pump #25. A drain spigot or bleed valve is also located near pump #25 for the purpose of draining the water between the two isolation valves.

Lockout of energy isolating devices (e.g., isolation valves) was required, and the devices were not secured in the safe position using locks in accordance with the necessary procedures. When asked, lockout and isolation procedures were not available or had not been made readily available to all workers required to work on the machinery or equipment.

This is in contravention of the Occupational Health and Safety Regulation Section 10.4(1).

When lockout of energy isolating devices is required, the devices must be secured in the safe position using locks in accordance with procedures that are made available to all workers who are required to work on the machinery or equipment.

#### Measures to Ensure Compliance:
Without undue delay, the employer must develop machine/equipment specific written lockout and isolation procedures for the replacement of mechanical pumps in the hot water heating system and make these procedures readily available to all workers who are required to work on the machinery or equipment.

<table>
<thead>
<tr>
<th>Order/Item No.</th>
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<tbody>
<tr>
<td>3</td>
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<td>WCA115(2)(e)</td>
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</table>

#### Progress towards compliance:
**Order/Item No.3**
- **Status:** Outstanding
- **Cited:** WCA115(2)(e)

**Progress towards compliance:**
**Nov 26, 2019 - Compliance in progress** - On November 18, 2019, the employer representative provided a copy of the worker instruction/training record for the general lockout/isolation procedures for heating pumps held on October 16 and November 14, 2019.

The employer representative also provided a copy of the Notice of Compliance (NOC) indicating that all Maintenance & Operations staff will be provided with the new equipment specific safe work procedures and lockout/isolation procedures by January 15, 2020. Upon completion, the employer is requested to provide a copy of the training records to WorkSafeBC by January 31, 2020.
Orders/Items - Full Details

**Initiating order:**

**Oct 11, 2019** - This employer has not provided the workers with adequate information, instruction, training and supervision to this specific equipment or task to ensure the health and safety of those workers in carrying out their work and to ensure the health and safety of other workers at the workplace. This is evidenced by but are not limited to:

- No written equipment specific lockout and isolation procedures had been developed or available prior to the incident to provide workers with information and instruction to perform their tasks.

- Discussions with worker representatives revealed that the performance of this task was from past experience, informal discussions among workers, and no specific guidance on replacing mechanical hot water pumps.

This is in contravention of the Workers Compensation Act Section 115 (2)(e).

An employer must provide to the employer's workers the information, instruction, training and supervision necessary to ensure the health and safety of those workers in carrying out their work and to ensure the health and safety of other workers at the workplace.

**Measures to Ensure Compliance:**

Without undue delay, the employer must ensure that any worker who is required to perform work on this equipment, machine, or hot water heating system at this workplace is provided with adequate and effective instruction, education, and training prior to the commencement of work. To achieve compliance, the employer must provide me with records of worker instruction, education, and/or training on this specific task.
<table>
<thead>
<tr>
<th>Employer #</th>
<th>Mailing Address</th>
<th>Classification Unit #</th>
<th>Operating Location</th>
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<tbody>
<tr>
<td>112786</td>
<td>8888 UNIVERSITY DR BURNABY BC V5A 1S6</td>
<td>765010</td>
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<table>
<thead>
<tr>
<th>Lab Samples Taken</th>
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<th>Results Presented</th>
<th>Sampling Inspection(s)</th>
<th>Workers onsite during Inspection</th>
<th>Notice of Project Number</th>
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<tr>
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<table>
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<tr>
<th>Inspection Report Delivered To</th>
<th>Employer Representative Present During Inspection</th>
<th>Worker Representative Present During Inspection</th>
<th>Labour Organization &amp; Local</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melinda Skura</td>
<td>Melinda Skura</td>
<td>Not Available</td>
<td></td>
</tr>
</tbody>
</table>

**WorkSafeBC Officer Conducting Inspection**

Yvonne Nann

**Inspection Time**

<table>
<thead>
<tr>
<th></th>
<th>Travel Time</th>
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<tbody>
<tr>
<td>1.50 hrs</td>
<td>0.50 hrs</td>
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</table>

*The time recorded above reflects the inspection time and travel time associated with this inspection report and includes time spent on pre and post-inspection activities. Additional time may be added for subsequent activity.

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**Right to Review**

Any employer, worker, owner, supplier, union, or a member of a deceased worker's family directly affected may, within 45 calendar days of the delivery date of this report, in writing, request the Review Division of WorkSafeBC to conduct a review of an order, or the non-issuance of an order, by contacting the Review Division. Employers requiring assistance may contact the Employers’ Advisers at 1-800-925-2233.

WorkSafeBC values your feedback. To obtain that feedback, an external market research provider may be contacting you to complete a survey.