

Introduction

The aviation business has recently identified that too many pilots are becoming addicted to automation, and as such, maybe losing their ability to manually take control of their equipment in the event that there is a computer or other safety device failure. This lack of competency is recognized as a contributor to the recent increase in incidents and accidents in their profession.

Source: Commercial Pilots Addicted to Automation
<http://www.nbcbayarea.com/investigations/Commercial-Pilots-Addicted-to-Automation--221727971.html>

The Walkerton Tragedy

The Walkerton Tragedy is a series of events that accompanied the contamination of the water supply of Walkerton, Ontario, Canada, by *Escherichia coli* bacteria in May 2000. At the time of the event Stan Koebel was manager and Frank Koebel was water foreman. Neither had any formal training in this position, retaining their jobs through three decades of on-the-job experience. The water supply became contaminated with the highly dangerous e-coli and seven people died in the community from drinking the water supply.

What was learned from the Walkerton water plant operational tragedy is that **every mechanical plant room requires a person who is responsible for its safe operation**. Unfortunately, the community leaders of Walkerton failed to have the benefit of hindsight. Had they been aware of the shortcomings in their operation, surely they would have responded to correct the staff competency and general day to day operational issues that had become, by default, “standard operating practice”. In the wake of this tragedy a comprehensive provincial water plant training certification program for water plant operators has now been developed and implemented to ensure there is never a repeat of these events in any Ontario community.

Safety of Mechanical Plants

The Ontario Recreation Facilities Association Inc. (ORFA) is committed to raising the awareness on

the continuing departure of senior ice operations staff, the increased pressure to be internally financially responsible, aging refrigeration plant rooms; further, an increase in the installation of “self-contained” (skid) refrigeration plants to circumvent set level of competency under the Operating Engineer Regulation (OER). Further, the lack of ongoing professional development by Chief Operators and Refrigeration Operator Class-B specific to the ice arena are all concerns to our industry. ORFA continue to work closely with refrigeration plant governing agencies to provide guidance to our members. It is important to note that this information should not be considered specific or final for any refrigeration plant room in Ontario. Ensuring compliance to any legislative responsibility is always the requirement of the “owner” of the plant.

ORFA members should raise specific questions regarding their operations directly with the Technical Standards & Safety Authority (TSSA) and/or Ministry of Labour (MOL), Ministry of Environment (MOE) to ensure compliance specific to their equipment or operation.

Legislative Compliance

Worker safety always begins with the Occupational Health and Safety Act (OHSA) and is further enhanced with additional legislative obligations. The ORFA Basic Refrigeration course is a positive influence on worker safety and continues to be recognized as an “industry best practice” for educating staff. However, as outlined in the OHSA, an “employer” has additional set obligations to meet. Some employers have developed in-house training programs that currently exceed the minimum OER requirements for unattended plants. This may include putting operators of their unattended plants through the RB-1 and RB-2 examination process (TSSA) and providing professional in-house training specific to their operations.

The following excerpts from the OHSA outline basic competency obligations:

Note: Although these sections may be applicable to this guideline, the highlighted sections should be carefully observed and understood.

Duties of employers

25. (1) An employer shall ensure that,

- (a) the equipment, materials and protective devices as prescribed are provided;
- (b) the equipment, materials and protective devices provided by the employer are maintained in good condition;
- (c) the measures and procedures prescribed are carried out in the workplace;
- (d) the equipment, materials and protective devices provided by the employer are used as prescribed; and

(2) Without limiting the strict duty imposed by subsection (1), an employer shall,

- (a) provide information, instruction and supervision to a worker to protect the health or safety of the worker;
- (d) acquaint a worker or a person in authority over a worker with any hazard in the work and in the handling, storage, use, disposal and transport of any article, device, equipment or a biological, chemical or physical agent;
- (h) take every precaution reasonable in the circumstances for the protection of a worker;

Additional duties of employers

26. (1) In addition to the duties imposed by section 25, an employer shall,

- (c) keep and maintain accurate records of the handling, storage, use and disposal of biological, chemical or physical agents as prescribed;
- (d) accurately keep and maintain and make available to the worker affected such records of the exposure of a worker to biological, chemical or physical agents as may be prescribed;
- (g) comply with a standard limiting the exposure of a worker to biological, chemical or physical agents as prescribed;

(k) where so prescribed, provide a worker with written instructions as to the measures and procedures to be taken for the protection of a worker; and

(l) carry out such training programs for workers, supervisors and committee members as may be prescribed.

Considering all of these highlighted points it is important to note that the historical practice of sending “unattended” refrigeration plant operators to an ORFA Basic Refrigeration course and enhancing this training with a “cook’s tour” of the plant room, must now be replaced with a more comprehensive introductory and ongoing training plan for all staff to ensure basic compliance.

Duties Defined in the OER

Equally required is the understanding and compliance to the Operating Engineer Regulation (OER). This Regulation provides direction in the safe operation of a refrigeration plant room; regardless of plant size. In attended plants it is the Chief who takes “responsibility” for the refrigeration plant room.

OER definition: “Chief operator” means an operator or an operating engineer who at all times has charge of and responsibility for the safe management, operation and maintenance of a compressor plant or a refrigeration plant.

Misunderstanding often occurs when ORFA members who operate refrigeration plant rooms (that do not require a “Chief” Operator) believe that their existing relationship with a refrigeration contractor satisfies their responsibilities under the OER. To be clear, operational tasks may be delegated and transferred, but it must be done in a specific legal manner. Although it may reduce some internal responsibility for compliance, it will not completely eliminate owner liability; the ownership responsibilities, as set out in the OER, can never be transferred.

In an “unattended plant” it is the expectation that every “owner” will select a “responsible person” for the refrigeration plant to ensure the safe management, operation and maintenance of the compressor plant or refrigeration plant. There is also no specific definition of a “responsible person” in the OER. It is a definition created to provide

ORFA members with guidance, in meeting both the OHSA and OER obligations, for those granted access into the refrigeration plant room.

OHSA 25 (2) Without limiting the strict duty imposed by subsection (1), an employer shall:

(a) provide information, instruction and supervision to a worker to protect the health or safety of the worker

26. (1) In addition to the duties imposed by section 25, an employer shall:

(k) where so prescribed, provide a worker with written instructions as to the measures and procedures to be taken for the protection of a worker; and

(l) carry out such training programs for workers, supervisors as may be prescribed.

Becoming a Responsible Person

The ORFA accepts the challenge to provide proactive guidance and safe industry best practices to members in all aspects of recreation facility operations. In this spirit, the following guideline is provided to help improve the safe operation of ice arena refrigeration plant rooms and HVAC equipment.

Becoming a “responsible person” starts with being a “competent person”. The OHSA definition of a “competent person” means a person who:

(a) is qualified because of knowledge, training and experience to organize the work and its performance,

(b) is familiar with this Act and the regulations that apply to the work, and

(c) has knowledge of any potential or actual danger to health or safety in the workplace

The ORFA recommends that to help meet the definition of a competent person in an “Unattended” Ontario ice arena refrigeration plant room that **every building** have and maintain a: **Certified Arena Refrigeration Plant Technician (CARPT)** professional designation (previously known as an (RPOT).

To become a **Certified Arena Refrigeration Plant Technician (CARPT)** the following criteria must be met:

- ✓ Maintain an individual ORFA Membership
- ✓ Minimum Grade 12 Education
- ✓ Minimum of 2 years full-time refrigeration work experience, plus
- ✓ Complete the following ORFA courses:
 - Basic Refrigeration (or have a current TSSA Refrigeration Operator Class-B Certificate)
 - Advanced Refrigeration Facility Operator
 - Recreation Facility Environmental Systems (HVAC/R)
 - Legal Awareness I

Note: Every CARPT must recertify no less than every 5-years with the ORFA.

Tools for Training Operators

In an attended refrigeration plant, it is the “Chief Operator” who shall design, implement and maintain a procedure manual.

OER Section 46: Procedure Manual

Every owner of a plant shall keep on the premises of the plant an up-to-date, detailed operating procedures manual designed by or acceptable to the chief operating engineer or chief operator of the plant that sets out the procedures relating to training and the operation of all equipment and systems of the plant and all emergency procedures. O. Reg. 219/01, s. 46.

It is reasonable to assume that unattended (guarded) refrigeration plants would benefit from having the same quality procedures manual for both training operators and ensuring safe plant

operations. The responsible person would play a key role in creation and ongoing maintenance of this important document.

Raising the Bar for Training “Responsible Persons”

Often a Chief or Refrigeration Operator Class-B is under the impression that submitting the annual fees to TSSA reconfirms their competency. In fact, the fee merely reconfirms your interest in maintaining this designation through TSSA. The ORFA has promoted the fact that the current B-Certificate learning and testing is geared to the refrigeration industry as a whole and is not ice arena refrigeration plant specific. The introduction of Advanced Refrigeration and HVAC/R training courses were partially designed to enhance B-Certificate holders understanding that is specific to our industry. As the owner and/or Chief, what formal training have you or your B-Certificate holders undertaken in the last 5-years?

Beginning March 31st, 2014 the ORFA will begin to promote that all Chief Operators and B-Certificate holders, that have been certified for more than then 5-years to reconfirm their competency by obtaining a Certified Arena Refrigeration Plant Technician (CARPT) professional designation, or undertake an equivalent training process.

Duties of the Responsible Person

Basic duties of a refrigeration plant room “responsible person” would be best defined as:

“a person who has charge of and responsibility for the safe management, operation and maintenance of a compressor plant or a refrigeration plant”.

You will note that this definition closely reflects the responsibilities of a “Chief Operator” as defined in the OER. What has been removed is the reference of “*who at all times*”. It is important to note that under the OER when a fail-safe device is no longer functioning, that a “Certified B-Operator” must then take care and control of the refrigeration plant room and ensures worker and public safety until the fail safe device is

repaired. To determine if in fact you currently have a “responsible person” on staff, consider each of the following questions:

1. Who currently provides information, instruction and supervision to a worker to protect the health or safety of the worker in the refrigeration plant room?
2. Who is responsible to contact the refrigeration service contractor for the planning of annual service, emergency necessary repairs and/or life cycle of the plant room equipment?
3. Who currently develops and maintains the required operating manual for the plant room?
4. Who currently maintains accurate records on the handling, storage, use and disposal of the biological, chemical or physical agents found in the refrigeration plant room?
5. Who is currently responsible for the training of other workers who have duties in the refrigeration plant room?

If you can put a name(s) to these 5 questions – also ask what makes them “competent” to undertake these duties and responsibilities? As the owner are you really taking every precaution reasonable in the protection of a refrigeration plant room worker? Please consider what ORFA has presented to be a reasonable plan to obtain and maintain refrigeration plant operator competency.

Conclusion

The ORFA recognizes that every workplace has the responsibility and right to design and maintain an internal training program and that these recommendations are no different than “ORFA head protection for ice workers” guideline. However, please be reminded that the recommendations should be considered an “industry best practice” to be shared with governing authorities. Consider how you are currently operating your refrigeration plant rooms and confirm that if ever called into question you are adequately prepared to provide the most responsible answers and to provide proof of your responsible actions in reducing risks.

Resources:

TSSA <http://www.tssa.org/>

Ontario Ministry of Labour

<http://www.labour.gov.on.ca>

Ontario Ministry of Environment

<http://www.ene.gov.on.ca/environment/>

Occupational Health and Safety Act

[http://www.e-](http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90o01_e.htm)

[laws.gov.on.ca/html/statutes/english/elaws_statutes_90o01_e.htm](http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90o01_e.htm)

Ontario Regulation 219/01 Operating Engineers

[http://www.e-](http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_010219_e.htm)

[laws.gov.on.ca/html/regs/english/elaws_regs_010219_e.htm](http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_010219_e.htm)

Walkerton Water Plant Tragedy:

<http://www.marsdd.com/2011/08/23/from-tragedy-to-tech-flagship-the-walkerton-clean-water-centre/>

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