WORK SAFE BC

6951 Westminster Highway, Richmond, BC
Mailing Address: PO Box 5350, Vancouver BC, V6B 5L5
Telephone 604 276-3100 Toll Free 1-888-621-7233 Fax 604 276-3247

FOLLOW UP INSPECTION REPORT #3
Worker and Employer Services Division

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 #201717538077D

Employer Name	Jobsite Inspected	Scope of Inspection
THE UNIVERSITY OF BRITISH COLUMBIA	THUNDERBIRD WINTER SPORTS 6066 THUNDERBIRD BLVD Vancouver BC V6T 2E5	Ammonia Inspection Initiative

Date of Initiating Inspection	Date of This Inspection	Delivery Date of This Report	Delivery Method
Dec 07, 2017	Apr 06, 2018	Apr 06, 2018	Email

THERE ARE ZERO (0) ORDERS OR OTHER ITEMS OUTSTANDING

ACTION MAY STILL BE NECESSARY TO ENSURE COMPLIANCE
PLEASE READ FULL REPORT

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: **Complied**	Cited: **OHS6.127(2)**
Order/Item No.2 ☑	Status: **Complied**	Cited: **OHS6.128(3)(a)**
Order/Item No.3 ☑	Status: **Complied**	Cited: **OHS6.119**
Order/Item No.4 ☑	Status: **Complied**	Cited: **OHS5.102(b)**
Order/Item No.5 ☑	Status: **Complied**	Cited: **OHS5.97(1)**

ORDER STATUS LEGEND	
Order Status	**Description**
Outstanding	Order Outstanding - Action Required to Achieve Compliance
Complied	Compliance Achieved - No Further Action Required
Closed	Order is Closed
Rescinded	Order has been cancelled – No Further Action Required

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INSPECTION NOTES

This was a follow-up inspection to authenticate appropriate compliance with the order(s) noted.

Current Status

All orders cited in this inspection report have been complied.

If any person at this workplace has any questions or requires further information regarding this inspection report, please contact:

Yat Chow
Occupational Hygiene Officer
Email: yat.chow@worksafebc.com
Fax: 604-231-8662
Phone: 604-276-3100 Ext. 6407
Address: PO Box 5350 Stn. Terminal, Vancouver, BC, V6B 5L5

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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*.

Orders/Items - Full Details

Order/Item No.1 ☑	Status: **Complied**	Cited: **OHS6.127(2)**

Progress towards compliance:
Mar 08, 2018 - Compliance achieved. The employer has revised written work procedures such as draining the chillers to include the use of full facepiece respirators fitted with ammonia cartridges.

Jan 19, 2018 - As stated in the NOC report, workers requiring to perform hazardous worker procedures on machinery have been provided with full face piece respirators with ammonia cartridges. Further, 6 of 7 workers have been fit tested and 7th worker was expected to be fit tested on January 17, 2018. This officer will confirm compliance at a follow-up inspection.

Initiating order:
Dec 07, 2017 - The employer and worker representatives stated that currently workers performing a hazardous work procedures on machinery such as draining the oil from the chiller where there is a risk of ammonia gas being released directly into the breathing zone of the worker are not wearing full facepiece respirator fitted with ammonia cartridges. The representatives stated that workers are using half-mask respirators for such a task. Without adequate respiratory protection, eye and face protection while carrying out this job tasks put the worker at serious risk of exposure to ammonia.

This is in contravention of Occupational Health and Safety Regulation Section 6.127(2).

A worker performing a hazardous work procedure on equipment or machinery where there is the risk of toxic process gas being released directly into the breathing zone, such as cylinder changing, system or line purging or draining, and leak detection and repair, must wear an appropriate respirator.

Measures to Ensure Compliance:
Without undue delay, the employer must ensure workers are wearing at least a fit tested full facepiece respirator equipped with ammonia cartridges when workers are assigned to perform a hazardous work procedure on machinery such as draining oil from the chiller.

Pursuant to section 194 (1) of the Workers Compensation Act, the employer must prepare a Notice of Compliance report. In accordance with section 194 (2), this report must detail what has been done to comply with the order, and where compliance has not been achieved by the time the report has been submitted, include a plan of what will be done to comply and when compliance will be achieved. Please submit the report no later than January 12, 2018.

Order/Item No.2 ☑	Status: **Complied**	Cited: **OHS6.128(3)(a)**

Progress towards compliance:
Mar 08, 2018 - Compliance achieved. The employer has retained the services of a contractor to perform monthly testing of the ammonia sensors. The officer observed the documentation for the "bump" test from the contractor for January and February 2018.

Jan 19, 2018 - As stated in the NOC report, the employer has engaged a third party vendor to validate the proper operation of the ammonia sensors alarms on a monthly basis. The first monthly test was expected the week of January 15, 2018. This officer will confirm compliance at a follow-up inspection.

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Orders/Items - Full Details

Initiating order:

Dec 07, 2017 - The ammonia room ammonia sensor and alarm systems is currently not tested at least monthly for proper operation by authorized personnel.

This is in contravention of the Occupational Health and Safety Regulation Section 6.128(3)(a).

Monitoring and alarm systems must be
(a) tested at least monthly for proper operation by authorized personnel using procedures set out in section 4.3 (2) or other procedures acceptable to the Board.

Measures to Ensure Compliance:
Pursuant to section 194 (1) of the Workers Compensation Act, the employer must prepare a Notice of Compliance report. In accordance with section 194 (2), this report must detail what has been done to comply with the order, and where compliance has not been achieved by the time the report has been submitted, include a plan of what will be done to comply and when compliance will be achieved. Please submit the report no later than January 12, 2018.

Order/Item No.3 ☑	Status: **Complied**	Cited: **OHS6.119**

Progress towards compliance:

Mar 08, 2018 - Compliance achieved. The employer has developed an exposure control plan for ammonia meeting the requirements of OHS 5.54.

Jan 19, 2018 - The employer is working towards compliance. Refer to inspection notes for details.

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Orders/Items - Full Details

Initiating order:

Dec 07, 2017 - The employer has developed and implemented an Ammonia exposure control plan (ECP). The employer representatives reported that that the ECP was not fully compliant and was in the process of reviewing it. Several deficiencies were noted including, but not limited to:
- The ECP did not identify how much ammonia was present and where it was located;
- The ECP did not have sections on responsibility of the employer (e.g. ensure that the ECP is developed and maintained and the joint health and safety committee or worker representative;
- The responsibility of a worker did not include the use person protective equipment and the reporting of unsafe conditions to the supervisor or employer;
- The risk assessment required did not include the circumstances, events, failures or errors that could cause conditions leading to an emergency;
- The risk assessment in the ECP identifies Low, Moderate and High risk activities, but there is no indication as to the frequency and duration of these tasks;
- The ECP identified an exposure limit of 50 ppm (ceiling) in which this value is not identified in the WorkSafeBC's Table of Exposure Limits;
- The procedure to use exterior doors to help ventilate the ammonia plant room circumvents OHS Regulation 6.122(a);
- Information on controls, such as PPE, does not reflect the hazard and level of PPE required (e.g. the use of a half-mask respirator while draining the chiller);
- Requirements for workplace inspections for the system is not identified;
- Record keeping is not identified as a requirement in the documents;
- The representatives were not aware when the ECP was last reviewed in consultation with the joint committee.

The employer has failed to develop an exposure control plan meeting the requirements of section 5.54, and the risk assessment indicates a risk of adverse health effect to workers from exposure to a toxic process gas.

This is in contravention of the Occupational Health and Safety Regulation Section 6.119.

If there is a risk of adverse health effect to workers from exposure to a toxic process gas, based on the risk assessment, the employer must develop and implement an exposure control plan meeting the requirements of section 5.54.

Measures to Ensure Compliance:
Pursuant to section 194 (1) of the Workers Compensation Act, the employer must prepare a Notice of Compliance report. In accordance with section 194 (2), this report must detail what has been done to comply with the order, and where compliance has not been achieved by the time the report has been submitted, include a plan of what will be done to comply and when compliance will be achieved. Please submit the report no later than January 12, 2018.

Order/Item No.4 ☑	Status: **Complied**	Cited: **OHS5.102(b)**

Progress towards compliance:

Apr 06, 2018 - Compliance achieved. The employer conducted an emergency evacuation drill for the purposed of an unintended ammonia release on March 15, 2018 with participation from the Vancouver Fire and Rescue Services.

Mar 08, 2018 - The employer representatives reported that an ammonia emergency response drill is scheduled for March 15, 2018. As such, this order will be extended until March 30, 2018.

Jan 19, 2018 - The employer is working towards compliance. Refer to inspection notes for details.

Orders/Items - Full Details

Initiating order:

Dec 07, 2017 - The employer has failed to conduct drills to test the adequacy of procedures and to ensure that workers and supervisors are familiar with their roles and responsibilities. The representatives reported that an emergency drill was last help a couple of years ago.

This is in contravention of the Occupational Health and Safety Regulation Section 5.102(b).

The employer must conduct drills to test the adequacy of procedures and to ensure that workers and supervisors are familiar with their roles and responsibilities.

Measures to Ensure Compliance:
Pursuant to section 194 (1) of the Workers Compensation Act, the employer must prepare a Notice of Compliance report. In accordance with section 194 (2), this report must detail what has been done to comply with the order, and where compliance has not been achieved by the time the report has been submitted, include a plan of what will be done to comply and when compliance will be achieved. Please submit the report no later than January 12, 2018.

Order/Item No.5 ☑	Status: **Complied**	Cited: **OHS5.97(1)**

Progress towards compliance:

Apr 06, 2018 - Compliance achieved. The employer has revised an ammonia emergency response plan based on an emergency drill conducted on March 15, 2018.

Mar 08, 2018 - A draft ammonia emergency response plan (ERP) was provided for review. Upon review, the officer noted the following deficiencies in the ERP:
- did not identify the duties and roles of the emergency wardens. For example, the ERP did not identify who was to contact emergency services (fire department);
- did not address the procedures for clean-up and re-entry;
- did not include the notification of adjacent workplaces or residences which may be affected.

The representatives advised that revisions to the ERP will also include lessons learned/recommendations from the ammonia emergency response drill.

Jan 19, 2018 - The employer is working towards compliance. Refer to inspection notes for details.

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Orders/Items - Full Details

Initiating order:

Dec 07, 2017 - The employer has developed and implemented Emergency Response Procedures (ERP) for a hazardous materials response. During the review of the procedures, several deficiencies were noted including, but not limited to:
- The ERP did not specifically address an unintended ammonia release;
- The representatives reported that there are 2 muster stations but did not have a procedure to determine the appropriate muster station depending on wind direction (e.g. no wind sock);
- Did not have procedures to check and confirm the safe evacuation of all workers;
- Did not have procedures for spill cleanup, testing and re-entry;
- The emergency plan has not been reviewed annually in consultation with the joint committee.

This is in contravention of the Occupational Health and Safety Regulation Section 5.97(1).

A workplace must have a written emergency plan, appropriate to the hazards of the workplace, that addresses the requirements of sections 5.98 to 5.102.

Measures to Ensure Compliance:

Pursuant to section 194 (1) of the Workers Compensation Act, the employer must prepare a Notice of Compliance report. In accordance with section 194 (2), this report must detail what has been done to comply with the order, and where compliance has not been achieved by the time the report has been submitted, include a plan of what will be done to comply and when compliance will be achieved. Please submit the report no later than January 12, 2018.

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FOLLOW UP INSPECTION REPORT #3

Worker and Employer Services Division

201717538077D

Employer #	Mailing Address	Classification Unit #	Operating Location
11284	C/O WCB CLAIMS ADMINISTRATOR HUMAN RESOURCES 6TH FLOOR 6190 AGRONOMY RD VANCOUVER BC V6T 1Z3	765010	020

Lab Samples Taken	Direct Readings	Results Presented	Sampling Inspection(s)
N	N	N	

Workers onsite during Inspection	Notice of Project Number
17	

Inspection Report Delivered To	Employer Representative Present During Inspection	Worker Representative Present During Inspection	Labour Organizations & Local
Barry Eccleton	Barry Eccleton	Not Applicable	CUPE 116 CUPE 2950

WorkSafeBC Officer Conducting Inspection
Yat Chow

*Inspection Time	*Travel Time
1.50 hrs	0.50 hrs

*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.

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.