UNIVERSITY OF ALBERTA
ENVIRONMENT, HEALTH & SAFETY

Containment Level 3 Sanitary Drain Line Incident November 15, 2018

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Advancing research and learning with trusted guidance and tools

CL-3 Sanitary Drain Line Incident

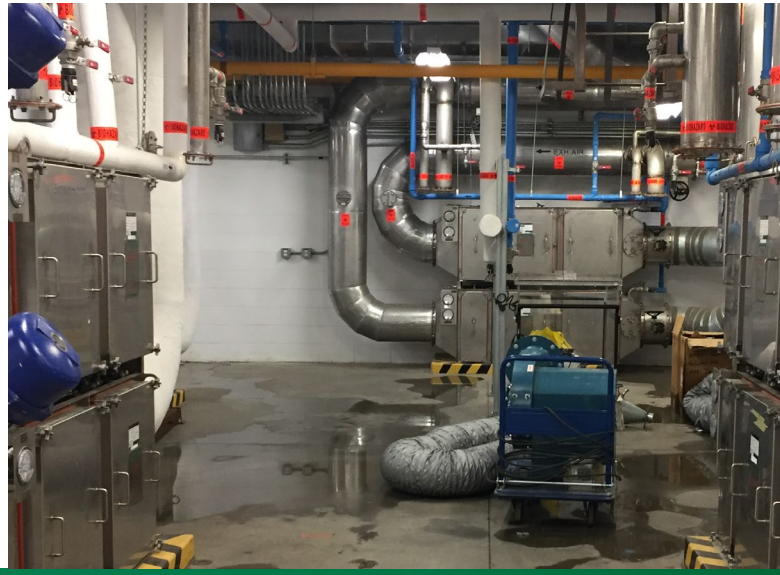
I. Summary of Incident
II. Investigation Findings
    a. Causal Factors
    b. Root Cause
III. Corrective Actions
    a. Development of unique monitoring system
IV. Lessons Learned

November 15th . . . within the infrastructure support area for the CL3

1 F&O Millwrights discover water on floor and pouring from the ceiling

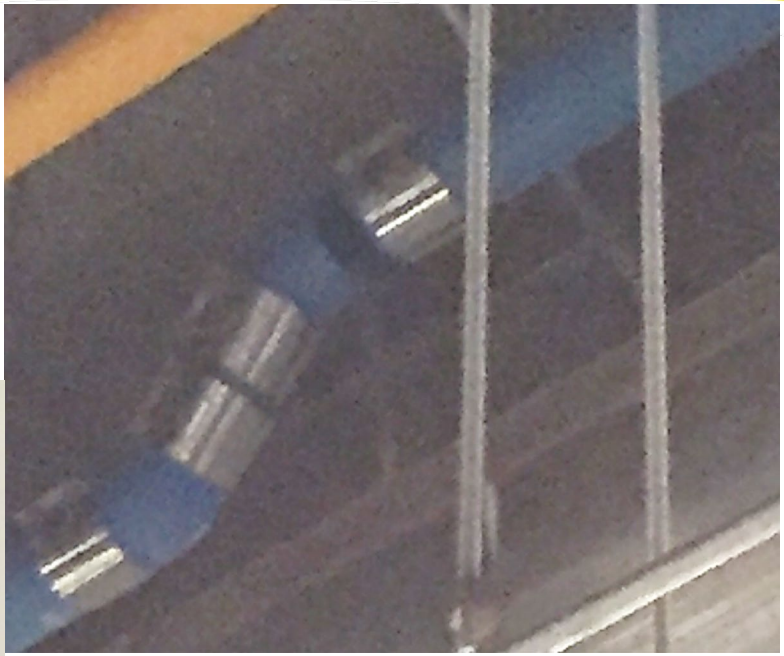
Plumbers verify with Biosafety that it is safe to enter

2 Water leaked on equipment, ventilation systems, electrical control panels



3 Hydroclave holding tanks found FULL with water backing up through the drainage system

4 Weight of water caused the several joints on the drain line to fail; some lines broke



Source of water was NOT clear

- No water running or leaking fixtures within CL3 facility
- No alarms on the autoclaves or indications of concern

CL3 Autoclave identified as source of the water

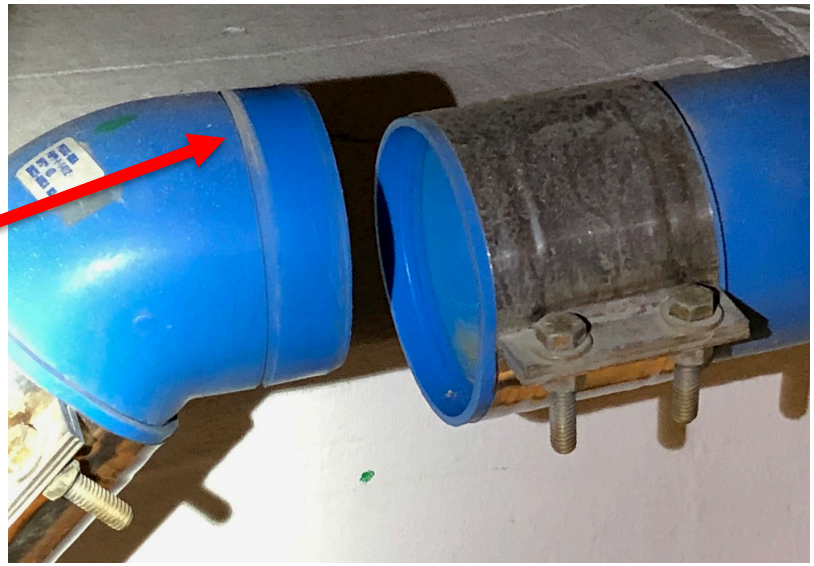
Air valve controlling the cooling water valve FAILED on one autoclave

- very rare type of failure
- water valve forced open
- domestic cold water running continuously at building pressure

INFRASTRUCTURE/EQUIPMENT

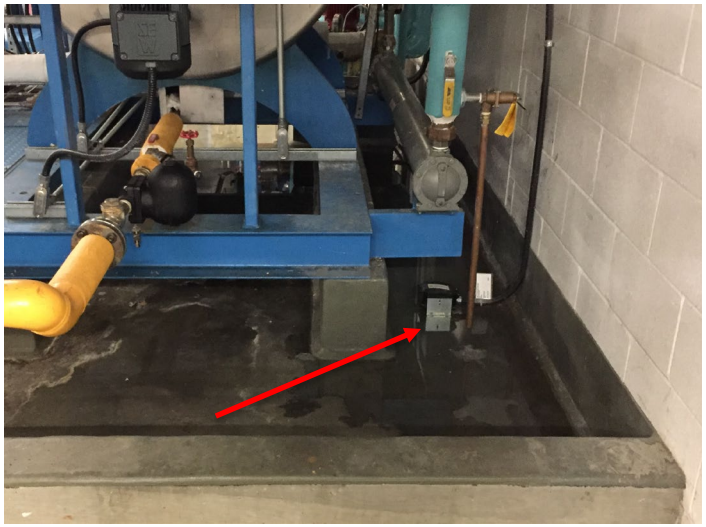
- Integrity of drainage system – improper installation, inadequate supports

joint not seated properly



- Autoclave valve failure - no feedback to autoclave systems regarding the failed valve(s)

- Hydroclave system was offline with high level alarms inoperative for impending maintenance



- Moisture sensor position ineffective

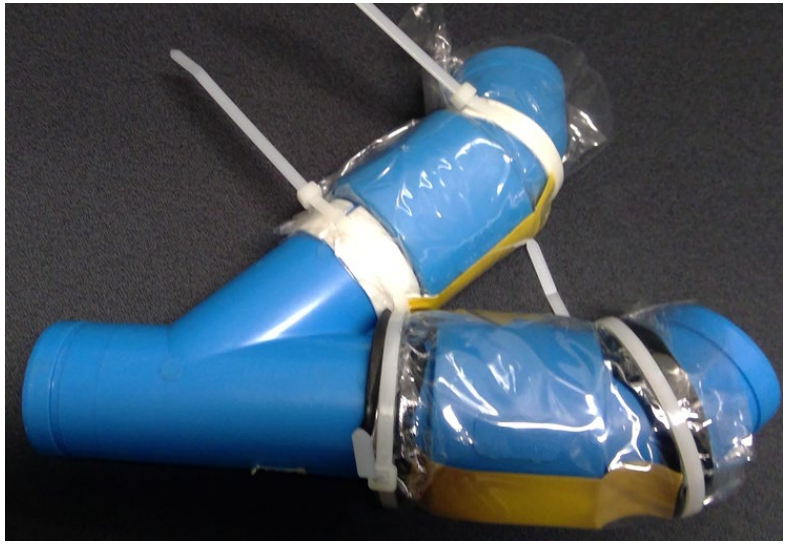
Severity of incident was due to communication gaps

- Facilities personnel unaware of maintenance activities being conducted by faculty technical support personnel
- Technical support personnel unaware of how after market safety features on the Hydroclaves functioned (no documentation)

I. Repair damaged drain lines

- heat seal pipe joints
- pressure test system <u>with water</u>, not air

II. install leak detection system



III. Install additional moistures sensor(s) around Hydroclaves

IV. Improve communications across university units regarding:

- Training
- Maintenance – scheduling and outcomes
- On-site hazard/risk assessment based decisions

At risk for this type of incident when:

- research equipment is integrated with building infrastructure

AND

- a disconnect occurs between responsible parties

Significant costs

- lost research, building and equipment repairs, re-testing systems, administrative burden (reporting, documentation, licensing)

Communication and Collaboration KEY to protect research and infrastructure alike.

Questions

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