



12 Steps to Developing an Effective Ice Arena Registered Refrigeration Plant Procedure Manual

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Introduction

The Ontario Operating Engineers Regulation (OER) governed by the Technical Standards and Safety Authority (TSSA), is a regulatory obligation that directs many different types of refrigeration, steam and traction plants and includes ice arena refrigeration plants. The Regulation is designed to assist plant owners or certified operators in operating safely without being too specific on how this will be accomplished. This requires each owner to read and apply the OER to determine how best to meet the obligations of the Regulation. The Ontario Recreation Facilities Association (ORFA) has continually invested in developing guidelines that assist members toward being compliant.



This guideline is designed to help plant owners/operators create a procedure manual as required under section 46 of the OER.

Procedure manual

46. 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.

The intent of this guideline is to develop a standard format and design that includes relevant information that is easily transferable should an operator change locations. It will also assist in ensuring that new operators that are provided the privilege to enter a registered refrigeration plant room are provided with standardized direction on risks, hazards and safe operations. However, it is important that plant owners/operators clearly understand that this guideline is not a guarantee that compliance will be met. Compliance always rests with the plant owner or certified operator to design workplace specific procedures and training applicable to their operations.

The ORFA offers an [Ontario Ice Arena Refrigeration Compliance Guideline](#) that outlines known legislative obligations that should be reviewed as part of the operating manual updating or development process.

SECTION 1 – TECHNICAL STANDARDS AND SAFETY AUTHORITY



To assist the user in quickly referencing specific areas of the manual it is recommended that it be divided into sections with a front of the manual reference sheet. Use of standard break tabs available from a stationary supply store should be considered. It is left with each plant owner to determine in what sequences each section will be placed.

Tab #1

Every ice arena refrigeration plant procedure manual should reference the [Operating Engineers Regulation](#) as the primary legislative responsibility for all registered plants. Consider downloading and printing this document.

Tab #2

The [Boiler and Pressure Vessels Regulation](#) also directs most ice arena registered plants. Consider downloading and printing this document.

Tab #3

TSSA will at times release direction on how best to comply to the Regulations and Acts that they govern. The ORFA is aware of the following documents and recommends that they be added to the plant's procedure manual. It is further recommended that the plant operator discuss what other TSSA documents might be added directly with their TSSA Inspector.

[TSSA How Safe is Your Plant Issue 1](#)

[TSSA How Safe is Your Plant Issue 2](#)

[TSSA Plant safety Series #11 – Periodic Plant Inspections](#)

Although not an Ontario TSSA document, the Technical Safety BC – [Investigating Report Ammonia Release Fernie Memorial Arena October 17, 2017](#) should be added to all plant manuals that use ammonia as a refrigerant.

SECTION 2 – CANADIAN STANDARDS ASSOCIATION



Tab #4

The [CSA B-52 Mechanical Refrigeration Code](#) provides direction for new or retrofit of existing refrigeration plant room design. Plant owners or certified operators need to consider if updating existing plant equipment and safety devices to current Code to reduce risk and prove diligence. The Code may be purchased directly from CSA.

The ORFA also offers a resource entitled [Basic Compliance to the B 52 Mechanical Refrigeration Code](#) that may be helpful in training plant operators. It is available as a benefit of membership.

Pending plant room design, the B-52 Mechanical Refrigeration Code speaks to eye wash and deluge showers as well as leak sensing device requirements. The ORFA offers a [Facility Eyewash and Deluge Shower Installation and Maintenance](#) to assist plant owner/operators in better understanding the obligations for installation and maintenance.

SECTION 3 – MINISTRY OF LABOUR



Tab #5

The Ontario Occupational Health and Safety Act (OHSA), governed by the Ministry of Labour, also applies to a registered ice arena refrigeration plant room. The Act should be referenced, and contents identified in the procedure manual. Plant owners/operators should further reference Reg. 833 & 860 "Control of Exposure to Biological and Chemical Agents", Noise Reg. 381, WHMIS, First Aid and the mandatory Ministry of Labour Health and Safety training requirements and how they apply to the plant room. The ORFA has developed a comprehensive resource entitled [Basic Arena Refrigeration Governance and Quiz](#) for use by all plant operators and the quiz will help confirm understanding as part of their training.

SECTION 4 – ORFA



Tab #6

The inclusion of known refrigeration plant risks and hazards as general awareness is important information for all plant operators. The ORFA offers the [Registered Guarded Refrigeration Plant Risks and Hazards](#) resource as a starting point to this section.

The ORFA [Working Safely in Mechanical Rooms](#) is an additional resource that may be included in the plant's operating manual.

This area of the procedure manual should include past incidents or accident reports directly associated with the plant room or other plants controlled by the same owner.

Tab #7

It is essential that all plant owners collect details and record performance data and measurements on each refrigeration plant. This information forms the foundation to the plant's maintenance plans and life cycle. The ORFA with many other key stakeholders, created the [Safety Activities for Efficient Refrigeration \(SAFER\)](#) in 2002. This fill in the blank

tool guides all ice arena plant operators through the information collection process. It should be completed and form part of every registered refrigeration plant procedure manual.

Tab #8

This section should include all policies, procedures, and safe work practices that have been developed to assist plant operators in their duties. Focus on all tasks to be performed within the arena refrigeration plant should be identified with a step-by-step procedure that includes known risks and appropriate risk mitigation. An example would be the ORFA [Safely Draining Oil from a Flooded Evaporative Chiller](#) resource.

Tab #9

The plants, procedures manual must include the plants, maintenance plans. This information is site specific and must be developed by the plant owner or certified operator. Once collected, the information serves as a map on how the plant must be maintained, serviced and equipment replacement schedule. The ORFA offers the [Developing a Comprehensive Registered Refrigeration Plant Maintenance Plan](#) resource to assist in this section.

Tab #10

Refrigeration plant emergency planning is a required component of section 46 of the OER. The ORFA offers the [Ice Arena Ammonia Emergency Preparedness Auditing Guideline](#) resource to assist in meeting this obligation.

Also, the ORFA [Ice Arena Ammonia Charge Release to Atmosphere Guideline](#) may be of assistance. Although created for ammonia, the content is easily transferable to other refrigerants.

Tab #11

Disposing of refrigeration plant waste must be done in an environmentally friendly manner. Being aware of and compliant to Regulations 347 and 463/10 with respect to halocarbon refrigerants are essential. The ORFA offers the [Recreation Facility Environmental Waste Compliance Guideline](#) to assist in this obligation.

Tab #12

Other - This section should include all information that is important to safe ice arena plant operations. The ORFA offers many additional resources that can be downloaded and included in the refrigeration plants operating manual. All resources can be found in the Resource Centre of the ORFA website at www.orfa.com

Conclusion

This guideline should be considered the foundation of a procedure manual development. Each refrigeration plant owner/operator must customize their manual to reflect their operation. It should be considered a living/breathing document that must be continually updated and improved upon. Its purpose would be best served if used by all stakeholders of all registered refrigeration ice arena plant stakeholders.

ORFA Assistance

The ORFA would be pleased to discuss operating manual development support and staff training needs with any member prepared to invest in improved operations and regulatory compliance.

Please feel free to contact us at info@orfa.com or by calling 416.426.7062.

SECTION 5 – MINISTRY OF ENVIRONMENT AND CLIMATE CHANGE

