

# Ammonia Release – Webinar Fernie Memorial Arena

The following is a compilation of the questions and answers provided during the Ammonia Release (Fernie Memorial Arena) webinar for Asset Owners held October 19th, 2018.

**Q:** *Do we know if the hole originated on the brine side or the ammonia side?*

**A:** The hole originated on the brine side.

**Q:** *Does Technical Safety BC recommend any specific asset management software to advise on maintenance programs for refrigeration/ice plants?*

**A:** Maintenance is complex. If this is something asset owners are seeking, Technical Safety BC can look into it. (*Other attendees indicated they use AssetPlanner for their maintenance programs*).

**Q:** *Does Technical Safety BC need to approve and register the design of all refrigeration plants?*

**A:** In the past, Technical Safety BC may not have looked at system design, only component design. We now require that the system design be registered with us.

**Q:** *With the submission of the refrigeration plant design, if the plant changes, do we need to submit changes?*

**A:** This depends, Technical Safety BC needs to work through what is practical, e.g.. how large of a design change

**Q:** *Sometimes there was confusion between the recommendations between Technical Safety BC and WorkSafeBC and conflicting with each other. Is there more of a partnership now?*

**A:** Technical Safety BC and WorkSafe BC each have different mandates, but there is some overlap. We appreciate when you highlight these things to both agencies - there's always interpretation involved in codes and standards and we try to provide that consistently.

**Q:** *Does Technical Safety BC have a list of independent safety assessors? [Recommendation 10]*

**A:** While Technical Safety BC doesn't recommend or certify independent refrigeration safety professionals, we have developed a network of consultants in the field, and can share that list with arena owners and maintenance managers. Owners are also encouraged to source this expertise across Canada, or internationally, if needed.

**Q:** *Are you looking at increasing the frequency of courses and exams (Refrigeration Operators and Ice Facility Operators)?*

**A:** That is one aspect that we will work on with the various associations and institutions involved.

**Q:** *Is the Ice Facilitator Operator (IFO) responsibility changing? There has been discussion that it doesn't meet the standard for 8-hour coverage of a risk-assessed plant.*

**A:** No changes. It has always been the case that an IFO cannot meet the requirements for a risk-assessed plant. A person that holds an IFO certificate of qualification may operate an ice facility plant that does not exceed 1000 kW and has a refrigeration operator or a 4th Class Power Engineer in charge of the plant.

**Q:** *Is there any way to report hazards without regulatory threat?*

**A:** The intent behind hazard reporting is not punitive, but learning and prevention. When hazards are reported, it doesn't always mean we will conduct a full-blown investigation. Safety is a shared responsibility and maintenance contractors have an obligation to clearly report all hazards to the owner/operator and to manage hazards accordingly, which sometimes involves recommending whether a piece of equipment is safe to remain in operation or not. A small piece of bad news is better than a catastrophic incident.

We do have anonymous hazard or incident reporting available, but please be aware that if reports are anonymous and we don't have enough information to follow up with, we cannot investigate.

Information Bulletin IB-BP-2017-01 provides more information on the reporting of incidents and / or hazards.

**Q:** *Is it true that refrigeration plants < (less than) 50 kW are exempt from staffing requirements?*

**A:** True. An individual is not required to hold a certificate of qualification to operate an ammonia refrigeration plant that has a capacity of 50 kW or less; they are exempt from staffing.

**Q:** *Is [the capacity rating] something that Technical Safety BC will be changing?*

**A:** There are many rules (e.g., design registration, supervision, operating permits) related to plant capacity ratings and Technical Safety BC is reviewing them to determine whether they make sense.

**Q:** *Are there any plans to get more inspectors on the ground?*

**A:** Safety is a shared responsibility and even with additional safety officers, we can't be there every day – it is also the responsibility of the owners, owner representatives, and the contractors to ensure their facilities are being operated by qualified individuals, in keeping with the relevant regulations.

Assessments are just one aspect of a robust safety system. Aside from assessments, Technical Safety BC uses many other oversight tools, including:

- Extensive licensing and certification activities to verify that regulated equipment is installed by licensed contractors and operated and maintained by qualified individuals.
- Providing comprehensive information sources and relevant education for qualified individuals who are responsible to monitor and maintain regulated systems and equipment.
- Administering exams for individuals to obtain a certificate of qualification.
- Participating in regulatory reviews and issuing safety orders, directives and information bulletins to stop unsafe activity and provide clarification of regulatory requirements and interpretations.
- Investigating incidents related to regulated equipment and work.
- Taking compliance and enforcement actions.

**Q:** *The chiller in Fernie was at the end of its serviceable life, correct? Each vessel is certified annually? Is there a mechanism for Technical Safety BC to find that a piece of equipment is at the end of its life and inform the owner?*

**A:** It depends more on the amount of wear and not so much the amount of the calendar time, but it is difficult to measure the amount of wear. It is understood that 20-25 years was the useful lifecycle of a chiller of that type. We have enough industry experience now to be able to say these types of chillers would last for 20-25 years.

At this time we should ask about how you, the owner, are inspecting the chiller and determining the wear and give assurance that you can continue to use it safely. With this type of equipment, it may be more expensive to do this than to replace it with new equipment.

Specifically to chillers and this incident, chillers are generally not repairable. Service life is dependent on many factors, e.g. what kind of maintenance. It does take time and money to replace a chiller. The ice will melt in that timeframe. If the chiller is at 90% of its lifespan and there is one leaky tube, the plant would likely need to be shut down and determined if a repair can be done, and if not, the chiller would need to be replaced.

**Q:** *If there is a lifespan of 20-25 years and we get the permit from Technical Safety BC, could we receive notice of renewal, or request to make an action plan for repairing or replacing the chiller. This sounds like a reasonable thing for the regulator to do, and if nearing year 30, start enforcement.*

**A:** That is something Technical Safety BC can explore.

**Q:** *Is Technical Safety BC reviewing whether or not to take risk assessed plant status away and have arenas manned by an operator 24 hours a day?*

**A:** We will be looking at the regulations and reviewing the relevance of the existing regulations. Before any changes can occur, we would need to execute an extensive consultation process. Therefore, regulations would not be changed immediately.