



| | |
|--|------------------------|
| Operating Engineers Program | Ref. No.: OE-001-23 |
| REGISTERED, UNATTENDED ICE SURFACE PLANT ADVISORY | Date: Apr 17, 2023 |

Purpose

This advisory clarifies roles and responsibilities for the safe operation and maintenance of registered unattended ice surface refrigeration plants in accordance with the Operating Engineers (OE) regulation ([O. Reg. 219/01](#) or “the regulation”)¹ and the corresponding [Director’s Order](#) and any applicable OE [Alternate Rules](#).

Background

Unattended refrigerated ice surfaces are an important part of Ontario’s recreational landscape. These facilities continue to expand to fulfil different sporting and recreational needs beyond traditional hockey arenas and curling clubs. TSSA recognizes that Ontario’s aging recreational ice surfaces require proper operation, maintenance, and management to remain safe and serviceable. In addition, changes in equipment, refrigerants and technologies require continued investment by plant owners to ensure plant staff are properly trained.

Plant Registration

Most refrigeration plants with >22kW compressors are required to be registered with TSSA [s. 4(1)].

Plant Attendance

Table 6 of the regulation sets out refrigeration plant attendance requirements based on the plant type and its power rating.

A plant or installation that does not have an attendance requirement is an “unattended” plant, meaning that it may be operated without a chief operating engineer or chief operator, and without operating engineers or operators on shift duty providing supervision [O. Reg. 219/01, s. 1(1)]. Unattended plants may therefore be operated by persons not holding TSSA OE certificates.

Guarded Plants

Table 6 of the regulation requires that some certain refrigeration plants have guarded controls based on the plant type and its power rating. A guarded plant can be attended or unattended.

A plant is “guarded” if it has controls and safety devices that limit the operation of the equipment that is being guarded to preset parameters and that will alert the operator with an audible and/or visual alarm if those parameters are exceeded [s. 1(1), 39 and 45].

If the control or device guarding installation ceases to function properly, the installation must be brought to a safe stop immediately [s. 42(1)(b)].

¹ All references herein are to the OE regulation.

Roles and Responsibilities

Various stakeholders play a role in ensuring that a plant is safely operated, supervised, and managed, as per the regulation:

- **Owner.** The plant “owner” is “the person to whom or which the plant is registered but does not mean the operating engineers or operators who operate, control, or maintain the plant”. The plant owner selects an individual to have the authority to ensure the plant is being properly operated, supervised and managed. [s. 1 (1)]
- **User.** The plant “user” is the person selected by the plant owner to be responsible for ensuring that the plant is being properly operated, supervised, and managed. The regulation clarifies that “user includes the person or persons *in control* of a plant as owner, lessee or otherwise, but does not include the operating engineers or operators who operate, control, or maintain the plant.” The plant user will often have authority to oversee equipment maintenance or replacement and the training of plant employees. The plant user should have a strong working knowledge of the CSA B-52 Mechanical Refrigeration Code and other applicable codes, standards and practices associated with safe work practices, environmental responsibilities and emergency management.

It is the obligation of the plant’s “owner and/or user” to ensure that the registered unattended ice surface refrigeration plant is under the care and control of well-trained, competent, responsible persons at all times. Plant employee training programs design, delivery and supervision remains a plant “owner and/or user” responsibility. TSSA recommends that the plant owner and/or user adopt industry-recommended training and operational best practices, guidelines and/or standards for training registered ice surface refrigeration employees. These are obtainable through Ice Sheet industry training providers.

Contractors

While service contractors play an important role in ensuring safe plant maintenance and operations, it ultimately remains the plant owners and/or user’s responsibility to ensure that a plant is properly maintained.

“The plant “owner and/or user” is responsible to select, direct and supervise any service contractor who performs work on the primary or auxiliary equipment, safety devices, and/or emergency systems”.

The maintenance plan for the plant needs to be site-specific, based on the condition of the equipment, plant design and layout, and should include an asset management plan.

Logbooks

Section 37 of the regulation contains detailed requirements regarding logbooks, including the following:

- Persons permitted to make entries in the logbook must be identified in the front of the logbook [s. 37(5)]. All persons permitted to make entries in the logbook should be properly trained on how to do so. To assist the TSSA Chief Officer or representative in plant communications and/or inspection reports, the plant owner and user should have their names and contact information recorded in the plant logbook as well.
- Entries must include (but are not limited to) [s. 37(8)]:
 - the date, and the times at which the shift begins and ends
 - the name(s) of the persons making the entries
 - any change from normal operating procedure and the time of such change
 - any unusual or abnormal conditions observed in the plant and the time they were observed
 - documentation of any repairs or maintenance
 - any malfunction of any item or equipment, the time of the occurrence and any remedial action taken to correct the malfunction or resulted in an incident or accident involving any person in the plant room
 - the entry of any unauthorized person to the plant, together with the purpose of the entry and the time of entry and leaving

- Electronic logbooks are permitted, but electronic entries currently must be printed at the end of each day and signed the next day [s. 37(3)]. The Alternate Rules permit TSSA to develop alternate (less onerous) requirements for electronic logbooks, which are currently under development
- Entries must be in ink and any corrections must not be erased but instead crossed out, corrected and initialed [s. 37(9)]
- No person shall deface, damage, destroy or, without the permission of the owner or user, remove the logbook from the plant [s. 37(10)]
- The plant user shall monitor logbook entries for change in operations and/or to direct plant maintenance. [s. 37(8)]
- Supplementary logbook may be used to record detailed maintenance and service data, but must be documented in the primary logbooks [s. 37(7)]
- The user shall ensure that the logbook is kept accessible in the plant for at least three years after the last entry is made and shall produce the logbook for examination upon the request of an inspector and, where an electronic log is kept by the user, the user shall retain the electronic log for at least three years. [s. 37 (12)]

Holidays and Seasonal Closure Inspections

The plant owner and/or user is responsible for ensuring that any unattended guarded plant remains safe during holidays and extended periods of closure through regular, recorded inspections by competent personnel.

Long term shutdown, Decommissioning, Dismantling a refrigeration plant

Any long-term change to a refrigeration system's status must be carried out by a trained and qualified employee or a licensed refrigeration contractor. The state of system must be verified before and after the change. This includes long term shutdown, restart up, refrigerant evacuation/fill etc. This is the responsibility of the Owner/User.

Unattended Plant Procedure Training and Emergency Manual

All refrigeration plants must be operated and maintained to the standards of equipment owner manual maintenance programs and regulated responsibilities. Procedure manuals guide current and future users and employees and service contractors in the safe operation, supervision, and management of the plant.

The manual must set out procedures relating to training of all persons selected by the plant user to assist in the safe operation, supervision, and management of the plant. The manual should include emergency plans for the plant relevant to the associated risks of operation and refrigerants. Key areas of focus should include chiller life/condition, compressor maintenance, safety valve servicing, modification/repairs to piping system, testing of the secondary coolant, emergency relief lines and valve exercising programs.

Failure to have and maintain a plant procedure and maintenance manual may result in an unattended plant becoming an attended plant status requiring certified staff until such information is put in place. Additionally, users should use industry best practices for training for workers to become competent workers. Refrigeration Operator and Refrigerant Awareness Programs assist with this information.

Unattended Plant Asset Management Plan

The plant user should create and maintain an asset management plan that tracks life expectancy and replacement of all key pieces of refrigeration equipment, infrastructure, and safety devices. The asset management plan should meet industry best practices. This plan should be site-specific and equipment condition dependent. These documents are available from your industry training provider.

Accidents Reporting

Section 47 of the regulation requires the plant user to notify TSSA of any accident, injury or death and provide a follow-up written report to TSSA of accidents causing serious injury or property damage. To report an *accident or incident, call 1-877-682-TSSA (8772) and choose option 1 to reach the [Spills Action Centre](#) (open 24 hours a day, 7 days a week). To report an incident involving boilers and pressure vessels, please refer to the reporting guidelines in the [BPV Incident Reporting Advisory](#).