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# **NURSING HOME MAINTENANCE STANDARD**

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**Policy:** **Nursing Home Maintenance Standard**

*Approval Date:* *August 6, 2013*

*Effective Date:* *September 1, 2013*

*Approved by:* Kevin McNamara  
Deputy Minister, Department of Health and Wellness

*Signature:* *Original signed by Deputy Minister, Kevin McNamara, DHW*

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## 1 OBJECTIVE

The Department of Health and Wellness is the licensing body for nursing homes in Nova Scotia. Nursing homes are an essential part of the province's health care building infrastructure and, as such, the province has a vested interest in both the quality of the interior environment and the stewardship over the asset.

The objective of this standard is to support service providers in managing and maintaining the building and building systems in a state of good repair such that the efficiency and longevity of the building and its systems are maximized to the benefit of the comfort and health of its occupants.

This standard is intended to complement the requirements of published standards. Many requirements of this standard are drawn from those sources. Service providers are expected to comply with all other authorities having jurisdiction in the home.

This standard focuses on access to building system components to enable servicing and preventative maintenance of ventilation systems, emergency power systems, fuel storage systems and lifts.

## 2 SCOPE

This standard applies to Nursing Homes and Homes for the Aged licensed by the Department of Health and Wellness under the ***Homes for Special Care Act and Regulations***. Adherence to this standard is a requirement to maintain a nursing home license in Nova Scotia.

This standard is to be used in conjunction with all current legislation and regulations. If a discrepancy exists between this standard and current legislation and regulations, then the legislation and regulations shall take precedence.

## 3 DEFINITIONS

Administrator is responsible for the overall management of the home and ensuring the home complies with this standard.

Building Envelope is the term used to describe the shell of the home and primary protection from the outdoor elements. The building envelope includes the roof, outer and inside of the exterior walls, foundation and floors, windows and exterior doors.

Dedicated Ventilation Systems are those building ventilation systems designed to provide and ensure adequate air quality within a designated space to address localized or intermittent activities (e.g. kitchen hood, smoking room exhaust).

Emergency Power System is comprised of one (or more) electrical generators, its switchgear, fuel system, and in some cases its own storage building.

General Ventilation Systems are the building's mechanical ventilation systems

designed to provide and ensure adequate air exchange within the facility for safe and comfortable occupancy.

Leak means a gradual discharge or loss of petroleum product from a storage tank system, tank vehicle or vessel into the environment, other than through the usual function for which the storage tank system was designed, and "leakage" and "leaking" have corresponding meanings.

Maintenance Log is a record, maintained daily, of the maintenance, repairs, or adjustments completed on systems and their components.

Maintenance Supervisor is the person designated by the administrator to be responsible for the operation and maintenance of the building and its systems.

Nursing Home, including home for the aged, means a building or place or part of a building or place in which accommodation is provided or is available to persons requiring or receiving skilled nursing care.

Preventative Maintenance Program is a combination of all planned actions in a facility to prevent and detect deficiencies early in order to avoid potential failures.

Preventative Maintenance Schedule is a listing of all components requiring preventative maintenance and their planned frequency of servicing.

Qualified Service Providers are independent contractors determined by the equipment manufacturers or vendors to be qualified to maintain the specified equipment based on the independent contractors' knowledge, training and experience.

Service Area is a room or space that is used for housing or accessing serviceable components of building systems which provide the building with ventilation, heat, water, fire protection, energy, communication, or medical gases.

Service provider, for the purpose of this document, refers to the licensed nursing home owner.

Spill means a release of a substance.

Storage tank system means one or more aboveground fuel storage tanks or underground storage tanks and all connecting piping whether aboveground or underground, including pumps and product transfer apparatus, dyking, overfill protection equipment and associated spill containment and collection apparatus.

Aboveground storage tank means a storage tank with more than 90% of its volume above surface grade and that operates at atmospheric pressure plus or minus 10 kPa.

Aboveground storage tank system means one or more commonly connected aboveground storage tanks and all connecting piping, both aboveground and underground, including pumps and product transfer apparatus, dyking, overfill protection equipment and associated spill containment and collection apparatus.

Underground storage tank means a storage tank with 90% or more of its volume beneath the ground surface or covered or partially covered with material including, but limited to, earth, backfill or concrete.

Underground storage tank system means one or more underground storage tanks and all connecting piping whether above ground or underground, including pumps and product transfer apparatus, dyking, overflow protection equipment and associated spill containment and collection apparatus

#### **4 GENERAL**

Service providers/administrators are responsible to operate and maintain the building to provide the occupants with a comfortable, safe and functional environment suitable for the provision of long term care and maximize the longevity of the building and its components.

Published or recognized standards, regularly used in Canada, are to be accepted as best practice and guide the service providers in operating and maintaining the nursing home. The administrator shall ensure that a preventative maintenance program is in effect. This program shall encompass both structural components and equipment. As part of annual licensing, these standards will be monitored.

The administrator shall designate a person as the maintenance supervisor.

For specialized or highly technical systems where external expertise is required, service providers must contract for preventative maintenance (e.g. emergency power systems, ventilation system controls). If informed by the Department of Health and Wellness that a home is not meeting the requirements of this standard, the service provider is required to respond within 10 working days with a written plan to address the deficiency.

Where correction of the deficiency requires funding beyond the current operating or capital allocation, the plan to address the deficiency is to include estimates of cost. If the Department of Health and Wellness or designated authority agrees that a funding contribution is appropriate, correction of the deficiency will be pending the allocation of funding.

#### **5 SERVICE AREA REQUIREMENTS & ACCESS**

Administrators/maintenance supervisors are responsible to ensure the following:

Service areas must be readily accessible to maintenance staff, secure, clean, dry and free of unnecessary obstructions that prevent or hinder component maintenance.

Storage of items in service areas must be restricted to supplies, equipment and tools required for the maintenance of building systems.

The provision of sufficient access to systems and their components to enable inspection and servicing is the responsibility of the service provider/administrator.

The installation of new central ventilation systems in existing facilities is to provide, where practical, walk up and safe all weather access to service areas (portable ladders are not permitted). Where units must be roof-mounted, provision of roof access stairs and defined roof paths is acceptable.

The installation of new components in existing systems is to allow for sufficient clearance and access points to enable and encourage proper maintenance.

In instances where facility construction did not provide for access to service areas, practical options to improve access are to be considered and implemented over time as agreed with the Department of Health or designated authority.

In instances where facility construction did not provide for access to ventilation system components, access doors are to be provided where practical.

In instances where system access cannot be readily provided, exceptions to certain maintenance task frequencies may be granted (in writing) by the Department of Health and Wellness or designated authority.

## **6 ELECTRICAL SYSTEMS**

### ***Emergency Power System***

Where the capability exists, the emergency power system must start and take load automatically when utility power fails.

The maintenance supervisor shall have a process in place to ensure the administrator is kept informed of electrical system failures or significant component failures that prevent the full operation of the electrical system.

Administrator/maintenance supervisor shall develop and implement a preventative maintenance schedule for the emergency power system. Equipment suppliers and system designers should be consulted when developing a preventative maintenance schedule.

On an annual basis, the emergency power system shall be verified and serviced by a qualified service provider with an inspection report provided.

Beyond the requirements for maintenance as stipulated by the manufacturer, activities as per Table 1 are required.

The maintenance supervisor is responsible to maintain a maintenance log.

The administrator shall review the status of the systems monthly with the maintenance supervisor and sign to acknowledge completion of the listed events.

The administrator shall ensure that the Department of Health and Wellness or designated authority is informed of significant emergency power system stoppages or significant component failures that prevent the full operation of the system as per its design.

<b>Table 1-Preventative Maintenance for Emergency Power System</b>							
<b>Component</b>	<b>Daily</b>	<b>Weekly</b>	<b>Bi-weekly</b>	<b>Monthly</b>	<b>Quarterly</b>	<b>Semi-annually</b>	<b>Annually</b>
<b>Service Space</b>	<b>F*</b>						
<b>Exterior Louver</b>				<b>C</b>			
<b>Intake Plenum</b>				<b>C</b>			
<b>Damper</b>				<b>B</b>			
<b>Actuator</b>				<b>B</b>			
<b>Drive Belt</b>				<b>B</b>			
<b>Shaft Bearings</b>				<b>B</b>			
<b>Hoses</b>				<b>A</b>			
<b>Full Load Test</b>				<b>D</b>			
<b>Supplier verification</b>							<b>E</b>
<b>Task</b>	<b>Description</b>						
<b>A</b>	Visually inspect for leaks and wear						
<b>B</b>	Visually inspect for abnormal conditions. Ensure operability and lubricate as required.						
<b>C</b>	Visually Inspect for cleanliness, microbial growth, build-up or leaks. Clean or repair as necessary.						
<b>D</b>	Observe for proper operation.						
<b>E</b>	Engage supplier to verify full operation and issue report.						
<b>F</b>	Visit space. Look and listen for abnormal situations such as noises, leaks or odours.						
<b>*</b>	For Services Spaces and devices that are difficult to access, this frequency may be reduced by one level.						



## **7. MECHANICAL SYSTEMS**

### ***Ventilation System Inventory***

For each ventilation system, a written description is required noting: the name of the system, a general description of its configuration, the area served, the hours of operation, the main unit location, access points, and, if available, the air flows.

For each ventilation system, a listing of all those components forming part of the ventilation system listed in Table 2 is required.

### ***Ventilation System Operation & Maintenance***

General Ventilation Systems shall operate at all times the building is in use to ensure adequate air exchange in occupied areas and/or prevent condensation and/or moisture accumulation.

Dedicated ventilation systems are to be operated intermittently as usage demands to provide the best environment possible with the existing systems.

Each ventilation system shall be named and have a fixed permanent label clearly visible on both the unit and on the shut off switch.

The maintenance supervisor shall ensure the administrator is kept informed of all ventilation systems stoppages or significant component failures which prevent the full operation of a ventilation system.

The administrator/maintenance supervisor shall develop and implement a preventative maintenance schedule for each ventilation system. Equipment suppliers and system designers should be consulted when developing preventative maintenance schedules.

Standing water in ventilation systems may be hazardous and is not permitted.

Table 2 provides a minimum benchmark for the preventative maintenance of the building's ventilation systems and recognizes that many facilities have limited ventilation system access.

Homes that have ventilation systems that require, or were built so as to encourage more extensive or higher frequency of preventative maintenance activities are required to follow the equipment suppliers and system designer's recommendations but in no case will these practices be less than Table 2.

The maintenance supervisor is responsible to maintain a maintenance log. The administrator shall review the status of ventilation systems monthly with the maintenance supervisor and sign the maintenance log to acknowledge completion of the listed events.

The administrator shall ensure the Department of Health and Wellness or designated authority is informed of significant ventilation system stoppages or significant component failures that prevent the full operation of a ventilation

system.

The maintenance supervisor shall ensure a stock of lubricants and consumable spare parts such as filters, belts, and fuses are always at hand.

Modifications to the building structure and/or changes in use of space are to include a review of the need to alter ventilation systems to ensure adequate ventilation. Confirmation of this review must be on file. Refer to Section 6(1) of the *Homes for Special Care Act and Regulations*.

Table 2- Minimum Preventative Maintenance for Ventilation Systems

Component	Daily	Weekly	Bi-weekly	Monthly	Quarterly	Semi-annually	Annually
Service Space	F*						
Exterior Louver					C		
Intake Plenum					C		
Damper				B			
Actuator				B			
Pre-Filter			A				
Filter			A				
HEPA Filter			A				
Drive Belt		B*					
Shaft Bearings		B*					
Cooling Coil					C		
Heating Coil					C		
Humidifier				C			
Humidifier Nozzles		E					
Drain pan		E					
Sensors							D
Heat Recovery Unit					C		
Supply Fan				B*			
Exhaust Fan				B*			
Exhaust Plenum					B		
Supply Diffusers		G		A			
Exhaust Grilles		G		A			
<b>Task</b>	<b>Description</b>						
A	Visually inspect for cleanliness, integrity and fit. Clean repair or replace as necessary.						
B	Visually inspect for abnormal conditions. Ensure operability and lubricate as required.						
C	Visually Inspect for cleanliness, microbial growth, build-up or leaks. Clean or repair as necessary.						
D	Verify accuracy. Recalibrate or replace as necessary.						
E	Visually inspect for proper operation and microbial growth. Clean as necessary and ensure water does not pool. Verify trap seals.						
F	Visit space. Look and listen for abnormal situations such as noises or leaks.						
G	Verify system air flow with flag test on selected diffusers and grilles.						
*	For services areas and devices that are difficult to access, this frequency may be reduced by one level.						

## 8 FUEL STORAGE SYSTEMS

The service provider/administrator shall ensure the safe operation of the fuel storage systems and establish whether the systems are regulated under the Environment Act or unregulated using the following guideline.

- (a) Underground storage tanks 2000 L or greater, is a regulated system;
- (b) Aboveground storage tanks 4000 L or greater, is a regulated system;

### ***Regulated Systems***

If it is determined that the systems are regulated, service provider/administrator shall ensure that the system is registered with Nova Scotia Environment.

<b>Regulated Fuel Storage Systems</b>	
	<b>Description</b>
<b>Task</b>	Ensure regulated fuel storage systems are registered with Nova Scotia Department of Environment.
<b>Contact</b>	Petroleum Storage Tank Systems Nova Scotia Environment 1030 Upper Prince Street, Suite 2 Sydney, Nova Scotia B1P 5P6 Phone: 902-563-2100 FAX: 902-563-2387

### ***Unregulated Systems***

All fuel storage tanks that are not regulated will be subject to the following;

The requirements for maintenance as stipulated by the manufacturer shall be followed. The administrator shall ensure that the Department of Health and Wellness or designated authority is informed of component failures that prevent the full operation of the system as per its design.

It is required that the maintenance supervisor maintain a maintenance log of fuel storage systems and that the administrator review the status of the fuel storage systems with the maintenance supervisor. It is also required that the administrator sign the maintenance log to acknowledge completion of the listed tasks.

<b>Table 3- Unregulated Fuel Storage Systems</b>		
<b>Component</b>	<b>Quarterly</b>	<b>Annually</b>
<b>Identification Label</b>		<b>C</b>
<b>Concrete foundation, base</b>	<b>B</b>	
<b>Tank legs</b>	<b>B</b>	
<b>Exterior finished surface</b>	<b>A</b>	
<b>Gauges</b>	<b>B</b>	
<b>Filter, valves, piping</b>	<b>A</b>	
<b>Vent, whistle</b>	<b>B</b>	
<b>Protective guards</b>	<b>B</b>	
<b>Caps</b>	<b>B</b>	
<b>Secondary containment system</b>	<b>A</b>	
<b>Inspect and service by a qualified service provider</b>		<b>D</b>
<b>Task</b>	<b>Description</b>	
<b>A</b>	Visually inspect component for damage, moisture and seepage	
<b>B</b>	Visually inspect component for damage,	
<b>C</b>	Ensure label information is available and recorded in the maintenance log	
<b>D</b>	Engage supplier to verify condition of tank and issue report.	

## 9. LIFTS FOR THE TRANSFER OF PERSONS (Ceiling Lifts)

It is required that each nursing home have a policy regarding the development and implementation of a preventative maintenance schedule for ceiling lifts in accordance with the stipulations and recommendations of the manufacturer.

Beyond the requirements for maintenance as stipulated by the manufacturer, activities as per Table 4 are required. A complete inventory of all ceiling lifts is to be maintained by the facility, complete with installation locations, weight limits of track, lift models and serial numbers.

Lifts must be load tested and serviced by a qualified service provider with an inspection report provided. It is also required that the administrator review the status of ceiling lifts monthly with the maintenance supervisor and that the administrator sign the maintenance log to acknowledge completion of the listed tasks.

<b>Table 4- Preventative Maintenance for Ceiling Lifts</b>					
<b>Component</b>	<b>Daily</b>	<b>Monthly</b>	<b>Quarterly</b>	<b>Semi-annually</b>	<b>Annually</b>
<b>Track</b>		<b>D</b>			
<b>Trolley</b>		<b>D</b>			
<b>Carry bar</b>	<b>C</b>	<b>A</b>			
<b>Motor Housing</b>		<b>A</b>			
<b>Lift strap</b>	<b>C</b>	<b>A</b>			
<b>Slings</b>	<b>C</b>	<b>A</b>			
<b>Battery charger</b>		<b>B</b>			
<b>Hand control buttons</b>		<b>B</b>			
<b>Emergency pull cord</b>		<b>A</b>			
<b>Full Load Test</b>					<b>E</b>
<b>Supplier verification &amp; Report</b>					<b>E</b>
<b>Task</b>	<b>Description</b>				
<b>A</b>	Visually Inspect component for damage and wear. Repair / replace as necessary.				
<b>B</b>	Visually inspect for abnormal conditions. Ensure operability and adjust / repair as required.				
<b>C</b>	Operators to observe for abnormal operation.				
<b>D</b>	Ensure track is clean, level & complete with end caps				
<b>E</b>	Engage qualified service provider to conduct load test, full operation and issue report.				

## **10 REFERENCES**

The following standards are applicable in whole or in part to the design, construction, and operation of all systems in nursing homes. Maintenance supervisors are encouraged to be familiar with these and other resources.

### **Emergency Power Generator Standards**

- Canadian Electrical Code: Part One (Latest Edition) - Section 24 - Patient Care Areas.
- CSA Z32-09 Electrical Safety and Essentials Electrical Systems in Health Care Facilities - Chapter Six.

### **Fuel Storage Systems Standards**

- Pursuant to Sections 25 and 84 of the Environment Act in accordance with the Department of Environment.
- National Standard of Canada's CAN/ULC-S602, Aboveground Steel Tanks for the Storage of Combustible Liquids Intended to Be Used as Heating and/or Generator Fuels.
- Underwriters' Laboratories of Canada's ULC/ORD C80, Aboveground Non-metallic Tanks for Fuel Oil.
- CSA B139-04 Installation Code for Oil-Burning Equipment.

### **General Standard**

- Homes for Special Care Act & Regulations

### **Lifts for the Transfer of Persons (Ceiling Lifts)**

- CAN/CSA-Z10535-03 Hoists for the Transfer of Disabled Persons - Requirements and Test Methods.

### **Ventilation Standards**

- ANSI/ASHRAE 62-2001: Ventilation for Acceptable Indoor Air Quality (2001).
- CSA Z317.2-01: Special Requirements for Heating, Ventilation, and Air Conditioning (HVAC) Systems in Health Care Facilities (2001).