ONTARIO RECREATION FACILITIES ASSOCIATION INC.

REGULAR ICE FACILITY REFRIGERATION MECHANICAL ROOM INSPECTION & GAUGE READINGS

March 2007

NOTICE: Legislation that guides refrigeration mechanical plant room operation may change at anytime. It is the owner's responsibility to stay aware and comply with any such changes. The following information is offered as research material only. The **Technical Standards and Safety Authority [TSSA]** is the regulatory agency for mechanical room operational compliance in the Province of Ontario.

Regulations that govern refrigeration plant room operations, specific to refrigeration equipment which is less than 200-hp and which are not direct systems or not under the care and control of a TSSA certified operator, may have been interpreted by some to contain less of a legislative responsibility toward the need for facility operational staff to ***"conduct and record regular plant room checks".*** The O.R.F.A. wishes to advise all ***"owners/operators"*** that ice facilities are one small component to the **Technical Standards and Safety Authority's** plant room inspection and regulation compliance responsibilities.

Current legislative responsibility requires that a log book be maintained in all registered refrigeration plants regardless of whether they require attendance with a Certified Operator or not. All refrigeration plants require monitoring by a competent-knowledgeable person as setout in the Regulations.

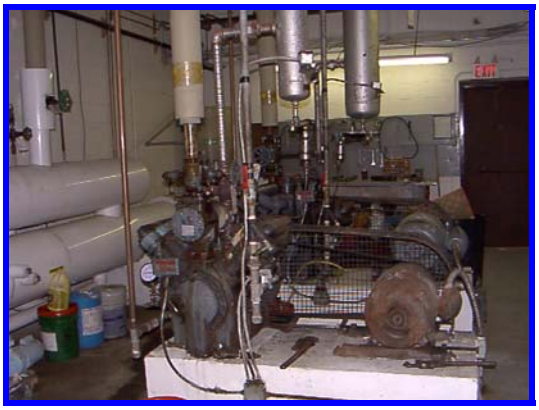
Key Definitions

"attendance", in relation to shift coverage, means the physical presence of a person for the purpose of mandatory shift coverage by an operating engineer or operator for the operation of the plant as set out in the Operating Engineer Regulations;

"guarded", in relation to a fail safe device, means the controls and safety devices that safely limit the operation of the equipment that is being guarded to preset parameters, and that will cause an audible or visual alarm, or both, to the operator of the equipment, as the case requires;

"refrigeration plant" means an installation comprised of one or more refrigeration compressors, prime movers, equipment, pressure vessels and any associated piping;

"unattended", in relation to a guarded plant or guarded installation, means that the plant or installation may be operated,
(a) without the appointment of a chief operating engineer or chief operator, and
(b) without an operating engineer or operator on shift duty providing supervision;



The O.R.F.A. reminds its membership that ***"the overall responsibility to provide a safe work and recreational environment rests with facility management and those that operate these facilities on a daily basis"*** *and* further, ***"the majority of Ontario's ice facility refrigeration equipment is aged and that a comprehensive plant room inspection protocol may help reduce the potential for costly equipment repairs, loss of facility use and/or increased exposure to liability or human peril".***

The O.R.F.A. recommends; ***"for the safety of all worker's, and the general public in ice facilities, that a system that sets out regular inspection of the refrigeration plant room and equipment gauge readings on a scheduled basis is an indication of operational diligence".***
Note: It is important to clearly understand that the recording of gauge readings in any refrigeration plant room by persons who do not understand the equipment they are monitoring, the impact of pressure or reading fluctuation, or the consequence to poor adjustment of any device, is a breach of this minimum expectation of operational diligence.

The ***"Occupiers Liability Act"*** sets out an expected level of ongoing operational activity to ensure that persons entering into any premise are provided reasonable care and control.

The following are excerpts from the **Occupier Liability Act**.

"Occupier" *means a person who (a) Is in physical possession of premises, or (b) Has responsibility for, and control over, the condition of premises, the activities conducted on those premises and the persons allowed to enter those premises, and, for this Act, there may be more than one occupier of the same premises;*

"Premises" *includes (a) Land and structures or either of them*

2 *Subject to section 3 (4), and sections 4 and 9, this Act determines the care that an occupier is required to show toward persons entering on the premises in respect of dangers to them, or to their property on the premises, or to the property on the premises of persons who have not themselves entered on the premises, that are due to the state of the premises, or to anything done or omitted to be done on the premises, and for which the occupier is responsible by law.*

Occupiers' Duty of Care

3 *(1) An occupier of premises owes a duty to take such care that in all the circumstances of the case is reasonable to see that a person, and the person's property, on the premises, and property on the premises of a person, whether or not that person personally enters on the premises, will be reasonably safe in using the premises.*
(2) The duty of care referred to in subsection (1) applies in relation to the condition of the premises

Each facility will be required to create a specific schedule for regular refrigeration plant room inspection and log book entries based on age of facility and equipment, cycle of professionally sanctioned mechanical review, type of electronic monitoring/safety devices, size of plant room, and staff competency. Such a system of inspection does not supersede any other legislative operational requirement.

The O.R.F.A. offers the following information/recommendations as part of an internal policy and procedure creation process or, as a recommended industry best practice for those who lack internal guidance on such matters.

The O.R.F.A. recommends that all ice facility refrigeration plant rooms, regardless of operational horsepower be regularly inspected by a "certified operator" or a "competent – knowledgeable person". Such inspections should be recorded in a log book.

All ice facilities that do not have TSSA certified operators must set their own internal level of competency for those who are responsible for the management, operation and maintenance of the facilities plant room. Be reminded that the OHSA defines a ***"competent person"*** as 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 and safety in the workplace.***

An ice facility plant room inspection should include, but not be limited to, "the general status of equipment operations" - a review of the air quality and temperature in the plant room, all equipment gauges for pressure and temperature fluctuations, all equipment for fluid or noxious gas leaks, all equipment for excessive or an increase of noise levels and a dedicated approach to the day-to-day housekeeping, fire protection, and overall safety of this area. Such inspections should occur:

1. At minimum every 2-hours when the facility is open to the general public, or
2. More often should any variation in normal operations in the plant room be detected; or
3. A minimum of once every 24-hours when the facility is closed to the general public.

- All such refrigeration plant inspections should include plant gauge readings which are to be recorded in an appropriate log book.
- Any variation in normal operational activities should be immediately reported and acted upon.

The O.R.F.A. recommends that prior to any "competent person" entering an ice facility refrigeration plant room that a "Job Hazard Analysis" is conducted and that each worker is:

1. Educated in the associated hazards in this area which may include, but not be limited to, access restriction policies, emergency exits, electrical shock, equipment starting without warning, slip hazards, levels of noxious gas(es), excessive noise levels, required and limits of Personal Protective Equipment, MSDS, ventilation and air quality issues, fire and explosive dangers; further, it is paramount that all emergency action equipment/plans, contact information and PPE be stored outside of the plant room in a close/safe location
2. Actively monitoring and reviewing all Acts, Regulations and general legislation that control ice facility plant room operations;
3. Able to identify all primary parts of the refrigeration systems and what basic function they serve; able to start, stop and test all refrigeration equipment;
4. Able to recognize and accept the "internally set limits of work to be or not to be performed" while in these areas;
5. Able to recognize worker and public safety hazards and be prepared to initiate a general facility evacuation and worker emergency rescue plan.
6. Aware that untrained staff shall not be permitted to enter refrigeration plant rooms without proper supervision - under any circumstance.

Log Books

Be reminded that regardless of the actual operational design of an ice facility refrigeration system, that it is the **"owner's legislative responsibility to ensure that the refrigeration plant room log book contains *all* *incidents, accidents, adjustments and repairs and maintenance of the refrigeration equipment."*** Such information needs to be readily available within the plant room at all times.

All logbooks must meet the criteria as setout in the Regulations (i.e. tamperproof, consecutively numbered pages) – please see the Regulations for the most up to date requirements of a plant room log book!

The understanding for the need to maintain a quality log book is often offset by the lack of commitment to correctly utilize these essential operational tools! Logbooks take on two (2) separate rolls (1) refrigeration system operational efficiencies and; (2) defense against litigation! Operational efficiencies can be mandatory through legislation or an internal document used to record operational activities. Defense against liability - log books are created in hopes of "proving operational competency". These log books are usually harmonized with internal policy and procedure. The intent is to have a course of review and action in writing that guides and records the day-to-day worker in

their tasks while monitoring the equipment for fluctuation from normal operating levels. The log book helps confirm that the work is being scheduled and performed to set operational requirements on a regular ongoing basis and that the refrigeration system is operating within the normal operating ranges to ensure an acceptable standard of refrigeration output for the ice surface being refrigerated.

Most common mistakes surrounding log book use include:
1. Failing to train workers on how to effectively complete log book entries;
2. Failing to train workers on what "normal" plant readings might be;
3. Failing to make regular or complete log book entries;
4. Failing to provide log books that meet the requirements of the Regulations – use of loose leaf binder type log books should be avoided – log books must be bound, consecutively numbered and created for the exact recording purpose of the task;
5. Failing to complete an area at the front of the log book to identify workers names, signatures and initials;
6. Failing to use a standard date format – use one constant type style throughout the document – best to print month-day-year in full;
7. Failing to use full words to complete sections of the log book report - avoid the use of abbreviations whenever possible;
8. Failing to have managers regularly review log book entries – all too often entries are made identifying an issue but no follow-up occurs;
9. Failing to safely store old log books; Regulations require that all plant room log books be stored for a minimum of 3-years however; the longer an operation can prove they have been working to set internal standards the better chance to legally defend their operational activities and attitude if ever called into question.

The O.R.F.A. wishes to extend a reminder to those who currently hold certification as a plant room operator with TSSA that such recognition is at times perceived as a "certificate of guaranteed employment" when in fact, it is a "privilege of function for the operation, management and maintenance of a refrigeration system". Those who hold the title of "Chief Operator" should actively undertake a continually updating and training of those who fall under their responsibility.

Pending TSSA plant registration status, there may be a higher legislative responsibility for operator plant room competency and inspection – please feel free to discuss the exact requirements with your local TSSA inspector to ensure all aspects of legislation compliance is being met.

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