The St. Lawrence Seaway Management Corporation

Corporation de Gestion de la Voie Maritime du Saint-Laurent

SLSMC Corporate Safety Requirements for Contractors

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1. DEFINITIONS

In this manual, unless the context requires otherwise, the following definitions shall apply:

1. **Accident or Incident**: An event attributable to any cause, happening to a person, arising out of or in the course of his work and resulting in a work injury to him.

2. **Act/Law**: All applicable municipal, provincial and federal acts, regulations, laws and codes.

3. **CNESST:** Commission des Normes, de l'Équité, de la Santé et de la Sécurité du Travail (Quebec).

4. **Competent person:** A person who is qualified because of knowledge, training and experience to organize the work and its performance, is familiar with acts and regulations relating to occupational health and safety as they apply to the work, and has knowledge of any potential or actual danger to health or safety in the work place.

5. **Contract:** An agreement, whether verbal or in writing, between SLSMC and a third person, including a Contractor.

6. **Contractor**: The person to whom the Contract is awarded by SLSMC and who is obliged to perform all the work stipulated in the Contract. The Contractor is at all times and under all circumstances responsible for all the activities of his workers, Subcontractors or any other person accessing the Contractor's Worksite(s).

7. **Danger**: Any existing or potential hazard or condition or any current or future activity that could reasonably be expected to cause injury or illness to a person exposed to it before the hazard or condition can be corrected, or the activity altered, whether or not the injury or illness occurs immediately after the exposure to the hazard, condition or activity, and includes any exposure to a hazardous substance that is likely to result in a chronic illness or in disease.

8. **Engineer**: Engineer who is a member of the provincial association of engineers of the province in which the work is being performed.

9. **Hazard:** Any situation, substance, activity, event, or environment that could potentially cause injury or illness.

10. **Health and Safety Legislation**: Includes, without limitation, Part II of the *Canada Labour Code* (Occupational Health and Safety) and regulations enacted thereunder, as amended from time to time, and, as the case may be:

    (a) For any work performed in the province of Ontario, the Ontario *Occupational Health and Safety Act* (OHSA) and regulations enacted thereunder, including Regulation 213-91 – *Construction projects*, as amended from time to time;

(b) For any work performed in the province of Quebec, the Quebec *Act Respecting Health and Safety* (AOHS) and regulations enacted thereunder, including the *Safety Code for the Construction Industry*, as amended from time to time.

11. **High-Risk Work:** Any work which involves an inherently higher risk of injury or illness, including without limitation using hoisting equipment or man-baskets, working at heights, working in confined spaces, handling heavy loads, and working with designated substance chemicals.

12. **HRSDC:** Human Resources and Skills Development Canada (Labour Canada).

13. **MOL:** Ontario Ministry of Labour.

14. **Operator:** A person responsible for operating or driving vehicles or equipment.

15. **Risk:** The probability, severity and frequency that a hazard will cause harm.

16. **SLSMC:** St. Lawrence Seaway Management Corporation.

17. **SLSMC Contract Leader**: Any individual designated by SLSMC as representing SLSMC with respect to Contractors, or as the Prime contact for a Contractor for duration of a construction project.

18. **SLSMC Property**: Property owned or managed by SLSMC.

19. **Subcontractor**: Any person to whom the Contractor assigns part or all of the execution of work, the supply or manufacturing of materials or equipment.

20. **Visitor**: A person authorized by the Contractor to briefly visit the worksite.

21. **Worker**: Any person who performs work or supplies services for monetary compensation for the Contractor or his Subcontractors, or as a consultant to these parties.

22. **Worksite(s)**: The specific place or physical location designated jointly by SLSMC and the Contractor where is performed erection, alteration, repair, dismantling, demolition, structural maintenance, painting, land clearing, earth moving, grading, excavating, trenching, digging, boring, drilling, blasting, or concreting, the installation of any machinery or plant, and any work or undertaking in connection with the contracted work.

23. **WSIB**: Ontario Workplace Safety and Insurance Board (Ontario).

2. INTRODUCTION

1. The purpose of this document is to outline SLSMC's expectations as it relates to safety guidelines and requirements for Contractors, Subcontractors, constructors and their respective employees (collectively referred to as the "**Contractors**" or a "**Contractor**") working on SLSMC Property or carrying out an activity controlled by SLSMC.

2. The purpose of these safety guidelines is to protect the health, safety and physical well-being of all persons by eliminating hazards, reducing exposure to hazards and thereby reducing risk.

3. The Contractor is responsible for reviewing, complying with and enforcing Health and Safety Legislation, as defined herein, and for determining their applicability in relation to the Contract prior to the start of work.

4. The Contractor is exclusively responsible for ensuring compliance with all applicable legislation, including Health and Safety Legislation, and the requirements set forth therein.

5. The safety requirements contained herein do **not** address all potential health and safety matters associated with the use of the Contractor's materials, equipment and/or operations. The Contractor shall be responsible for identifying potential health and safety risks and determining the appropriate measures to ensure the health, safety and physical well-being of Workers, in consultation with the regulatory authorities, to achieve compliance with applicable laws and regulations, including Health and Safety Legislation.

6. The safety requirements contained herein shall complement the site-specific safety program developed by the Contractor working on SLSMC Property, as further detailed below.

7. The Contractor and its personnel are required to familiarize themselves with and ensure the day-to-day application of this document and to cooperate fully with SLSMC personnel.

8. In addition, the Contractor and its personnel are required to familiarize themselves with and ensure the day-to-day application of the SLSMC *Standard Working Practices* ("**SWP's**"), *Accident Prevention Notices* ("**APN's**"), Safety Notices, Lockout/Tagout Procedures, Confined Space Assessments, and any other SLSMC procedures or requirements which are disclosed to the Contractor or included in the terms of the Contract, as the case may be.

9. The Contractor is responsible for reviewing this document with any and all of its Subcontractors, and for ensuring that their Subcontractors comply with all requirements contained in this document.

3. GENERAL RULES

3.1 Assumptions

The safety requirements are based on the following assumptions:

1. All accidents or incidents causing loss or injury can reasonably be prevented.

2. It is possible to eliminate or prevent hazards or exposure to hazards that may lead to injuries, property damage or loss of time.

3.2 Contractor's responsibilities:

The Contractor shall, without limitation:

1. Ensure that all work performed at the Worksite is done having due regard to health and safety, and that every Subcontractor and Worker on the Worksite complies with applicable Health and Safety Legislation.

2. Promptly identify and implement measures to address any issues or concerns related to health and safety at the Worksite.

3. Perform or authorize **no** task, regardless of its urgency, unless it can be performed in complete safety.

4. Take all reasonable steps necessary to ensure the protection of Workers, customers, property and the public.

5. Conduct regular worksite inspections and act promptly in all situations where there is a risk to safety, health or the environment.

6. Report all Accidents or Incidents immediately to SLSMC Contract Leader and provide the SLSMC Contract Leader with a written report within 24 hours following any such Accidents or Incidents.

7. Investigate all Accidents or Incidents having caused or risked causing losses or injury, in order to identify the cause or causes, and immediately take the appropriate corrective measures to prevent their recurrence.

8. Report to the SLSMC Contract Leader any agency visit or inspection on a Worksite, including any visit or inspection by MOL or CNESST, and provide the SLSMC Contract Leader with any report received from such agency with regards to the Worksite within 24 hours of such receipt.

9. Take all necessary steps to ensure that the Workers and all persons granted access to the worksite and who are under the Contractor's control or who are present at the latter's request, including Visitors, understand and comply with the safety requirements contained herein and with the laws, regulations and safety programs in effect.

10. Provide the Workers with adequate training to ensure that they can perform their work safely.

11. Provide and maintain in good condition all safety device, including personal and collective protective equipment for the Workers.

12. Ensure that the Workers wear all personal protective equipment in a safe manner and in accordance with all applicable instructions and/or requirements specific to such personal protective equipment.

13. The Contractor shall be responsible for inquiring and obtaining all relevant information from SLSMC on the restrictions inherent to certain work performed during the navigation season.

4. SITE RULES

4.1 Compliance with regulations

1. The Contractor is fully responsible for the occupational health and safety of the Workers, in accordance with the Contract.

2. The Contractor shall prepare its site-specific health and safety program and those of its Subcontractors, in accordance with Health and Safety Legislation, and submit such programs to SLSMC before the beginning of the work.

3. SLSMC is a federally-regulated corporation, it being understood that the work performed on SLSMC Property is generally governed by provincial legislation as it relates to the Contractor, and generally governed by federal legislation as it relates to SLSMC. The Contractor has a continuing duty to inquire and remain at all relevant times informed as to the content and obligations provided by legislation as it relates to their work.

4. The Contractor shall comply with and apply the most restrictive or demanding requirements of all federal, provincial and municipal laws, regulations and codes and SLSMC requirements.

4.2 Site set-up

4.2.1 Before entering SLSMC Property

Before entering the SLSMC Property, the Contractor shall:

1. Submit for review to the SLSMC Contract Leader, the Contractor's site-specific safety program at least one (1) month prior to start of any activity at the Worksite(s).

2. Prior to commencement of work, at the end of the work, and at any time upon request by SLSMC, provide the SLSMC Contract Leader with a "**Clearance Certificate**" issued by the WSIB and/or the "**Certificate of Conformity**" issued by the CNESST shall also be submitted to SLSMC at the end of the work.

3. Promptly indicate to SLSMC in writing the name of the person responsible for enforcing the Contractor’s safety program.

4.2.2 Pre-construction Meeting

1. The Contractor shall attend the pre-construction meeting with SLSMC. The agenda of this meeting shall include, without limitation, the following topics:

   - The requirements contained in this document;
   - SLSMC procedures;
   - Site Access and Security, Maritime Marine Security (MARSEC) and Marine Transportation Security Regulations;
   - Contractor's obligations;
   - Contractor's site-specific health and safety program;
   - Work planning;

- Initial site safety orientation session planning.

2. SLSMC shall give a copy of the first site meeting minutes to the Contractor's representatives within ten (10) days of the meeting date. Any outstanding safety deficiencies shall be promptly corrected by the Contractor and submitted to SLSMC within ten (10) days after the meeting minutes are released.

3. The Contractor shall communicate all information discussed at the meeting to his foremen, Subcontractors and other persons responsible for Contract execution.

4.2.3 Site Safety Orientation

1. The Contractor shall prepare a **site-specific** safety orientation and hold a site safety orientation session with **all** Workers, including Subcontractors, prior to them starting work at the site, as well as Visitors, as the case may be. It is strongly recommended that a quiz or test of knowledge be included as part of the safety orientation.

2. The purpose of the session is to inform all Workers of the health and safety program and all instructions applicable to the Worksite, including all emergency procedures and this document.

3. SLSMC authorized personnel may on occasion attend the site safety orientation session and take part in discussions.

4. The Contractor shall disallow access to anyone to entering the Worksite without having attended a site-specific safety orientation session. The Contractor shall organize additional site safety orientation sessions for new Workers or Visitors, as necessary.

5. The Contractor shall submit the Contractor's site-specific safety orientation to the SLSMC Contract Leader for review at least one month prior to the start of the work;

6. The Contractor's site safety orientation shall include, without limitation, the following topics:

   - Contractor internal safety policy and program overview;
   - SLSMC requirements specific to navigation, security, health and safety and emergency management;
   - Overview of Health and Safety Legislation and resulting responsibilities;
   - Role of the worksite health and safety committee and safety representatives, including meetings, inspections, work refusals;
   - Site trailer or truck safety posting requirements (see below for complete list);
   - Harassment prevention policy/workplace violence prevention policy and program;
   - Personal Protective Equipment (PPE) and Personal Protective Clothing (PPC) requirements;
   - Eye wash locations;
   - Washrooms;

- Access/egress requirements;
- Guardrail requirements;
- Tool inspection and management;
- Lifting equipment (slings, wire rope, shackles, etc.) inspection and management;
- Inspection of cranes, fork truck, lifting booms, scaffold, etc.;
- Environmental requirements, such as waste disposal, not washing concrete trucks to allow run-off to the ground, proper containment for fuel containers, etc.;
- Specific water hazards, underground utilities (locates) and overhead power line awareness;
- Traffic protection plan (if required) and speed limits;
- Fire safety, hot work, fire prevention and fire extinguisher locations;
- Emergency management, response, contacts and medical services locations;
- First aid/CPR trained persons;
- Appropriate housekeeping, snow/ice clearing, work area/road scraping and continual collection of garbage and debris;
- Appropriate safety/trade training evidence, including certificates;
- Moving equipment and vehicle back-up/driving hazards;
- Disciplinary action procedure;
- Reporting of incidents procedure to SLSMC and MOL (as required) and report within 24-48 hours to SLSMC;
- All known specific job hazards, for example: working at heights, lockout/tagout, confined space entry, noise, welding/cutting and vehicle movement.

7. The Contractor shall ensure that all Workers have current and appropriate safety and trade training. Training records shall be kept on the project site and be accessible to review by SLSMC authorized personnel. The training shall include, but not be limited to:

   (a) Worker safety awareness;

   (b) Workplace violence and harassment prevention;

   (c) Workplace Hazardous Materials Information System (WHMIS);

   (d) Working at heights;

   (e) Lockout/Tagout, confined space, etc.;

   (f) Machine-specific training (crane, fork truck, pile driver, etc.);

   (g) Trade-specific training (pipefitter, electrician, welder, millwright, etc.).

4.2.4 Worksite Health and Safety Committee

1. Pursuant to applicable Health and Safety Legislation, a worksite health and safety committee may be required based on the number of employees and/or the duration of a project.

2. If required by applicable Health and Safety Legislation, the Contractor shall cause a worksite health and safety committee to be established and maintained at the Worksite as soon as the work begins, and all the requirements under this Section shall apply.

3. The Contractor shall ensure compliance with applicable Health and Safety Legislation in respect of the selection, composition, maintenance, meetings and exercise of powers of the worksite health and safety committee or representative, as applicable.

4. The worksite health and safety committee shall be chaired by the Contractor and consist of at least the following members, subject to any specific requirement provided for in applicable Health and Safety Legislation:

    (a) A management representative of the Contractor at the Worksite;

    (b) A worker representative of the Contractor;

    (c) A representative of each of the Subcontractors; and

    (d) Any other person deemed necessary by the Contractor.

5. SLSMC shall have the right to designate a representative to act as an observer to any of the worksite committee meetings and to discuss any relevant issue, if it deems it necessary.

6. The Contractor shall provide the worksite health and safety committee with any information required to be provided in accordance with applicable Health and Safety Legislation.

7. The worksite health and safety committee or representative shall inspect the Worksite at least once a week and all situations affecting safety, health or the environment shall be dealt with promptly. A report shall be prepared in respect of any such Worksite inspection outlining any identified health and safety deficiencies or concerns and actions taken as a result, which shall be kept on file and available for inspection by SLSMC authorized personnel.

8. The Contractor shall provide the worksite health and safety committee or representative with information and assistance as may be required for the purpose of carrying out inspections of the Worksite.

9. The worksite health and safety committee shall meet as often as necessary, and at least once a week for the purpose of:

    (a) Studying and making recommendations on occupational health and safety concerns, including sources of danger or hazards;

    (b) Analyzing accident and incident reports and making recommendations;

    (c) Ensuring the worksite health and safety committee's recommendations are being followed up.

10. The worksite health and safety committee or representative shall investigate any failure of a Worker to comply with occupational health and safety standards and requirements and make relevant recommendations.

11. The Contractor shall take minutes of every meeting of the worksite health and safety committee, post copies in the workplace and distribute copies to:

    (a) Site committee members;

    (b) A representative designated by SLSMC; and

    (c) Any other persons involved who request them.

12. The Contractor shall ensure that the recommendations made by the worksite health and safety or representative committee are followed up.

4.2.5 Worksite access

The Contractor shall:

1. Ensure that the Worksite has adequate visible physical boundaries by using necessary equipment such as barriers and fences.

2. Only admit to the Worksite those Workers, including Subcontractors, and Visitors who have attended a site safety orientation session described in Section 4.2.3 herein.

3. Maintain a registry with all names and proof of identity of each Visitor accessing a Worksite, including the date and hour of access to the Worksite and date and hour of leaving the Worksite, and keep such registry at the Worksite and at the disposal of the SLSMC Contract Leader for consultation.

4. Ensure that any Visitor wears the appropriate personal protective equipment and is escorted at all times by a duly authorized representative of the Contractor while at the Worksite.

5. Comply with and ensure that any person granted access to the Worksite complies with the *Marine Transportation Security Act*, the *Marine Transportation Security Regulations* enacted thereunder, and any maritime security system (*MARSEC*), as it relates to site access.

6. Without limiting the foregoing, prohibit access to the Worksite to any person who:

    (a) Does not comply with any safety standard or requirement; and/or

    (b) Has been ordered off the Worksite by SLSMC, or by the Contractor's worksite health and safety committee.

4.2.6 Contractor's file

1. The Contractor shall prepare a list divided by Subcontractor, of the people in charge to be contacted in the event of an emergency, indicating their function for

a particular project, the name and address of their employer and the appropriate contact numbers (office, fax, cellular, pager, and home). The Contractor shall provide a copy of this list the SLSMC Contract Leader and promptly advise the SLSMC Contract Leader of any changes.

2. The Contractor shall maintain a safety file, which shall contain:

   (a) Notices issued by SLSMC or jointly by SLSMC and the Contractor;

   (b) Notices issued by the MOL, WSIB, CNESST, HRSDC (Labour Canada) and other authorities;

   (c) Disciplinary measures;

   (d) Accident statistics and accident investigation reports;

   (e) Record of attendance at safety committee meetings;

   (f) Site-Specific Safety program;

   (g) Report on periodic safety briefings or safety notices;

   (h) Engineering certifications and inspection records for fall protection equipment;

   (i) Copies of certifications of vehicles/construction equipment and/or equipment operators and inspection records of vehicles/construction equipment;

   (j) Any other records required to be established and maintained in accordance with applicable Health and Safety Legislation.

4.2.7 Notices from public agencies

The Contractor shall advise SLSMC immediately and within 24 hours with a copy of all notices, orders, reports, or other communications received from federal, provincial or municipal government, agencies or representative of public agencies.

4.2.8 Specific hazards during the navigation season

1. Certain potential hazards specific to SLSMC's operations exists during the navigation season, which the Contractor shall expect to encounter. These potential hazards include, <u>but are not limited to</u>:

   (a) <u>Mooring Lines</u>: Some vessels moor to bollards on SLSMC's structures with ropes (wire rope or rope of other materials). There is a hazard of these ropes breaking unexpectedly under tension. As such, the Contractor shall ensure that no Worker or Visitor stand in-line with a mooring line, step over a mooring line nor work in close proximity to a mooring. Mooring lines also present a potential tripping hazard.

   (b) <u>Lock Operator Carts</u>: The Contractor shall note that there are golf carts on the lock structures which are used to transport operations personnel

and equipment around the lock structures. The Contractor shall ensure that every Worker and Visitor are aware of these operations.

(c) Water Levels: The Contractor shall note that lock water level may change elevation unexpectedly, presenting an engulfment hazard. If the Contractor requires the water maintained at a certain elevation, the Contractor shall be responsible for making necessary arrangements with the SLSMC Contract Leader for the lock to be brought to the required water level and then lockouts applied to the lock filling or discharge valves.

2. The Contractor shall ensure that any work performed on the Worksite, or any access thereto, takes into due consideration these potential hazards, as well as any other potential hazards specific to the navigation season.

4.2.9 High-Risk Work

1. The Contractor shall advise SLSMC in advance and in writing, of the means of protection it intends to use for High-Risk Work, as defined herein.

2. The Contractor shall submit to SLSMC any changes to a High-Risk Work procedure included in its safety program prior to implementation.

3. The Contractor shall control access to its work area and identify high-risk areas.

4.2.10 Vehicles

1. The Contractor shall ensure that the speed limits posted on SLSMC Property and local regulations, as applicable, are respected at all time by Workers.

2. Any vehicles of the Contractor's Workers shall only be parked in designated parking areas, with appropriate SLSMC parking permit.

4.2.11 Worksite housekeeping

1. The Contractor shall remove at regular intervals from the Worksite all rubbish and surplus materials as work progresses.

2. The Contractor shall keep traffic and Worker access and exit routes clear of any obstruction. Access routes must be properly guarded where there is a risk of Worker's falling or debris falling.

3. Authorization to store equipment or materials on SLSMC Property shall be obtained from SLSMC Contract Leader in advance.

4.2.12 Potential danger zones

Where there is a hazard nearby, the Contractor shall ensure that it is properly guarded.

4.2.13 Lighting

The Contractor shall provide sufficient lighting in a given work area to allow the safe performance of work.

4.2.14 Tools, extension cords, hoses

1. The Contractor shall ensure that all tools, extension cords and hoses are in good condition, with a ground fault or double insulation. Extension cords and hoses shall be protected or hung and not be placed in traffic areas. Extension cords not in use shall be unplugged from the power source.

2. Equipment should be grounded and all electrical equipment inspected as required by applicable legislation.

4.2.15 Compressed air

1. The Contractor shall ensure that all air hoses attached to a pneumatic tool are secured with an attachment device at every joint. This device may be a "whip line" or other suitable device.

2. The Contractor shall ensure that any work performed which involves compressed air is done in strict compliance with applicable Health and Safety Legislation.

4.2.16 Compressed gas

The Contractor shall ensure that cylinders of any compressed gas including oxygen and combustible gas (acetylene), when used, are stored in a well-ventilated area, restrained and in an upright position. Caps shall be used and the cylinders secured when cylinders are stored and transported. The Contractor shall also ensure that oxygen is not stored with flammable substances and shall be stored as prescribed in the National Fire Prevention Code.

4.2.17 Smoking

1. Smoking is not permitted in any indoor worksite of SLSMC.

2. In addition, smoking may be restricted in certain outdoor worksites, which shall be appropriately marked. The Contractor is responsible for ensuring that all applicable restrictions respecting non-smoking areas is complied with on the Worksite, including any restriction set forth in applicable legislation.

4.3 Personal protective equipment

4.3.1 Site access

1. The Contractor shall ensure that all persons having access to the worksite shall at all times wear all appropriate safety equipment to meet Health and Safety Legislation and any referenced CSA standards. The following safety equipment shall be required as a minimum for access to the Contractor's Worksite(s):

    (a) Safety headwear;

    (b) Protective footwear (minimum of six inches (6") high);

    (c) Protective eyewear;

    (d) High visibility vest or clothing.

2. The Contractor shall ensure that appropriate signs are posted in conspicuous locations at the Worksite, which shall clearly indicate any personal protective equipment required to be used at the Worksite or in a specific area.

3. It is the Contractor's responsibility to ensure that safety equipment, including safety clothing, is used, stored and maintained properly in accordance with the manufacturer's requirements and applicable Health and Safety Legislation.

4. The wearing of protective glasses does not remove the obligation to wear face shields, welding glasses with filters, welder's masks, etc., when the instructions, rules or nature of the work requires the wearing of such equipment to protect the eyes and face.

4.3.2 Standards and certification

1. Contractor shall ensure that any and all personal protective equipment:

    (a) Is approved by Canadian Standards Association (CSA);

    (b) Protects against the hazards for which the equipment was designed; and

    (c) Does not in itself constitute a hazard.

2. Personal protective equipment provided by the Contractor shall be maintained, inspected and checked by a qualified person in accordance with the manufacturer's instructions.

4.3.3 Potential danger zones

Hearing protection, face shields, respiratory protection, lifejackets, fall protection equipment and all other special protection devices shall be used in any and all cases where a potential hazard exists, and/or where any work is performed in an area where signs are posted which require the use of certain protection equipment.

4.3.4 Clothing

1. The Contractor shall ensure that Workers are suitably dressed to perform their duties safely. Loose clothing, long hair, pendants, jewelry or other objects that may be hazardous to Workers' health and safety at the worksite are prohibited, unless they are tied, covered or otherwise secured.

2. Clothing of non-synthetic materials shall be worn whenever there is a hazard of sparks or fire, and as required by the work.

3. When Workers are exposed to the sun for extended periods of time, they shall wear clothing and appropriate creams that protects them from sun exposure.

4.4 Emergency and accident plans

4.4.1 Emergency procedures

1. The Contractor shall prepare emergency procedures and an evacuation plan for the Worksite prior to commencing work, which shall be reviewed by the worksite

health and safety committee or representative, as applicable.

2. The Contractor shall ensure that all persons having access to the worksite are familiar with the emergency procedures and evacuation plan before being authorized to enter the Worksite.

3. The Contractor shall ensure that each Worker has ready access to a telephone or other system of two-way communication on the Worksite in the event of an emergency.

4. The Contractor shall keep an up-to-date list of emergency numbers, including SLSMC emergency numbers provided in **Appendix 1** - "**Emergency Telephone Numbers**".

5. As part of its emergency procedures, the Contractor shall include immediate notification to SLSMC of any emergency, including the following details:

    (a) The location of the emergency;

    (b) The nature of the emergency;

    (c) The assistance required;

    (d) The type of injury and condition of the victim(s).

6. The Contractor's emergency procedures shall include notification of the SLSMC's Operations Control Centre (OCC) Emergency Line **(905) 641-1932**, Extension **5911**, as was numbers listed under **Appendix 1 - "Emergency Telephone Numbers"**. Should the Contractor elect to use 911 as the Contractor's primary emergency telephone number, the Contractor shall also call SLSMC's OCC Emergency Line immediately as a secondary call.

7. The Contractor shall keep the following records posted at the Worksite:

    (a) Written emergency procedures and directions to the nearest hospital;

    (b) List of first-aid attendants;

    (c) Material safety data sheets.

8. The Contractor shall participate and cooperate with SLSMC and all other authorities involved in the planning and realization of emergency procedure and evacuation exercises implemented by the Contractor, SLSMC or any other authority. These exercises may be conducted at anytime and anywhere at the Worksite.

4.4.2 First aid

1. The Contractor shall prepare a list of its first aid attendants, including those of its Subcontractors.

2. The Contractor shall ensure that appropriate measures are in place to provide immediate first aid assistance to Workers, including Workers working at an

isolated workplace. Where required by applicable Health and Safety Legislation, the Contractor shall provide a first aid room.

3. The Contractor shall ensure that there is a sufficient number of first-aid kits for the number of Workers, and the Contractor shall maintain the proper order and cleanliness of all first-aid materials.

4. The Contractor shall ensure compliance with Health and Safety Legislation respecting first-aid in the workplace, including the *First-aid Minimum Standards Regulation* (Quebec) and the Regulation 1101 – *First Aid Requirements* (Ontario), as applicable.

4.4.3 Rescue procedures

1. The Contractor shall provide written rescue procedures to the SLSMC Contract Leader at least ten (10) days before any work is to begin. These procedures shall comply with Health and Safety Legislation, including regulations issued by the governing bodies and any other directive issued by SLSMC.

2. Proper rescue equipment shall be available at the site at all times.

4.4.4 Emergency transportation

The Contractor shall arrange for adequate emergency transportation of injured Workers before commencing work at a Worksite.

4.4.5 Fire prevention

1. The Contractor shall provide, at each Worksite, a sufficient number of ABC or equivalent-type fire extinguishers to provide reasonable protection as required by work activity. The fire extinguishers shall be provided at readily accessible and adequately marked locations on the Worksite.

2. The Contractor shall ensure that all Workers are trained on and are familiar with the use of fire extinguishers.

3. The Contractor shall maintain a register of fire extinguisher inspections, as well as the location of extinguishers at the Worksite.

4. The Contractor shall ensure compliance with applicable Health and Safety Legislation respecting fire safety on the Worksite.

4.4.6 Accident or Incident response and investigation

1. In the event of the death of a person or if a person is seriously injured from any cause on the Worksite, the Contractor:

    (a) Shall immediately notify by phone SLSMC Contract Leader and follow the Contractor's emergency procedures;

    (b) Shall notify the Ontario Ministry of Labour (in the province of Ontario) or the CNESST (in the province of Quebec), as well as the worksite health and safety committee or representative and any trade union (as

applicable) immediately by telephone or other direct means.

(c) In addition to the above, the Contractor must notify in writing the director of the Ministry of Labour (in the province of Ontario) or the CNESST (in the province of Quebec), as applicable, providing the circumstances of the occurrence and any other information required to be provided in accordance with applicable Health and Safety Legislation. The notification must be provided within 48 hours of the occurrence in the province of Ontario, and within 24 hours of the occurrence in the province of Quebec.

(d) Shall not interfere with, disturb, destroy or alter the scene in relation with the occurrence until permission is granted by the competent governmental body, unless the Contractor is doing so in accordance with the specific exceptions set forth in applicable Health and Safety Legislation, including to save a life, relieve human suffering in the vicinity, or prevent unnecessary damage to or loss of property.

2. In the event of any Incident or Accident, other than the occurrence set forth in paragraph 1 above, the Contractor:

(a) Shall immediately by phone and/or email notify the SLSMC Contract Leader. Depending on the circumstances, notification may also be required to be provided in writing to HRSDC (Labour Canada), a director of the Ontario Ministry of Labour, the WSIB and/or the CNESST, as applicable, the whole in accordance with applicable Health and Safety Legislation.

(b) Shall not disturb the Accident or Incident scene until the investigation has been completed, unless it is necessary to do so in order to avoid exacerbating the injury or to prevent a recurrence of the Accident or Incident.

3. At the request of the SLSMC Contract Leader, the Contractor shall suspend operations in the specified area of the Worksite until further notice by the SLSMC Contract Leader.

4. Upon completion of the project work, the Contractor shall provide SLSMC with a list of the work Accidents and Incidents that occurred during the course of the work.

5. The Contractor shall conduct investigations into Accidents and Incidents in accordance with applicable Health and Safety Legislation, and submit Accident and Incident reports to the Contractor's worksite health and safety committee and implement the worksite health and safety committee recommendations.

6. The Contractor shall submit to the SLSMC Contract Leader an investigative report within 24 hours of any occurrence which involves:

(a) The death of a Worker;

(b) The injury of a Worker or to several Workers;

(c) The fall of an employee attached to a fall protection system;

(d) An employee losing consciousness as a result of electrical shock;

(e) The tipping over of or damage to scaffolds or any lifting equipment;

(f) A fire or an explosion;

(g) The need for rescue, resuscitation or any other emergency measures;

(h) Property damage of $50,000 or more;

(i) An environmental incident.

7. Nothing in this Section shall limit the Contractor's obligations to comply with any other requirements provided for in applicable Health and Safety Legislation.

4.5 Working above or near water

1. The Contractor shall ensure compliance with all applicable laws and regulations respecting work above or near water, including, in the province of Quebec Division XI – *Work above or near water* of the *Safety Code for the Construction Industry*, and in the province of Ontario the *Diving Operations Regulations* (Reg 629/94).

2. Without limiting the generality of the foregoing, the Contractor shall ensure that all required training certifications are held by each person in charge of preparing any work descriptions, transportation plans or rescue plans prescribed by regulations, as the case may be, and individuals in charge of transportation or rescue operations.

4.6 Working near locks

1. The Contractor shall ensure that no person on a Worksite accesses within two (2) meters of any unprotected edge, where there exists a hazard of a potential fall of 2.4 meters or greater, unless appropriate fall protection system is used with a rescue plan.

2. The Contractor shall ensure that no person on a Worksite accesses within two (2) meters of any unprotected edge, where there exists a hazard of a potential fall of less than 2.4 meters into water, unless personal floatation devices are used with a rescue plan.

3. The Contractor shall ensure that no person on a Worksite accesses within two (2) meters of any unprotected edge when drowning hazard exists, unless fall protection and personal flotation devices are used with a rescue plan.

4. The Contractor shall note that there is a yellow line existing approximately one (1) meter from the unprotected edges of locks and approach walls. This yellow line pertains to requirements of certain procedures for the SLSMC's operations personnel and is not relevant for the Contractor's operations.

4.7 Working near railway tracks

1. The Contractor shall ensure that no work is done within ten (10) meters of any railway track, or as required by the railway company, without the railway company's authorization. If such authorization is given, the Contractor shall comply with the procedures established by the railway company. This may include additional training or orientation for the Workers at the Contractor's expense.

2. Since the Contractor's work may have repercussions on rail operations, SLSMC reserves the right to prohibit or halt, without prior notice, any work that has not been coordinated in advance with SLSMC personnel.

3. The Contractor shall ensure that no trucks or machines cross the railway track anywhere other than a level crossing, unless special precautions are taken with the railway company's authorization.

4. The Contractor shall not impede train movement and shall ensure that no person walks on the rails.

4.8 Work in Confined Spaces

4.8.1 Definitions

Confined space: Enclosed or partially enclosed space that

(a) Is not designed or intended for human occupancy except for the purpose of performing work;

(b) Has restricted means of access and egress, and;

(c) May become hazardous to any person entering it owing to:

(i) its design, construction, location or atmosphere;

(ii) the materials or substances therein; or

(iii) any other conditions relating to it.

4.8.2 Regulation

1. The Contractor shall ensure that work to be performed in a confined space is done in strict compliance with applicable Health and Safety Legislation and shall comply, as a minimum, with the requirements of the SLSMC's confined space assessments.

2. The Contractor shall provide SLSMC with its written procedures or program for confined space work ten (10) days prior to the start of such work. Such written procedures or program shall be provided to the worksite health and safety committee or representative, as applicable. If the Worksite has no health and safety committee or health and safety representative, the written procedures or program for confined space work shall be made available to every Worker who performs work wo which the procedures or program relates.

3. The Contractor shall ensure that only trained, qualified and authorized people enter a confined space. The Contractor shall ensure that no person closes off a confined space until a qualified person has verified that no person is inside it.

4. If there is a possibility of unauthorized entry into a confined space, the Contractor shall ensure that each entrance to the confined space is adequately secured against unauthorized entry or has been provided with adequate barricades and/or adequate warning signs regarding unauthorized entry.

5. The Contractor shall provide on-site competent personnel trained in confined space rescue for the duration of the work in spaces deemed by SLSMC to be "confined spaces".

4.9 Lockout and Tagging Procedures

The Contractor shall comply with the lockout procedure of SLSMC, a copy of which is included in **Appendix 5 –** "**Lockout and Tagging Procedures**".

4.10 Diving activities

1. The Contractor shall comply with: (i) Part XVIII – "Diving Operations" of the *Occupational Safety and Health Regulation*, adopted under the *Canada Labour Code* , as amended from time to time, (ii) in the province of Quebec, Division XXVI.I – "Underwater Work" of the *Regulation respecting occupational health and safety* adopted under the Quebec *Occupational Health and Safety Act*, as amended from time to time, and (iii) in the province of Ontario, the "Diving Operations" Regulation 629/94, adopted under the Ontario *Occupational Health and Safety Act*, as amended from time to time.

2. The diving contractor shall sign the "*Divers Release*" form, a copy of which is in **Appendix 6**, before starting underwater works or inspection. Such signature shall be obtained once per Contract.

4.11 Site Safety/Environmental/Emergency Posting Requirements

As a minimum the items noted below must be posted in a conspicuous location at the Worksite where they are most likely to come to the attention of the Workers (either in lunch trailer or job trailer or be available in a construction vehicle for crews which are not utilizing a construction trailer):

- In Ontario: An up-to-date copy of the Ontario *Occupational Health and Safety Act* & Regulation 213 for Construction Projects ("the green book"), and Regulation 1101 (first aid regulation enacted under the Ontario *Workplace Safety and Insurance Act*);
- In Quebec: An up-to-date copy of the Quebec *Act Respecting Health and Safety* and the *Safety Code for the Construction Industry*;
- Company health/safety policy and program;
- Company workplace violence and harassment policy;
- Governmental site visit report and/or orders;
- MSDSs or SDSs for products on site;
- Emergency procedures and response plan;

- Fall arrest rescue procedures;
- In Ontario: "In Case of Injury" WSIB poster;
- In Ontario: MOL poster, "Health/Safety at Work: Prevention Starts Here";
- In Ontario: MOL Notice of Project (form 0175);
- In Ontario: MOL form 1000 "Registration of constructors and Employers Engaged in Construction";
- In Ontario: Address and phone of the nearest MOL office;
- Workplace harassment prevention and workplace violence policies, where applicable;
- Name of constructor and head office information;
- DANGER signs in hazardous areas;
- Location of toilets and clean-up facilities;
- Valid certificate of first aiders;
- Inspection card for first aid box;
- Employer records of first aid treatment given;
- Name, trade, work location and employer of health/safety representative and each member of the health and safety committee and copies of health and safety committee meeting minutes/inspections;
- Emergency phone number and location of nearest hospital;
- Any other items required to be posted under applicable Health and Safety Legislation.

4.12 Specific Safety Compliance

In addition to the potentially hazardous conditions and equipment noted above, the Contractor's site-specific safety program shall address the following:

- Chemical management and compliance with chemical safety regulations such as Workplace Hazardous Materials Information System;
- Cranes, rigging and lifting equipment;
- Suspended work platforms;
- Man hoisting platforms;
- Electrical safety hazards such as arc flash potential, working live, high voltage and equipment commissioning;
- Underground services and locates;
- Fall prevention;
- Excavations and trenching;
- Traffic control;
- Machine guarding;
- Ladders;
- Welding, cutting and hot work;
- Pipeline and equipment purging;
- Cell phone use;
- Distracted driving precautions;
- Violence and harassment policies and programs;
- Any other items required to be included in accordance with applicable Health and Safety Legislation.

5. CONTROL MEASURES

5.1 Non Compliance With These Standards

Non-compliance with the standards and requirements set out in this document or with applicable legislation and regulations, including Health and Safety Legislation, will not be tolerated by SLSMC.

5.2 Work Stoppage and Penalties

1. Failure by the Contractor, Subcontractors or Workers to respect established safety requirements may lead to temporary stoppage of the work, immediate suspension or termination of the Contractor, Subcontractor or Worker at fault, closure of the site until the situation is corrected or even removal of the Contractor, Subcontractor or Worker from the Worksite.

2. Delays resulting from such closings and any resulting penalties shall be charged to the Contractor. The Contractor shall have no recourse against SLSMC in this regard and shall indemnify and hold SLSMC harmless as a result thereof.

3. No extension to the contractual work completion date will be granted as a result of any work stoppage resulting from a safety violation.

4. SLSMC may withhold payments to ensure correction of safety violations.

5.3 Safety compliance

1. The Contractor is responsible for ensuring compliance with all safety rules, standards, laws and regulations in effect.

2. Anyone, including SLSMC's employees and others, may remind the Contractor of its contractual and legal obligation to implement safety measures.

5.4 Safety Audits and Inspections

1. In addition to the safety audits and inspections conducted by Contractor and Subcontractors, SLSMC may also conduct inspections by its personnel or SLSMC contract personnel.

2. Any deficiencies identified by SLSMC personnel or SLSMC contract personnel, will be promptly communicated to the Contractor's personnel for immediate action.

6. PREVENTION OF WORKPLACE ALCOHOL AND DRUG PROBLEMS

6.1 Application of Policy

The following provisions shall apply to the Contractor, Subcontractors, Workers, suppliers and Visitors when on SLSMC Property. Because SLSMC's concern for health and safety also extends to the operations of the Contractor, Subcontractors and suppliers, SLSMC also encourages the Contractor, Subcontractors and suppliers to

implement their own alcohol and drug policies.

6.2 Policy standards

The Contractor shall, as a minimum, ensure that its representatives, the Subcontractors, Workers, suppliers and Visitors, remain free from any adverse effects of alcohol or other drugs and conduct themselves in an appropriate manner while conducting business on SLSMC Property. Having been informed by SLSMC of the provisions of this policy, the Contractor is expected to ensure that his Subcontractors, Workers, suppliers and Visitors adhere to the following standards:

(a) No use, possession, distribution or sale of illegal drugs or drug paraphernalia;

(b) No possession, distribution or sale of an alcoholic beverage and no use of any form of alcohol;

(c) Responsible use of prescribed and over-the-counter medications;

(d) No distribution, offering or sale of prescription medications;

(e) To report for duty and remain during the entire period of duty free of the negative or mood altering effects of alcohol and any other drugs, including the after-effects of such use.

6.3 Consequences of violation

Failure of the Contractor or its Workers to meet these standards will be considered a breach of the contract, and may, at SLSMC's sole discretion, result in an immediate suspension or termination of the Contract or termination of the employee who committed the breach.

6.4 Policy violation procedure

Where SLSMC personnel has reasonable grounds to believe any individual in the employ of the Contractor or any other supplier of services is on duty in an unsafe condition or otherwise in violation of the policy, or where during the preliminary phase of any investigation such an individual has been identified as being directly involved in the chain of acts or omissions leading up to an accident or incident:

(a) SLSMC will notify the Contractor or the supplier of services so that it may escort the individual(s) to a safe place;

(b) The Contractor shall investigate the situation;

(c) The Contractor shall satisfy SLSMC that there has been no policy breach;

(d) If a policy breach has occurred, the individual will not be allowed to continue providing services to SLSMC without permission from an SLSMC official, and he/she will be required to adhere to any conditions governing his return.

7. FINAL PROVISION

This document has been prepared by SLSMC in order to facilitate the execution of works by Contractors in accordance with health and safety requirements provided by applicable legislation. SLSMC does not represent that this document is a complete document which sets out all applicable health and safety requirements provided by applicable laws and regulations. As such, it is strongly recommended that each Contractor that is retained by SLSMC consult with its own legal adviser with respect to its health and safety obligations as provided by federal, provincial and local legislations.

* * *

Any questions related to this document are to be addressed to the SLSMC Contract Leader.

Appendix 1

EMERGENCY TELEPHONE NUMBERS

The St. Lawrence Seaway Management Corporation

Corporation de Gestion de la Voie Maritime du Saint-Laurent

EMERGENCY TELEPHONE NUMBERS

NIAGARA REGION (WELLAND SHIP CANAL)
Made SLSMC Telephone (905) 641-1932

Ext.
5911

MAISONNEUVE REGION (MONTREAL TO LAKE ONTARIO)

	{Internal number for requesting assistance}
Port of Montreal:	911
St.-Lambert:	[{2366}] 9-911
Côte Ste-Catherine:	[{2766}] 9-911
Lock 3:	[{33}] 9-911
Lock 4:	[{62}] 9-911
Kahnawake:	(450) 632-2010
Bridge 9:	(450) 377-1707
Bridge 10:	9-911
Iroquois:	9-911

Appendix 2

PROTOCOL FOR MEDICAL EMERGENCIES & RESCUE SERVICES

The St. Lawrence Seaway Management Corporation

Corporation de Gestion de la Voie Maritime du Saint-Laurent

PROTOCOL FOR MEDICAL EMERGENCIES & RESCUE SERVICES

Should you have a medical emergency or rescue situation, it is critical that you respond quickly and orderly. The objective is to save lives.

STEP 1

When an accident has occurred, if possible, obtain the first aid kit or have someone bring it to the scene of the accident. Assess the situation appropriately.

Call, or have someone call the **EMERGENCY NUMBER**. Include the following details:

- Identify who you are
- Identify what services you require i.e. Ambulance, Fire Dept. etc.
- Give the exact location and status of the injured worker
- State if CPR and/or first aid is being performed
- Include the nature of the emergency- diving, electrical contact, fall, drowning etc., if conscious or unconscious
- Identify if any special equipment is required for the rescue i.e. air ambulance, Stokes Stretcher, crane

*Be sure to notify the injured worker and personnel providing emergency care that Emergency Personnel have been called.

**Note:

In Niagara Region (Welland Canal):
Navigation Season Notify SLSMC Operations Control Centre (OCC) (ext. 5911)
Non-Navigation Season Notify SLSMC Camera Watch Traffic Control.

In Maisonneuve Region (Montreal to Lake Ontario):
At all times, advise the emergency personnel by calling 9-911.

STEP 2

Have someone go to a location i.e. Road entrance to structure to **direct** the Emergency Personnel to the right location. **In Niagara Region**, if possible, stay in contact with SLSMC Operations Control Centre.

STEP 3

Continue to provide emergency care (First Aid, CPR) to the injured worker until Emergency Personnel arrive. In Niagara Region, advise the SLSMC OCC of any changes in the injured workers condition.

STEP 4 (NIAGARA REGION ONLY)

When the injured worker is stable, and if you have time, it would be helpful to obtain the following information:

- Date, time of accident or onset of illness;
- Name of injured/ill worker including age;
- Chief complaint;
- Pulse and respiration;
- Any allergies;
- Medication;
- Past medical history;
- Time of last meal;
- Events at time of accident/illness;
- What first aid was given;
- Person(s) who provided first aid/CPR.

Appendix
3A

CONFINED OR RESTRICTED SPACES
(Niagara Region)

The St. Lawrence Seaway Management Corporation

ACCIDENT PREVENTION NOTICE # 16 CONFINED SPACE PROCEDURES

1. General

This notice details the procedures, which ALL personnel MUST follow prior to entering or being involved with the entering a confined spaces within the Niagara Region.

The Canada Labour Code requires that the employer identify all confined spaces and assesses their hazards prior to entering a confined space.

2. Confined Spaces - Definition

"Confined Space" means an enclosure or partially enclosed space that:

a. is not designed or intended for human occupancy except for the purpose of performing work;
b. has restricted means of access and egress; and
c. may become hazardous to an employee entering it due to:
   - its design, construction, location or atmosphere
   - the materials or substances in it, or
   - any other conditions relating to it.

"Hot Work" means any work where flame is used or sources of ignition may be produced.

3. Hazard Assessment

Consult the Confined Space intranet site for the confined space in question which includes the Hazard Assessment. If the confined space in question is not identified on the intranet inventory immediately advise your supervisor and/or a member of the Workplace Health and Safety Committee. **DO NOT ENTER UNTIL THE HAZARD ASSESSMENT HAS BEEN PROVIDED OR A NEW ONE COMPLETED.**

In the event that an assessment has not been performed for a location requiring entry, an onsite assessment by qualified personnel can be performed. Currently the SLSMC defines qualified personnel as any organization retained by the SLSMC to perform confined space assessments under contract, or the Emergency Rescue Services organization. In the event that an in-field assessment is performed, the documentation is to be submitted to the Supervisor so that it can be incorporated into the SLSMC confined space intranet web page.

4. Equipment

a. Whenever equipment is required as identified during the completion of the Confined Space Entry Permit and Pre-Entry Inspection Sheet, available on the confined space intranet page, use only equipment provided and approved by SLSMC, which is certified by Canadian Standards Association (CSA) or approved by an Engineer.
b. Portable gas detectors* are located in the following locations:

i. Ground Floor of Maintenance Building, near CAD plotters

*Portable gas detectors are to use in accordance with Section 7 of this APN.

c. Unless completion of the pre-entry check list dictates otherwise, communication for the entering team and top side team will include radios and/or cell phones, voice, and/or other alarm/communicating devices deemed appropriate by the supervisor.
d. Radio, cell phone or an area phone close by to access emergency services via extension **5911** as per SLSMC Accident Prevention Notice #41

5. Documentation

The following documentation must be completed by the entering team lead member in charge of the entering team members and reviewed and signed by the team member's supervisor. The following documentation must be reviewed by all personnel prior to entering a confined space.

1. Confined Space Entry Permit
2. Pre-Entry Inspection Sheet - Checklist for Confined Spaces

6. Responsibilities

Supervisor:

a. Ensure that every team member understands this notice (APN #16), the associated hazards, and any related specific work procedure and/or develop a new procedure prior to entry if required. Ensure that employees are familiar with the safety equipment to be used and are capable of operating the gas detector.
b. Identify and ensure all team members agree on the steps to be taken in the execution of the planned work or in the event of an emergency, and define individual roles and responsibilities.
c. Initiate the CONFINED SPACE ENTRY PERMIT and complete together with the entering team up to the Authorization section of the permit. This entry permit is compulsory.
d. Initiate the CONFINED SPACE PRE-ENTRY INSPECTION SHEET AND ENTRY PERMIT ACTIVITY LOG, PG 2 OF 2 to be completed by the entering team. ENSURE ALL FIELDS ARE COMPLETED AS REQUIRED AND SIGN.
e. Ensure that for the duration of the work performed in a confined space, at least two employees are on site - one who enters the space and the other stands-by in the immediate vicinity, remaining in contact at all times with the person in the space, Site Safety Attendant.
f. Ensure employees use adequate communication equipment as defined in this APN and establish the communication and emergency protocols.
g. All liquid in which the worker could drown has to be removed from the confined space. Rates of flow and the level of any incoming liquids/water are to be constantly monitored.
h. Ensure all documents are returned to the supervisor and completed accurately upon completion of the work.
i. Sign all returned paperwork to complete the process and maintain a file of completed permits and check lists.
j. Ensure no one re-enters a confined space once the work is complete and the paperwork submitted under the same permit.

Employees Performing the Work - Entering Team

Before entering a confined or restricted space, each team member is responsible for the following.

a. Participation in the completion and submission to the supervisor of all ENTRY PERMITS AND CHECK LISTS prior to, during, and after the completion of work as appropriate.
b. Ensure the area at the entrance to the confined space is kept clear of debris and other hazards prior to and during the course of the work. During entry this function is performed by the site safety attendant.
c. Review and comply with all applicable APNs and SWPs appropriate for the work involved as determined during the Entry Permit and Pre-Entry check list completion effort.
d. Ensure a person has been stationed at entrance of confined space for the duration of the entry - the Site Safety Attendant, prior to any entry being performed.
e. Establish the communication protocol with the team members as per their roles and responsibilities.

Note: The communication protocol is to be established prior to entry and documented on the "PRE-ENTRY INSPECTION SHEET"

f. Establish the emergency protocol to be activated in the event of an emergency.
g. Review the Entry Permits and Pre-Entry Inspection Sheet with all team members to ensure all areas have been addressed and sign under the section "Authorization" and "Completed By" as appropriate.
h. Tests all communication equipment prior to the team entering the confined space. Entry is not to proceed until all required communication equipment is functioning properly.

Site Safety Attendant

A person outside of the confined space has the following duties:

a. Reviews together with the entering workers all applicable location assessments including all known hazards in order to understand the nature of the hazards that may be found inside the confined space and can recognize signs, symptoms and behavioral effects that workers inside the confined space may experience.
b. Complete the Metering Results portion of the confined space permit during the entry process as provided by the entering workers.
c. Maintains communication with the workers inside the confined space as established with the workers and supervisor prior to entry.
d. Monitor the entry point surrounding area for any hazardous conditions including ensuring no vehicles or equipment come within the entry work area could prevent emergency vehicles from accessing the area.
e. Maintain the entry/exit log and ensure workers performing the work sign the entry log.
f. Remains outside the confined space and does no other work which may interfere with their duty of monitoring workers inside the confined space.
g. Monitor the confined space conditions through maintaining communication with the entering team.
h. Orders the immediate evacuation if potential hazards, not already controlled are detected.

i. Calls for emergency assistance (ext. 5911) immediately if an emergency develops. The Site Safety Attendant may be required to also call local emergency services through 911 as established prior to entry during the entry permit process.
j. Prevents entry of persons not listed on permit
k. Is available to provide non-entry emergency assistance when needed.
l. Is the holder of a basic first aid certificate and is capable of performing CPR.
m. Together with the other workers, terminates the permit and ensures all personnel have vacated the site.

Rescue Services

The SLSMC currently employs the services of an organization who specialize in the performance of emergency rescue from confined spaces. When this Emergency Rescue Services group in on site, they will act as Site Safety Attendant, and perform rescue if required. It is the responsibility of this rescue service organization to review all confined space documentation and permits prior to anyone entering the confined space. They will provide all necessary rescue equipment. They may also elect to use their own entry permit form. This is acceptable in lieu of the SLSMC provided document, however, the form MUST BE FILLED OUT AND SUBMITTED TO THE SUPERVISOR FOR RECORD PURPOSES. A copy is acceptable.

7. Testing

Note: No confined space shall be entered without the air being analyzed first and in compliance with the limitations defined in this APN.

Only personnel trained in the proper use and reading of gas detectors is permitted to enter a confined space.

Only portable gas detectors (air monitors) provided by the SLSMC are to be used by SLSMC personnel.

Only portable gas detectors with a positive bump test ticket shall be used by SLSMC personnel.

All confined spaces shall have the air quality monitored prior to, during and immediately after exiting the confined space.

The results of these air quality readings are to be entered on the Entry Permit Log sheet by the Site Safety Attendant or other team member if the Site Safety Attendant cannot.

a. If the detector does not sound an alarm, the employee may then enter the confined space. The alarm set points in a confined space are as follows:
    - Oxygen: Less than 19.5% and not more than 23% by volume, supported by bump testing
    - Flammable Limits: Greater than 10% of LEL
    - Carbon Monoxide: Greater than 25 ppm
    - Hydrogen Sulfide: Greater than 10 ppm

Note: If gases change substantially, quickly leave the site and re-evaluate.

b. If higher acceptable % of flammable limits (*LEL: Lower Explosive Limit) are present, the condition shall be reported to the appropriate supervisor immediately, the area barricaded as is and all planned work in the confined space cease until the condition in rectified.
c. If the Oxygen (02) level is less than 19.5% or greater than 23% or Hydrogen Sulphide (H2S) is greater than 10 ppm or Carbon Monoxide (CO) is greater than 25 ppm, the following steps must be taken - reference valves.
    - Do not enter, ventilate the confined space, and
    - Analyze the air again after 10 minutes and every 10 minutes thereafter, until the air in the confined space returns within acceptable limits. It is then possible to enter the confined space using personal protective equipment and a gas detector.
d. When visual contact is to be lost, make arrangements with the employee who is outside the confined space concerning the maximum period of time required for the work or the inspection and establish communication intervals. Once this time is expired, the employee who is outside will try to contact the worker via the established communication protocol. Failing a reply, they shall follow the emergency procedure.
e. The following steps are required for the duration of welding work and work requiring the use of solvents:
    - Ventilate the confined space from the beginning to the end of the work. Use only ventilation equipment approved by an SLSMC engineer.
    - Use only electric tools that are double insulated or use a ground-fault detector with the tool.
f. Post the entry permit near the site access.

If at any time irritation of the eyes, nose or throat, difficulty in breathing, dizziness or ringing in the ears are experienced, all persons shall leave the confined space and shall not return until the atmosphere has been re-tested and found safe using the other testing instruments or recalibrated equipment or the source of irritant has been eliminated.

Smoking is not permitted at any time in a confined space.

8. Emergency Procedure - Site Safety Attendant only on site

The use of Site Safety Attendant in lieu of 3rd party rescue services will be permitted on an as-advised basis through safety notice. Unless otherwise indicated, 3rd party rescue services are required.

a. When entering a confined space with an assessment permitting a Site Safety Attendant only, qualified rescue personnel are available through the 5911 or 911 system as defined during the entry permit process.
b. If the air quality instrument alarms, or the entering teams safety is in any way compromised, all personnel in the confined space are to leave IMMEDIATELY.
c. If a situation arises where there is a hazardous condition and the worker does not leave or is unable to leave the confined space, rescue procedures should begin immediately as follows:
    i. Providing it does not put anyone in danger, never leave an injured or sick employee unattended in a confined space.
    ii. The site safety attendant stationed at the entrance of the confined space will call the emergency number 5911 or 911 and use mobile radio to contact the Operations Control Centre to advise of the emergency and specify that the emergency situation is occurring in a

confined space. The Accident Prevention Notice #41 - Protocol for Medical Emergencies shall be followed.

iii. The air quality is to be monitored continuously by remote sampling so long as it does not put the Site Safety Attendant in danger.

iv. Available personnel are to provide assistance to Emergency Services as required.

v. Request help from available personnel to direct the Emergency Services to the proper site.

vi. Ensure all motor vehicles that can stop the Emergency Services from doing their job efficiently have been moved.

vii. Once the Emergency Services has been called inform the Coordinator / Supervisor of the situation.

viii. Once the situation is under control, the supervisor is to inform the Manager and the Occupational Health and Safety Officer of the situation.

9. Emergency Procedure - Emergency Rescue Services on site

The SLSMC currently employs the services of an organization who specialize in the performance of emergency rescue from confined spaces. These services are provided when Entry, Non-Entry and IDLH Rescue is identified in the confined space assessments. (See "Item 8. Emergency Procedure - Site Safety Attendant only on site" for permitted alternatives to this requirement). When Emergency Rescue Service groups are on site, they will perform rescue if required. The SLSMC is still required to contact emergency medical services, or other support services, or Emergency Services Team determined to be required at the time of an incident.

a. When entering a confined space with an assessment requiring standby rescue service, either entry or non-entry type, ensure qualified rescue personnel are on site - the Emergency Rescue Services are responsible for determining the required equipment.
b. If the air quality instrument alarms, or the entering teams safety is in any way compromised, all personnel in the confined space are to leave IMMEDIATELY.
c. If a situation arises where there is a hazardous condition and the worker does not leave or is unable to leave the confined space, rescue procedures should begin immediately as follows:
    i. Providing it does not put anyone in danger, never leave an injured or sick employee unattended in a confined space.
    ii. The site safety attendant stationed at the entrance of the confined space will call the emergency number 5911 or 911 and use mobile radio to contact the Operations Control Centre to advise of the emergency and specify that the emergency situation is occurring in a confined space. The Accident Prevention Notice #41 - Protocol for Medical Emergencies shall be followed. THE SITE SAFETY ATTENDANT SHALL SPECIFY TO EMERGENCY SERVICES THAT SPECIALIZED RESCUE SERVICES ARE ON-SITE PERFORMING RESCUE and specify if other Emergency Services are required.
    iii. The air quality is to be monitored continuously by remote sampling so long as it does not put the Site Safety Attendant in danger.
    iv. Available personnel are to provide assistance to Emergency Rescue and other Emergency Services as required.
    v. Request help from available personnel to direct the Emergency Services to the proper site.

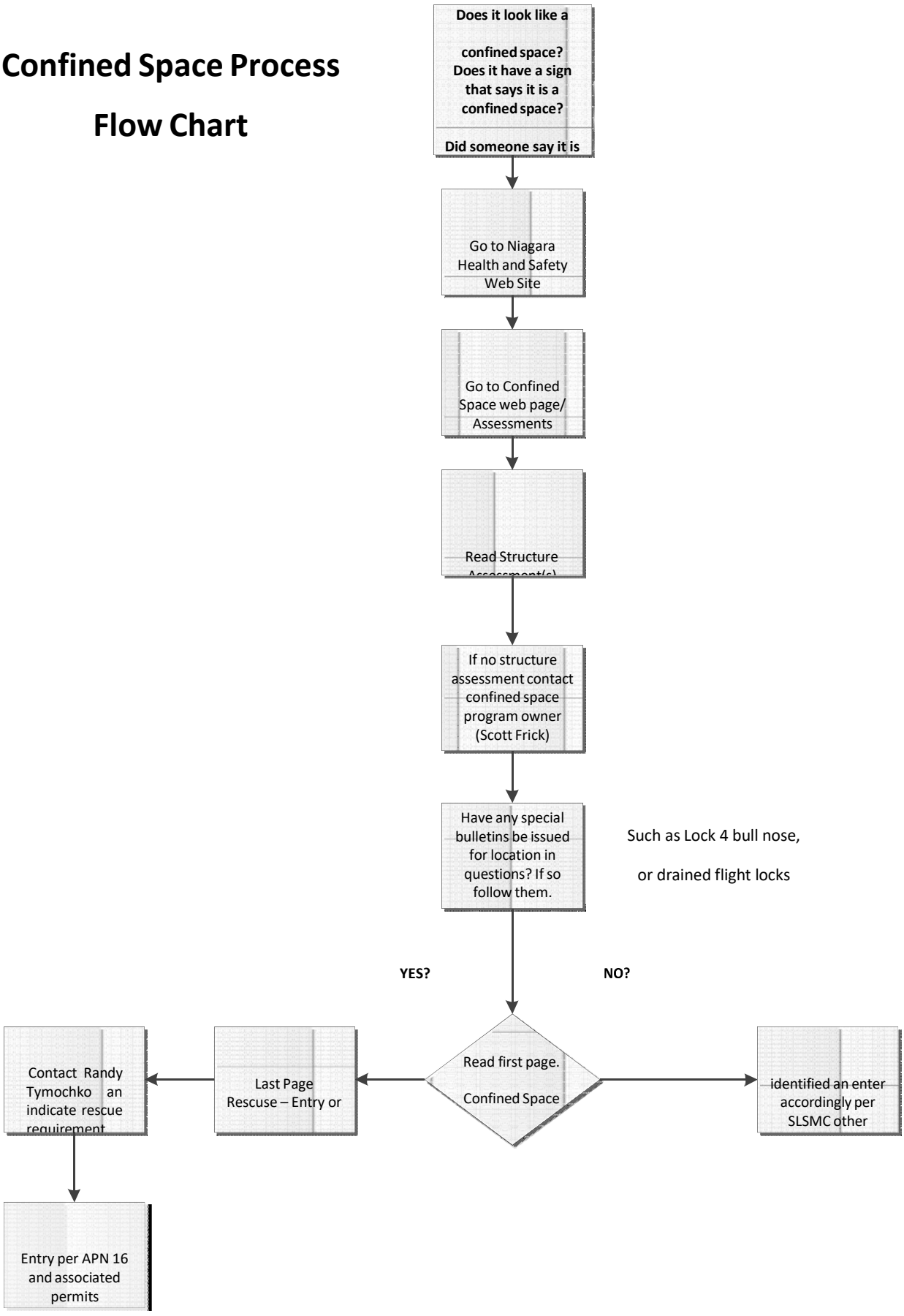
vi. Ensure all motor vehicles that can stop the Emergency Services from doing their job efficiently have been moved.

vii. Once the Emergency Services has been called inform the Coordinator / Supervisor of the situation.

viii. Once the situation is under control, the supervisor is to inform the Manager and the Occupational Health and Safety Officer of the situation.

Niagara Region St. Catharines, ON
Reviewed by: Scott Frick, Rory Dempsey, Debbie Riddle May 1, 2012
Revised: Jan 6 2014 SF

Confined Space Process Flow Chart



CONFINED SPACE ENTRY PERMIT

SECTION A: GENERAL INFORMATION **WORK ORDER NO.:**

1. LOCATION/SPACE DESCRIPTION : _____

2. WORK TO BE PERFORMED IN SPACE : _____

3. REVIEW REG. PROCEDURE ON CONFINED & RESTRICTED SPACES: _____

4. WORK COORDINATED BY : _____

5. DATE PERMIT ISSUED : 6. PERMIT EXPIRATION TIME :

SECTION B : AIR MONITORING EQUIPMENT USED

7. ANALYSES PERFORMED BY :	**8. MINIGAS NEOTRONICS NO.:**

SECTION C : AIR TESTING RECORD

9. CONTAMINANT	**10. UNSAFE RANGE**	**Air test reading**	**Date/Time**		**Initials of tester**	**Air test reading**	**Date/Time**		**Initials of tester**
a. % Oxygen	Less than 19.5% or more than 23%								
b. % LEL	More than 10%								
c. Carbon Monoxide	More than 35 ppm								
d. Hydrogen Sulphide	More than 10 ppm								

SECTION D : EQUIPMENTS NECESSARY TO PERFORM AUTHORIZED ENTRY

11. PERSONAL PROTECTIVE EQUIPMENT	**Required**		**Used**		**12. OTHER EQUIPMENT**	**Required**		**Used**	
	No	**Yes**	**No**	**Yes**		**No**	**Yes**	**No**	**Yes**
a. Protective clothing					a. Lighting				
b. Protective helmet					b. Tools with GFCI				
c. Protective gloves					c. Double isolation tools				
d. Safety shoes					d. Portable ventilation				
e. Hearing protection					e. Barrier/sign				
f. Respiratory protection					f. Fire extinguishers				
g. Safety glasses					g. Rescue equipment (Iroquois only)				
h. Fall protection (harness, Sala, etc.)					h. Communication radios				

SECTION E : OTHER ELEMENTS NECESSARY FOR AUTHORIZED ENTRY

13. ELEMENT	**Required**		**Performed**		**14. IF SPACE IS EVACUATED FOR ANY REASON DURING WORK ACTIVITY, EXPLAIN :**
	No	**Yes**	**No**	**Yes**	
a. Lock-out procedure - electrical :					
b. Lock-out procedure - mechanical :					
Other					**BY:**

SECTION F : TIME OF ENTRY AND EXIT OF EACH EMPLOYEE		
NAME	**TIME OF ENTRY**	**TIME OF EXIT**

15. SIGNATURE OF EMPLOYEES PERFORMING WORK:	
a.	b.
c..	d.
THIS PERMIT IS VOID WHEN HAZARD CONDITIONS WITHIN THE SPACE CHANGE	

EMERGENCY PROCEDURES
CONFINED OR RESTRICTED SPACES
IN NIAGARA REGION (WELLAND CANAL) ONLY

If the gas monitor alarms vacate the area immediately.

RESCUE AN INJURED WORKER – (Air quality not an issue)

Step: 1

- Watcher (Top man) to advise other worker at top to call emergency number
- Person that calls emergency number to direct emergency services to accident site by going to lock entrance and waiting.

Step: 2 **MEDICAL ASSESSMENT – Can Injured Worker Be Moved?**

IF NO

Top Man to enter confined space and commence first aid and continue until emergency services arrive and they take responsibility for medical treatment.

- Second Man to set up rescue equipment.
- Once emergency services has stabilized and secured victim for rescue the retrieval equipment will be attached to victim (Body Harness / Stokes Stretcher).
    - Fire Department may commence rescue at their discretion.

IF YES

- Set up rescue equipment
- Rescuer will enter confined space to connect retrieval equipment to injured victim's body harness
- Top man will start to extract victim.
- Rescuer will leave confined space to assist.

Step: 3 **Commence First Air / CPR and continue until emergency services arrive and they take the responsibility for medical treatment.**

EVACUATION DUE TO AIR QUALITY (Victim is unconscious & must be retrieved)

Step: 1 Watcher (Top man) to advise other worker at top to call emergency number.

- Person that calls emergency number to direct emergency services to accident site by going to lock entrance and waiting.

Step: 2 Top man & rescuer to set up rescue and air supply equipment.

Step: 3 Rescuer with respirator and air supply will enter confined space to connect retrieval equipment to unconscious victim's body harness.

Step: 4 Top man will start extraction of victim.

Step: 5 Rescuer will leave confined space to assist.

Step: 6 CPR to commence as soon as victim is extracted.

CPR to continue until emergency services arrive and they take responsibility for medical treatment.

Appendix
3B

CONFINED OR RESTRICTED SPACES
(Maisonneuve)

1. PURPOSE OF THIS PROCEDURE

This procedure describes the confined spaces management system. It identifies the steps to follow to ensure the safety of all persons having to enter a confined space, whether to perform inspection, maintenance or repair work or for any other reason. The following activities are thus included in this program:

1.1 Confined space procedure;
1.2 Qualification;
1.3 Lock-out procedure;
1.4 Permit (entry + hot work);
1.5 Rescue plan

Entering confined spaces is an activity that exposes the individuals involved to critical risks; it is therefore an activity of last recourse used when there is no other reasonable way to perform the work.

2. REFERENCES

2.1 Canadian Occupational Health and Safety Regulation (SOR /86-304)
2.2 CSA Standard Z1006-10, (2010) Management of Work in Confined Spaces, Canadian Standards Association

3. SCOPE

This procedure applies to all Seaway employees and contractors and subcontractors who have to enter a confined space.

4. RESPONSIBILITIES

4.1 Entrants

- Obtain a permit for entering an identified confined space.
- Comply with all preventive measures identified on the entry permit.
- Remain in constant communication with the confined space attendant.
- Evacuate the confined space if feel ill, note an abnormal situation, hears multigas monitor alarm sound or ordered to leave.
- Wear a safety harness inside category 2 and 3 confined spaces.
- Clean and put away the equipment used in the appropriate places and report any malfunctioning equipment to the permit issuer.

4.2 The enclosed space attendant

- Ensures compliance with the safety measures determined on the permits.
- Ensures that the multigas monitor is in good working order and that the pre-use function test (bump test) is performed.
- Takes initial gas readings in a manner that does not threaten his safety and that verifies the entire atmosphere of the confined space; records the results.
- Ensures that the detection is done for the entire volume of the confined space by detecting by layer, top, middle and bottom of the confined space to detect heavier and lighter than air gases.
- Remains posted outside the confined space, at the point of entry, throughout the entire duration of the work, unless relieved by another qualified worker.
- Maintains visual, auditory and other contact with the entrants at all times.
- Completes the register of entries/exits and contaminant readings.
- Denies unauthorized persons access to the confined space.
- Watches for any signs of danger inside as well as outside.
- Knows the local communication protocol for alerting the rescue team; ref.: rescue plan.
- Orders entrant to evacuate at the least sign of danger inside or outside.
- Under no circumstances, enters the confined space.
- Assists in the rescue operations provided that this work does not detract from his attendant duties.
- Carries the entry permit, hot work permit, assessment sheet, rescue sheet and lockout sheet.

4.3 The permit issuer

Confined space entry permit issuers shall be the following individuals, with confined space training:

o *Supervisor/manager or designated person*

- Assesses whether the work can be done without having to enter the confined space.
- Prints out and gives the following documents to the confined space attendant: entry permit, hot work permit, assessment sheet, rescue sheet, lockout sheet.
- Ensures that the preventive measures described on the entry permit, hot work permit, assessment sheet and rescue sheet have been implemented before signing the permit.
- Informs the Occupational Health & Safety officer of any changes from the conditions stated in the enclosed space data sheets, rescue sheet, lockout and work methods for updating to reflect the current practices.
- Checks whether the entrants have the required qualifications for performing the work.

- Reviews the permits with all of the participants involved at the worksite and ensures that they understand the risks, methods of communication, their roles and responsibilities (safety discussion).
- Retains all confined space entry permits for one year; and 5 years for permits where the multigas monitor alarm sounded or workers needed to be evacuated due to a detector reading that was outside of acceptable limits.

4.5 Multigas Monitor Supplier

- Performs calibration testing of the multigas monitors every 6 months or according to the manufacturer's recommendations, with documentation of the results.

4.6 Health and Safety Officer

- Ensures that the confined space entry program is developed and applied correctly according to the legal requirements.
- Ensures that the confined space entry procedure is distributed.
- Ensures that the necessary knowledge and qualifications are maintained by the persons concerned, including the rescue personnel.
- Updates or validates the procedure, confined space data sheets and rescue sheets every 3 months.
- Regularly audits the effectiveness of the confined space management program.

4.7 General Manager or Vice-President

- Approves the procedure.
- Approves the resources and equipment needed to apply the confined space entry procedure.

5. GUIDING PRINCIPLES

The confined space management process includes the steps described below:

5.1 Identification of Confined Spaces:

A validated list of all of the confined spaces at the Seaway has been prepared providing the identification number of the equipment, its name and location. A complete version can be accessed on the server at the following address:

http://cwlweb/HealthAndSafety/Espaces%20clos/default.htm

5.2 Risk Analysis

For each confined space, a risk analysis is performed and validated to identify the present and potential risks (atmospheric, physical, mechanical, chemical, electrical, hydraulic and pneumatic) and, depending on the nature of the work to be done, the individual protection equipment, prevention methods, and work and rescue equipment required.

This risk analysis has also made it possible to determine the anchorage needs (fixed or portable) as well as the specialized work and rescue equipment for the confined spaces. All of this information can be found on a data sheet of the confined space, unique to each confined space, as in the typical example in Appendix 2.

An electronic version of the data sheet and rescue sheet for each confined space can be accessed on the server at the following address:

http://cwlweb/HealthAndSafety/Espaces%20clos/default.htm

5.3 Planning Entry into a Confined Space

The manager and/or supervisor or designated person (C/E) are responsible for seeing to the execution of the work, the confined space attendant and participants shall meet **before** the work is performed and agree on how the work will be done (tasks, risks, controls, individual and group protection methods, etc.). They shall read, in particular, the confined space entry permit, technical data sheet, entry permit, hot work permit, assessment sheet, rescue sheet and lockout sheet.

The confined space entry permit must encourage the use of work methods and techniques that avoid entering confined spaces. If entry is inevitable, this procedure must be followed.

5.4 Preparing for Entry into a Confined Space

Before entering a confined space, a confined space entry permit must be issued by an issuer. This permit is required at all times, irrespective of the level of risk. The permit issuer must ensure that the confined space complies with the various permits and verify that all preventive measures are applied. He must fill out the permit and check that the activity to be performed does not generate any additional risks. In such a case, he must verify that all preventive measures associated with this activity are applied. He must ensure that all of the persons involved have understood the risks and that they will apply the preventive measures.

A confined space entry requires a minimum of 2 individuals (an entrant and a attendant), following issuance of the confined space entry permit.

The permit issuer must obtain the following documents which are available at and give them to the confined space attendant.

http://cwlweb/HealthAndSafety/Espaces%20clos/default.htm

5.4.1. A “Confined Space Entry Permit”;
5.4.2 The data sheet and rescue sheet for the confined space concerned;
5.4.3 The rescue sheet for the confined space concerned;
5.4.4 The lockout sheet required to be applied according to the lockout procedure.
5.4.4 The hot work permit
5.4.5 Clarify the method of communication between the attendant and the rescue team.

Confined spaces must be emptied and locked out (depending on the space) completely before they are entered.

The permit issuer shall check off the data sheet of the confined space concerned based on the work to be done in the enclosed space. If the sheet does not reflect the current practice, he shall correct the sheet and inform the health and safety officer.

The permit issuer shall ensure that the preventive measures specific to the task to be performed in the confined space are in place (for example: welding).

The confined space entry permit shall only be valid for the period determined on the permit and this period shall be for a maximum of 12 hours and/or for as long as the same team of workers is continuously working. It shall apply solely to the work stated and entered on the permit.

5.5 Detection of Contaminants and Ventilation

If the monitor’s alarm sounds, the confined space must be ventilated until the atmosphere in the space is cleaned up. Another air quality test must confirm that

the corrective actions were effective before proceeding with any entry. The confined space entry permit can then be issued.

No workers may enter a confined space if the following atmospheric conditions exist and cannot be controlled through natural or mechanical ventilation:

- Oxygen concentration of below 19.5% and above 23% (O_2);
- A concentration of flammable fumes or gases equal to or greater than 10% of the lower explosive limit (LEL). If the value is not 0%, determine the source of these gases or fumes (LEL);
- The carbon monoxide (CO) concentration must be below 35 ppm;
- The hydrogen sulfide (H_2S) must be below 1 ppm.

5.6 During the Entry into the Confined Space

The duly completed permit, the data sheet of the confined space and the rescue sheet must be posted at the main entrance to the confined space used throughout the complete duration of the work.

If, during the work, the planned work needs to be modified, for example do some welding not planned at the outset, the permit issuer must be advised and he shall amend the permit and make the necessary changes to the preventive measures.

In all cases of confined space entry, an attendant must be permanently posted outside of the confined space and must remain in constant communication (visual, auditory or other) with the workers inside the space. If he must leave, he shall have the workers exit the confined space or have himself replaced by another qualified attendant.

The attendant may, from the outside, pass the material and equipment needed for the job being done inside the confined space, provided that it does not detract from his primary task of watching the entrants.

If, during the work, a multi-gas monitor alarm sounds, the attendant must ask the workers to leave the confined space right away and advise the permit issuer immediately.

5.7 Rescue

Rescue without entry:

This form of rescue is generally done by the attendant, but may also be used by the rescuers. This rescue consists of extracting the entrant in difficulty from the outside, without having to send another person into the confined space. The equipment listed on the rescue sheet must be used for this.

Rescue with entry:

When rescue without entry is not possible, the rescue sheet available (typical example in Appendix 3) at the work site shall be used to quickly rescue any entrants. This type of rescue shall be performed by subcontracted qualified rescuers present at the site.

5.8 After Working in Confined Space

When all of the work has been completed, the attendant shall so advise the permit issuer who will close the entry permit (after verifying that there is nobody left inside the confined space).

The completed permits must be retained at the supervisor's department for a minimum period of one year and for 5 years for those where the multigas monitor alarm was triggered due to a reading that was outside of the limits for one of the 4 gases.

5.9 Qualifications of Participants (Know and Understand)

- Definition of confined space;
- The risks related to the confined space and the work performed;
- Roles and responsibilities;
- Confined space entry procedure and permit;
- Proper use of safety equipment;
- The signs and symptoms of oxygen deficiency;
- Rescue plan for evacuation of confined space;
- Practical application of wearing of harness, use of tripod and multigas monitor.

6. COMMUNICATION

This procedure shall be formally communicated with supporting documentation to supervisors, managers, directors and health and safety officers and contractors to ensure they fully understand the confined spaces management process, their roles and responsibilities.

7. REVIEW AND APPROVAL

Approved by:

Alain Godard, General Manager, Operations

GLOSSARY

Confined space

Any totally or partially enclosed space, including a crosshead pump well, pit, sewer, tank on the Hercules, access well for pumping the lock, truck tank, which has all of following characteristics at the same time:

- It is not designed or intended to be occupied by people, except for performing specific work such as inspections, cleaning, maintenance, repairs or construction;

- It cannot be entered or exited except by a restricted manner;

- It may present risks to the health, safety or physical integrity of anyone who enters it, due to any of the following factors:

    - The location, design or construction of the space;
    - Its atmosphere or insufficient natural or mechanical ventilation;
    - The material or substances it contains, the mechanical, physical or other risks;

Restricted space

A restricted space is, in particular, a space the exit from which is restricted, limited or impeded by its geographic location.

Categories of confined spaces

Places classified according to the risk management.

Category 1: Restricted space that is not considered a confined space but that requires the application of an access protocol regardless of the number of entrants, as well as an emergency plan.

Category 2: Place considered a confined space with emergency plan and rescue without entrant executed by the worker.

Category 3: Place considered a confined space with emergency plan and rescue with entrant (Rescue Team) executed by specialists.

Permit issuer

Person who has received recognized confined space entry training and who, due to his knowledge, training or experience, is able to identify, assess and monitor the dangers in a confined space. He supervises confined space entries and issues the confined space entry permit.

Attendant

Worker assigned to continuously monitor the persons entering a confined space and who has taken recognized confined space entry training to keep the entrants safe.

Entrant

Worker authorized to enter a confined space to perform a task and who has taken recognized confined space entry training.

Rescuer

Person who has received recognized confined space entry training and specific rescue training in order to rescue entrants in difficulty in a confined space.

Confined space data sheet

Sheet consolidating all of the information on this space as well as an assessment of the risks, the preventive measures and the type of rescue associated with this space.

Rescue sheet

Sheet describing the equipment needed for rescue as well as the steps for rescue in a confined space.

Function (or bump) test

Brief exposure of the multigas monitor to a concentration of gases exceeding the lowest alarm set point for each sensor in order to check the operation of the sensors and alarms and not the precision of the instrument. This test must be done before each daily use and after an incident during which the concentration of combustible gases triggered an alarm for exceeding the range.

Calibration

This means a zero adjustment and adjusting the response of the detector to certify a precise value with respect to a known concentration of test gases. This test must be done every 6 months or according to the manufacturer's recommendations by a qualified calibration service.

Appendix 4A

NIAGARA REGION LOCKOUT AND TAGGING PROCEDURES

SLSMC NIAGARA REGION ***Lockout Procedure***	***N°.:*** APN#7 ***Revision:*** 1
In Effect On: 2016-04-01	**Replaces:** APN#7 (Oct. 10, 2012)
Communication Cycle: Annual **To:** Operations, Engineering, Maintenance & Technology Employees	**Date of Next Revision:** 2017-04-01 **By:** Iqbal Biln

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1. POLICY

The St. Lawrence Seaway Management Corporation, Niagara Region, is committed to taking all necessary measures to ensure that during any work activity no energy source or hazardous substance will come into contact with the worker. This lockout program is prepared in accordance with the SLSMC Corporate Lockout and Tagout Directives, dated January 26, 2011.

2. PURPOSE

The purpose of this lockout program is to establish a procedure-based lockout process to prevent inadvertent release or transmission of machine, equipment, or process energy. This program applies to any person performing work associated with potentially hazardous machines, equipment or processes of The St. Lawrence Seaway Management Corporation, Niagara Region.

3. OBJECTIVES

This program is intended to protect the worker, while performing activity on equipment, against any power-up, accidental machine start-up or accidental release of energy and/or hazardous substances. It essentially depends on the verification of the isolation of the energy sources, which includes start-up testing, where possible. The objectives of this program are as follows:

i. To establish methods for achieving a "zero energy" state;
ii. To ensure that specific lockout/tagout procedures are developed for all pieces of equipment and machinery in which the unexpected energization, start-up or release of stored energy could cause injury to employees, contractors and/or public;
iii. To ensure that "Affected Employees" recognize the various types of equipment used by "Authorized Employees", and understand the use and purpose of lockout/tagout equipment;
iv. To ensure that "Authorized Employees" are properly trained and implement the lockout/tagout system according to developed procedures;
v. To comply with applicable regulatory standards and regulations (CSA Z-460-13).

4. SCOPE

4.1 Application

This program applies to every machine, system or equipment unit where power-up, accidental start-up, or release of energy and/or hazardous substances poses a risk of injury to workers.

This activity applies to any work performed in the danger area. This includes, without limitation:

- Maintenance – repair – servicing;
- Construction – installation – testing;
- Setup – takedown – dismantling;
- Unjamming – troubleshooting – cleaning;
- Setting – adjustment – diagnosis;
- Inspection.

This activity applies to all energy sources, whether they are stored, residual or potential. This includes, without limitation:

- Electrical;
- Pneumatic;
- Kinetic;
- Chemical;
- Hydraulic;
- Thermal;
- Residual – potential – gravitational, e.g. equipment that could fall.

4.2 Limits

When it is necessary to perform one of the tasks mentioned in the preceding section while maintaining the machinery in operation, the work may be performed in accordance with Article 13.16 (2) of the *Canada Occupational Health and Safety Regulations*. These regulations are described in the Appendix A - Section A4 of this document.

4.3 Definitions

- **Affected Employee:** A person whose job requires him or her to operate or use a machine, a piece of equipment, or a process on which servicing or maintenance is being performed under lockout.
- **Authorized Employee:** A person who locks out machines, equipment, or processes to service or perform maintenance on the machines, equipment, or processes.
- **Danger Area:** Any area located inside or around a machine that poses a risk for the health, safety or physical integrity of workers.
- **Hasp (Multi-Fastener Safety Lockout Hasp, Lockout Clip, Multiplexer):** Clip with several holes used to install multiple padlocks. The last available hole of the hasp is used to add a second hasp.
- **Lockout Box:** Fixed or portable box in which all serial-numbered keys used for multiple lockouts are stored.
- **Lockout Device:** Mechanical device that physically prevents the transmission or release of energy, such as a disconnect switch, a valve, a support, that physically prevents the transmission or release of an energy source.
- **Lockout Mechanism (Lockout Device in CSA Z-460-13):** Mechanism built into or added to a lockout device that allows it to be locked with a padlock in the desired position, such as a chain, a handwheel cover, a valve cover, a plug cover, and other means.
- **Lockout Placard or Procedure:** Single placard linked to a specific equipment unit indicating the places to lock out to control all sources of energy on the equipment in order to carry out a task or activity.
- **Lockout Station:** Cabinet containing the equipment necessary for lockout.
- **Lockout Tag:** Tag that goes with a personal or long-term padlock. It is used to communicate the equipment, the placard form number, the date, the proof and the reason for the lockout. It must indicate the name and contact number of the person responsible for the lockout who placed the padlock, and whether the lockout is short or long-term.
- **Multi-Point Lockout:** Lockout involving more than one (1) isolation point.
- **Personal Tag:** Tag used to identify and personalize a padlock for one (1) person.

- **Primary Authorized Individual:** Person who is assigned the responsibility for the lockout of each energy isolating device under Group Lockout.
- **Safety Padlock:** One-key padlock used strictly for lockout (see Appendix A - Section A2).
- **Single Point Lockout:** Lockout involving a single isolation point.
- **Verification of Isolation of Sources of Energy:** Verification performed each time energy is isolated and before beginning work on locked-out equipment with the aim of proving that the isolation and the power cut-off have been executed adequately. This verification calls on techniques that provide the highest level of certainty while avoiding the creation of new hazardous phenomena, in particular:
  - When performing a visual verification of the opening of the disconnect knives;
  - When performing a start-up test or:
    - Testing the circuits;
    - Manually testing the locked-out controls, actuators or mechanisms of the machines.
  - When performing a load verification cycle;
  - When conducting a visual inspection of the location;
  - When monitoring the movement or flow; or observing the drains, gauges, indicators, etc.;
  - When performing a voltage reading by qualified personnel.
- **Zero Energy:** Is the state where the machine is incapable of spontaneous or unexpected action. There is no residual energy left in the machine.

5. ROLES AND RESPONSIBILITIES

5.1 General Managers

- Ensure that the procedure is signed and operational.
- Ensure that control audits are conducted.

5.2 Managers (All Sectors Combined)

- Ensure the appropriate application of the lockout procedure and that personnel have received the necessary training.
- Ensure annual refresher to all teams.

5.3 Mechanical Engineering Manager

- Program Owner.
- Approve the lockout placards.
- Conduct annual reviews and updates.

5.4 Project Leader

- Responsible for provision for design and installation of adequate lockout controls for new or modified equipment.
- Obtain product information and or equipment layout, schematics, etc.
- Identify all energy isolation devices of new or refurbished equipment.
- Identify appropriate lockout mechanisms for each isolation device.
- Prepare draft lockout placard/procedure and submit to the Maintenance Engineer.

Maintenance Engineers

- Responsible for review, finalization, approval and publishing of the written specific equipment lockout/tagout placards or procedures.
- Maintain the integrity of the information on the lockout placards.
- Correct all discrepancies detected or any change that impacts the lockout.

5.5 Supervisors

- Ensure that everyone rigorously respects and complies with lockout procedures.
- Take charge, if necessary, in case of non-compliance during performance of the activity.
- Issue work permits.
- Verify and ensure that all the materials required to apply the procedure are in good condition and available in sufficient quantity.
- Responsible to manage the long-term padlocks within their department.

5.6 Team Leaders

- Control and monitor the personal padlocks of employees under their lead.
- Ensure the daily integration of the lockout procedure into the activities of their respective work groups.

5.7 Authorized Employee (Person Responsible for the Lockout)

Person trained for this procedure and who takes charge of the application of the lockout placard and:

- Requests and reviews work permits, where applicable;
- Takes control of the workplace;
- Coordinates with Operations prior to performing lockout;
- Ensures that no one is in the work area before beginning the lockout;
- Participates in the lockout procedure, ensuring the lockout placard is properly applied according to the established procedures;
- Participates in lockout verification according to the appropriate methods;
- Personally signs the lockout tag and places it in the padlock shackle or in the lockout box;
- Ensures that all the guards and safety devices of the equipment are reinstalled and operational at the end of the work;
- Performs the unlocking procedure according to the information on the lockout placard;
- Verifies that the equipment is ready and fit to operate, in collaboration with Operations;
- Informs the Department Head and/or Supervisor of the modifications, additions and any other information useful to update the lockout placard or any abnormal situations when applying lockout;
- Returns all the lockout equipment to its proper location.

5.8 Affected Employee (Operator)

Any person who is present in the danger area of a machine and exposed to hazards while performing work, and:

- Is trained in the lockout procedure;
- Ensures that the lockout is performed in compliance with the lockout placard before beginning the work;
- Keeps his/her personal padlock and its identification in good condition. Affixes his/her personal padlock before working;
- Removes his/her personal padlock when the work is completed. Informs the Supervisor when the work is completed;
- Informs the Supervisor of any abnormal situations when applying lockout.

5.9 External Contractor

- Trained and responsible for applying the lockout procedure of The St. Lawrence Seaway Management Corporation, Niagara Region.
- Uses a padlock identifying the worker and his/her employer; otherwise uses a borrowed padlock and tag.
- Uses a lockout box for all his employees in the Contractor's trailer, if applicable. The Contractor responsible for his team affixes his padlock to the lockout box and puts the key for this padlock in his/her lockout box in his/her trailer.
- Are responsible for lockouts even if no employees of The St. Lawrence Seaway Management Corporation, Niagara Region, participate in the work.

5.10 Contract Leader and Worksite Inspector

Persons responsible for a scheduled shutdown or major work, and:

- Work requiring the presence of one (1) or more contractors:

  Ensure that contractors have received the required documented information on lockout procedures and that they comply with the Contractor's responsibilities.

5.11 Safety Department Responsibilities

- Issue personal locks.
- Conduct field audits.

6. CONDUCTING THE ACTIVITY

6.1 General Description

The activity consists in controlling the energy sources, hazardous substances and residual or stored energy by applying the lockout process for each task to be performed in the danger area of a machine, equipment unit or potentially hazardous process. Depending on the task, this process generally includes energy release activities and, if necessary, blocking activities.

A lockout placard or procedure must be available for the authorized person at the time the lockout process is performed.

The lockout placard or procedure must be printed and available at all times at the lockout location.

The discharge of any form of hazardous energy and/or substance must include the release of hazardous energy resulting from any movement, supply, start-up or release of accumulated energy, whether accidental or deliberate.

6.2 Group Lockout

When more than one (1) authorized employee is being protected by multiple energy isolating devices, each energy isolating device may be secured by a single lockout in accordance with the following steps:

(a) Prior to a group lockout, a start-up meeting with all employees involved will take place. At this time, the primary authorized employee will be identified and communication plan will be developed;

(b) A primary authorized employee is assigned responsibility for the lockout of each energy isolating device;

(c) The key(s) for the lockout devices are controlled by a lockable device (e.g., lock box or key ring) that is locked by the primary authorized employee. If lockout is being done using the crew/departmental lock, the key of the keyed alike padlock will be controlled by the primary authorized employee;

(d) Before workers start work, they familiarize themselves with the energy isolating devices, assess their adequacy for the work to be performed, and then:

1. Apply their personal lock (and tag if used), or

2. Use the crew/departmental padlock. Apply the keyed alike crew/departmental padlock to each energy isolating device, the primary authorized employee will put the key inside the lock box and each worker shall apply their personal padlock to the portable lock box. Each authorized employee should request, at the time of lockout, that isolation be verified in his or her presence.

(e) Once the lockout is applied, verification must be completed according to the specific equipment lockout procedures to determine the effectiveness of the energy isolation;

(f) Work commences only after the authorized employees have applied their personal lock (and tag if used), to the lockable device;

(g) As the authorized employees complete their work, they remove all non-essential items from the work site. When they are sure that they have no reason to return, they can then consider their need for isolation to have ended, following which they remove their personal lock (and tag if used), from the lockable device, and

(h) When all workers have removed their personal locks and tags from the lockable device, the primary authorized employee who is assigned the responsibility for the lockout walks down or around the isolated machine, equipment, or process to check that all authorized employees are clear before removing the locks from the isolating devices.

Group lockout should be considered when more than two (2) or three (3) authorized employees are involved or more than four (4) or five (5) devices require isolation.

6.3 Steps to Follow

The following steps must be followed in the general lockout procedure:

- **Step 1- Preparation for Shutdown**

Employees authorized to lockout machines, equipment, or processes must identify the type and magnitude of the energy to be controlled, all hazards (including stored energy), and the method or means of controlling the energy. They must also notify all affected persons in the area that the equipment is to be shut down and locked out;

Individuals, crews, or designated crew personnel, must establish and agree on lockout devices that have a cross impact on each other. A group lockout, such as multiple lockout devices, multi-hasps or group lock box shall be considered when more than two (2) authorized individuals are involved that have a cross impact on each other or when more than one (1) affected individual is being protected by multiple energy isolating devices. If there are no common or cross impact lockout devices, then each crew or individual may use their associated personal padlocks or group lock box as necessary.

- **Step 2 – Machine, Equipment, or Process Shutdown**

The machine, equipment, or process must be shut down by following established shutdown procedures.

- **Step 3 - Machine, Equipment, or Process Isolation**

The machine, equipment, or process must be isolated by following established isolation procedures that specify the use of disconnect switches, line valves, blocks, blanks, removal of spools, capping of lines, etc., as required (energy source label were installed in the field specific to each equipment, such as E-1, E-2, H-1, H-2, etc.).

- **Step 4 - Application of Lockout Devices**

Locks must be applied to each of the isolation devices used to establish the isolation. Each employee working on the machine, equipment, or process must be responsible for attaching his/her personal lock without exception. To facilitate this requirement, a multi-hasp must be applied whenever necessary for the application of more than one (1) lock.

- **Step 5 - Stored Energy (De-Energization)**

Once the necessary lockout devices have been applied, all potentially hazardous stored or residual energy must be relieved, blocked, bled, restrained, or rendered safe by the authorized individuals involved with the work. Each worker involved must check that this has been done.

- **Step 6 –Verification of Isolation**

Before starting work (i.e., after isolation and de-energization), an authorized employee must perform either a test of all of the start buttons and other activating controls, as well as or a potential check of all electrical supplies to ensure that the equipment has been de-energized. The authorized person must ensure that all controls are returned to the "off" or neutral position after trying to start.

- **Step 7 – Perform Tasks**

Perform tasks, in according to the Standard Work Practices, where applicable.

- **Step 8 - Release from Lockout Control**

Before restoring energy to the machine, equipment, or process, the authorized employee must check that all temporary de-energization measures or devices have been terminated or removed, that the machine, equipment, or process is operationally intact, that all necessary guards have been reinstalled, and that all tools used during servicing or maintenance have been removed. Once this is done, an authorized employee must ensure that all other employees, affected employees, and authorized employees are clear and have been told that the energy to the machine, equipment, or process will be restored. Locks used to isolate the machine, equipment, or process may then be removed by the authorized employees involved in the servicing or maintenance and the energy restored.

6.4 Special Considerations

The following special considerations apply:

(a) No changes, adjustments or repairs that require shutting down the machine, equipment, or process are to be made without permission of the affected employee (Operator) or Operating Supervisor in charge. The machine, equipment, or process must be turned over to authorized employees (repair crews) before the work begins;

(b) If more than one (1) authorized employee works on the same machine, equipment, or process, each person must attach his or her lock;

(c) When an authorized employee is reassigned from an incomplete job and the machine, equipment, or process needs to remain locked out, the authorized employee involved must notify his/her Supervisor before removing his/her lock. The Supervisor must then lockout the machine, equipment, or process or arrange for such lockout before the first employee removes his/her lock;

(d) No attempt is to be made by anyone to operate a control device to which a lock is attached or to defeat the purpose of the lockout devices;

(e) When a job is to be extended from one shift to another, the relieving authorized employee or the Supervisor must attach his/her lock. If the Supervisor, rather than the employee coming on shift places his/her lock on the device, the employee coming on shift must place his/her lock on the device before starting work;

(f) If an employee leaves lock(s) on a machine, piece of equipment, or process and cannot be found, the Supervisor may have the lock(s) removed for an absent worker only after following the Padlock Cutting Procedure (see Flowchart and Padlock Cutting Form);

(g) When requested by affected employee (operating personnel), the authorized employee shall perform electrical lockout. The affected employee must go with the authorized employee to witness the lockout. Once the lockout has been accomplished, the authorized employee and the affected employee must attach their personal lock to the energy-isolating device;

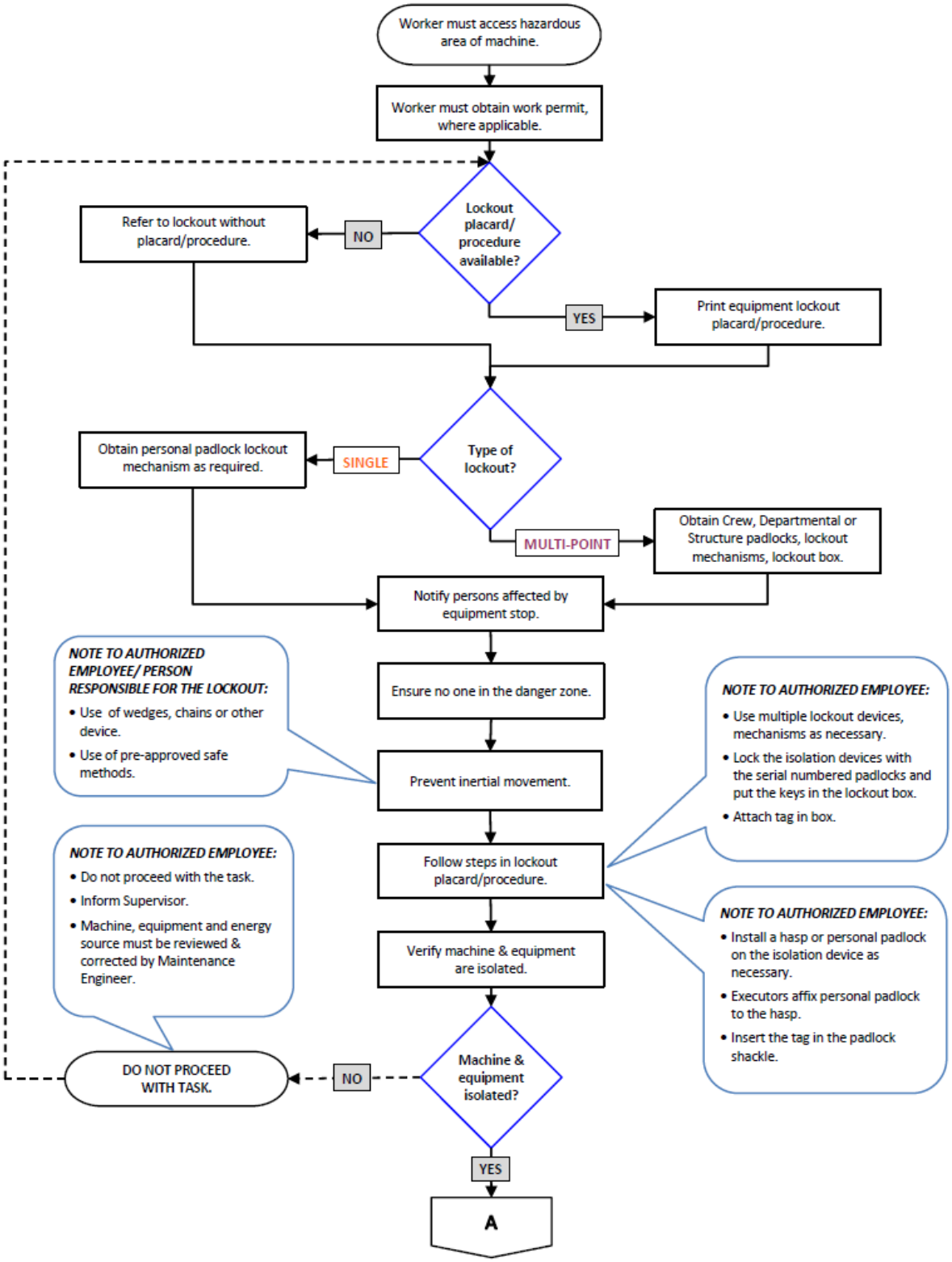
(h) When personnel are locking out power disconnect switch (PDS), a test (operation of start switches or push buttons), or approved form of load verification must be performed to ensure that the correct isolating device has been used;

(i) In no case is anyone to be assigned to remove another employee's lockout device except the Supervisor specified in Item (f);

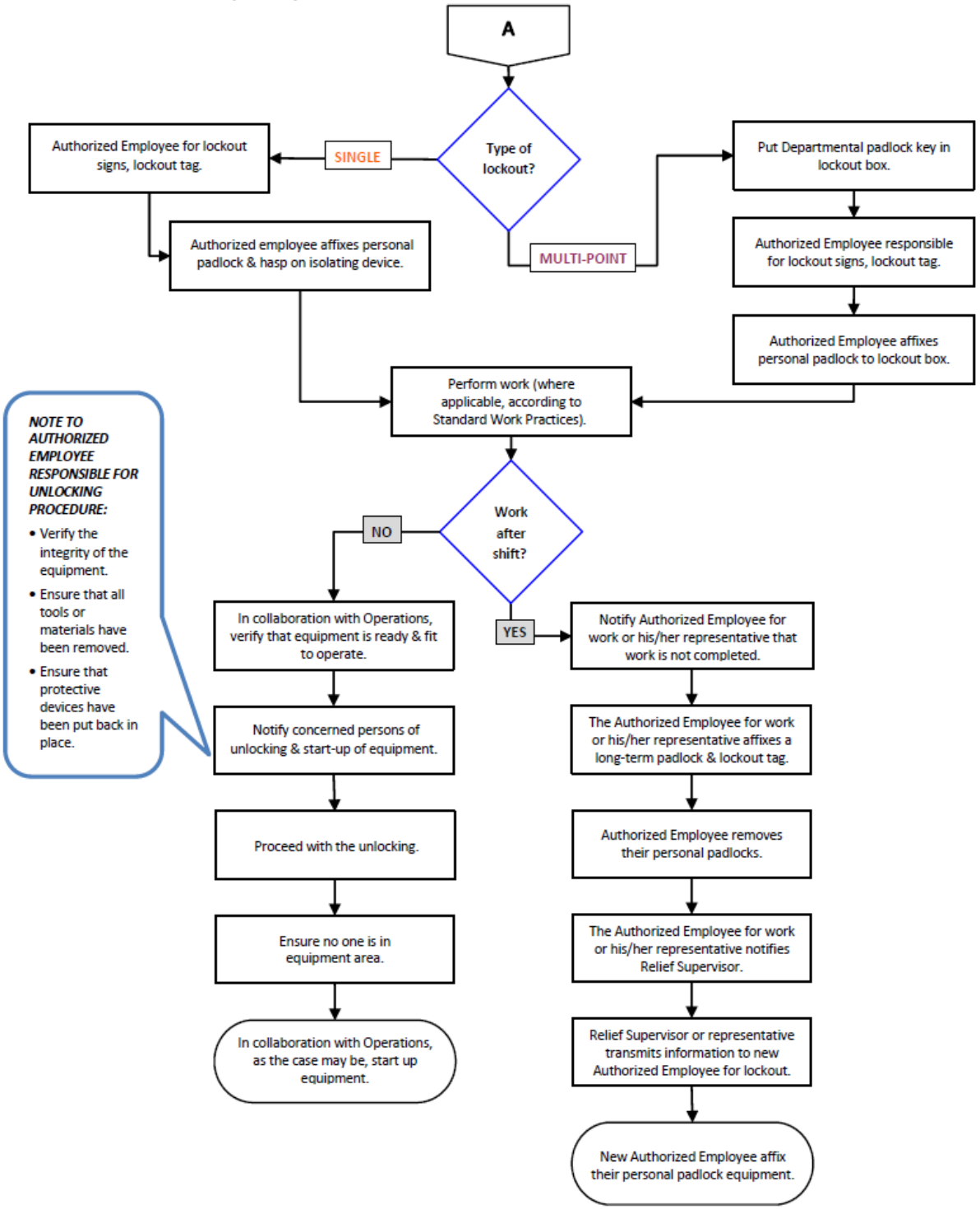
(j) Locks for use under the Lockout Process must not be used for any purpose other than as specified in this procedure;

(k) Contractors must be provided with the lockout procedures and are required to follow the lockout process.

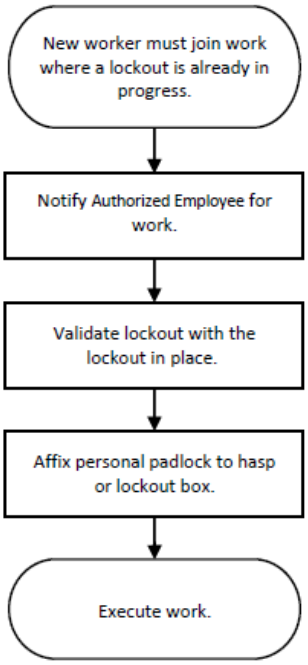
6.5 Lockout Procedure



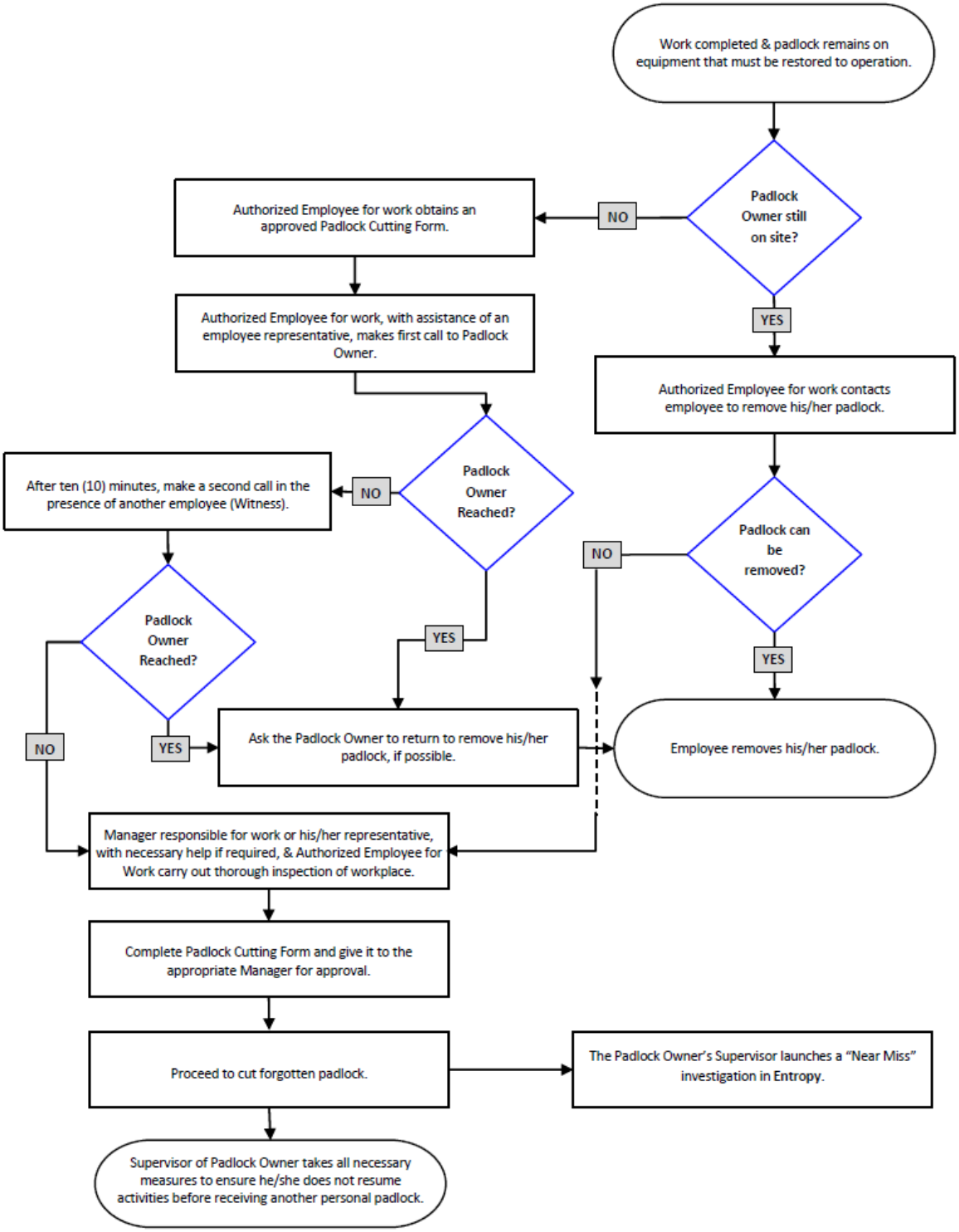
6.5 Lockout Procedure (con't.)



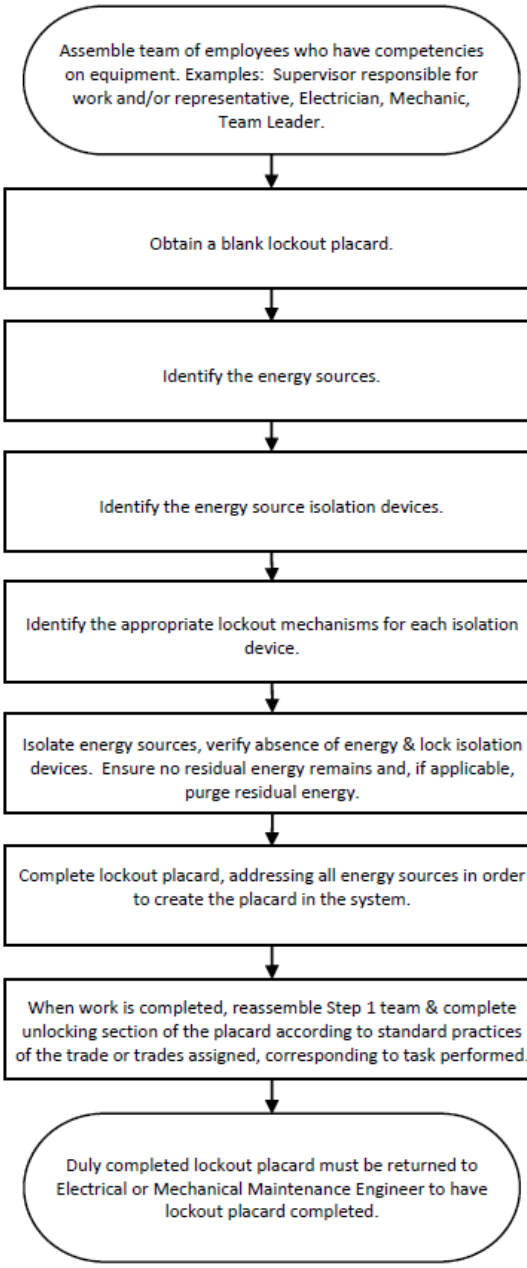
6.6 Procedure for Joining Work in Progress



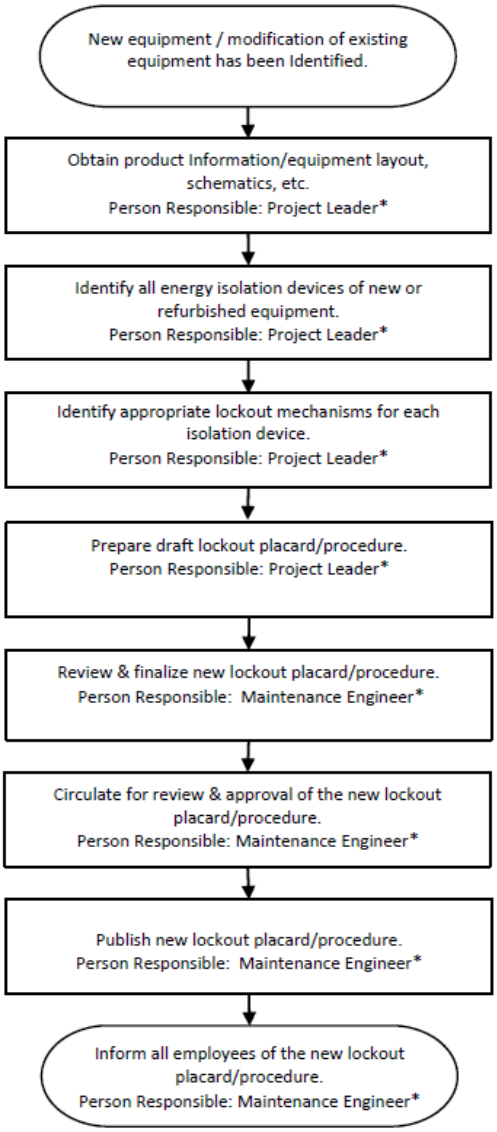
6.7 Padlock Cutting Procedure



6.8 Lockout Without Placard Procedure



6.9 Introduction of New Equipment/Modification of Existing Equipment



* **Project Leader** = Project Engineer, Maintenance Engineer, Technical Officer, Technical Co-Ordinator.

7. SPECIAL PROVISIONS

7.1 Safety Padlock Management

The safety padlocks may be used only for the application of this procedure and may not be altered or modified. The keys may not be duplicated. All the lockout equipment, including personal padlocks and related keys, remains the property of The St. Lawrence Seaway Management Corporation, Niagara Region.

In case of a lost or broken key, refer to the padlock cutting procedure. The respective Supervisor must be informed in order to obtain a replacement in case a padlock is cut.

A personal padlock is provided to each employee who has received training on the lockout procedure. The personal padlock and its key must be kept by the employee at all times. It is forbidden to lend one's personal padlock to another person. Moreover, a personal padlock must never be affixed and removed by a person other than its owner.

7.2 Padlock Cutting

The padlock cutting procedure applies when a key is lost or a worker has forgotten to remove a padlock. Only managers or their representatives have the authority to initiate the padlock cutting procedure. The holder of the forgotten padlock must return to the workplace, to remove his/her padlock.

In the event that the person who applied the padlock (SLSMC employee or Contractor employee) cannot be contacted, the removal of the padlock is not permitted unless every effort has been made to locate the person in question. In the event that the worker cannot be located, approval at the manager level must be established prior to removal and a Padlock Cutting Form must be completed. ***NOTE:*** *If a padlock is removed in this manner, a "Near Miss Investigation" shall be completed in* ***Entropy***.

7.3 Breach of Procedure Investigation

When a situation prevents the application of the procedure in its entirety, the Manager, or his/her representative, of the respective department in question must initiate a breach of procedure investigation to identify the causes and take the necessary corrective actions so that such a situation does not recur. To do so, he/she would document in Entropy as needed.

7.4 Introduction of New Equipment / Modification of Existing Equipment

When new equipment is introduced or existing equipment is modified, it must have the appropriate energy isolation devices. The Project Leader, who is responsible for the introduction or modification of equipment, will generate the lockout placards and forward to the Electrical or Mechanical Maintenance Engineer(s) for review, approval and publishing. See introduction of New Equipment/Modification of Existing Equipment Flow Chart.

7.5 Master Key

Neither The St. Lawrence Seaway Management Corporation, Niagara Region, nor any of its executives or employees, has a master key to serial numbered padlocks, personal padlocks and borrowed padlocks.

7.6 Disciplinary Measures

The application of the lockout procedure is mandatory, and non-compliance with this procedure is considered to be a serious offence, exposing the erred employees to disciplinary action.

8. DOCUMENTS

8.1 Lockout Placard

(a) Description

- Placard related to an equipment unit, indicating the places to padlock to control all the energy sources on the equipment for maintenance purposes.

(b) Retention

- Maintenance lockout placards are posted in the Intranet Web page, Health and Safety, under "Lockout Procedure".
- Maintenance lockout placards must be revised and updated whenever the specific machine, equipment or processes-energy source is altered resulting in changes to the way they operate.

8.2 Padlock Cutting Form (Refer to Appendix B)

(a) Description

- Form to be completed by the person responsible for the work and the employee representative when a padlock must be cut.

(b) Retention

- The original of the form must be retained by the employee's Manager for two (2) years and a copy must be provided to the worker in person.

9. TRAINING REQUIRED

All workers of The St. Lawrence Seaway Management Corporation, Niagara Region, who will have to work on locked-out equipment, as well as their supervisors, must attend a training session on the operation of the lockout procedure (the list of participants must be documented at each session by the person in charge of training). Every employee of an external Contractor must be trained in and comply with the lockout procedure of The St. Lawrence Seaway Management Corporation, Niagara Region, which is included in the document *SLSMC Corporate Safety Requirements for Contractors*.

10. CONTROL

The activity must be controlled according to the following parameters:

Control	Responsibility	Frequency
Ensuring compliance with lockout procedure and placards Monitoring of the employees' personal padlocks	Supervisors	As needed
Maintenance of lockout placards	Maintenance Engineers	As needed
Control of the workers' training	Discipline Managers, Supervisors	Annual
Control audit	General Manager	Two (2) years

11. REVIEW

The activity, the procedure and its supporting documents must be reviewed and updated after the first year of implementation, and thereafter, every two (2) years. At each review, employees must be informed of any changes and trained, if required.

APPENDIX A – INFORMATION LOCATIONS

A1. Location of Documents

Document	Location
Lockout Procedures	**Intranet:** *http://Niaweb2/LockOut*
Padlock Cutting Form	**Intranet**: *http://Niaweb2/Documents/LockOut/BlankProcedures.dotx*
Blank Lockout Procedure	**Intranet:** *http:// Niaweb2/Documents/LockOut/PadlockCutting.pdf*
Work Permit Form	Pads available in Warehouse (Stores)

A2. Description of Safety Padlocks

Padlocks are to be used only for the purpose specified. They are not to be used in any way for any other purpose.

- **Personal Padlocks:**
  i. Unique padlock assigned to every individual whose job requires locking out energy isolating devices.
  ii. Company issued, normally one (1) per person. Supplied with employee's photo and name attached.
  iii. Used to perform lockout of one (1) or two (2) energy isolating device(s). Used to lock the departmental/crew lock box or structure lock box.
  iv. There are no master keys for personal padlocks.

- **Departmental or Crew Padlocks:**
  i. Shall be used in situations where it is not practical for every individual making up the crew, to lock and tag the device (shall be used when more than one (1) employee is being protected by multiple energy isolating devices, keyed alike, used at the department's discretion). An inventory of the padlocks shall be documented and maintained.
  ii. May be used instead of personal padlocks.
  Used whether by choice or when it is not practical for every individual making up a crew to lock and tag every energy isolating device with the personal padlock.

When it is not practical for every individual making up a crew to lock and tag, a work permit must be used.

iii. Master key(s) shall be issued to the Supervisor(s).
iv. Padlocks and keys are controlled by one (1) primary authorized individual within a crew. Only one (1) key will be issued for each job requiring crew padlocks.

- **Structure Lock Box Padlocks:**
  i. iUnique to each of the eight (8) lock structure lock boxes, and those in the remotely operated bridge machinery rooms, keyed alike, and colour coded. An inventory of the padlocks shall be documented and maintained.
  ii. Used in the same manner as crew padlocks, but must use the structure lock box when employed.
  iii. Located in panels mounted on the exterior of the centre linesperson's buildings, and in the machinery rooms of the remotely operated bridges.
  Only one (1) key will be provided for the structure padlocks.

- **Long-Term or Carry Over Padlocks:**
  i. Unique to each department, keyed alike, issued at the discretion of department. Used when a person working on a machine or equipment stops work before the task is completed, typically at the end of shift.
  ii. Used when it is possible that a different individual, other than the original person, who installed the carry over padlock(s), will be required to remove the padlock(s) and continue the work at a later date.
  iii. Stored in the same cabinets as the structure padlock boxes, Locks 1 through 8, the machinery rooms on remotely operated bridges, and the respective work shops.
  v. Identification boards are used to identify the person(s) installing the carry over padlocks. Keys will be stored and controlled by the Department Supervisor.

A3. Types of Padlock Lock Boxes

- **Crew Padlock Boxes:**
  i. Portable, issued to crews that use crew padlocks. Used
  ii. to secure the crew padlock key during lockout.
  iii. Locked with the personal padlock of a designated member of the crew, when other members of the crew are not within close proximity to each other.
  iv. Locked with the personal padlocks of all crew members when within close proximity to
  v. each other.
  Used by individuals and/or crews performing multiple lockouts.
  Crew members shall only remove their personal lock from the crew lock box in the event that the work is completed, or the work continues by others with personal padlocks.

- **Master Keys for Crew Locks**

  Master keys for crew locks within a department or team shall be issued to the Supervisor(s) in structure padlock boxes:

  i. Mounted in cabinets on the exterior of the centre linesperson's buildings (centre shacks), Locks 1 through 8 inclusive (cabinets require a Maintenance 102 key to access).

  ii. iii. Mounted in the machinery rooms of the remotely operated bridges. To be used in the same way as crew padlock boxes.

A4. Applicable Regulations

As per Canadian Occupational Health and Safety Regulations 13.16 (1), Subject to Subsection (2), where it is necessary to remove a machine guard from a machine in order to perform repair or maintenance work on the machine, no person shall perform the repair or maintenance work unless the machine has been locked-out in accordance with a written lockout procedure provided by the employer.

13.16 (2), Where it is not reasonably practicable to lockout a machine referred to in Subsection (1) in order to perform repair or maintenance work on the machine, the work may be performed if:

(a) The person performing the work follows written instructions provided by the employer that will ensure that any hazard to that person is not significantly greater than it would be if the machine had been locked-out; and

(b) The person performing the work:

  (i) Obtains a written authorization from the Employer each time the work is performed, and

  (ii) Performs the work under the direct supervision of a qualified person.

13.17A copy of the instructions referred to in Section 13.16 shall be kept readily available by the employer for the information of persons who perform repair and maintenance work on the machines.

A5. Infrastructure Health and Safety Association (Formerly E.U.S.A.)

The infrastructure Health and Safety Association *"Utility Work Protection Code"*, as adopted by the SLSMC, will also apply to those employees involved in the maintenance/construction of high voltage equipment.

A6. Other SLSMC Reference Documents

Where applicable, other SLSMC APNs and SWPs, posted at the *Health and Safety – Niagara Website*, may provide additional information that shall be considered in addition to this APN #7. These include, but are not limited to the following:

***Accident Prevention Notices*:**

Notice 6	E.U.S.A. Rule Book
Notice 14	Accident Reporting & Investigation Procedures - Entropy Investigation Report
Notice 16	Confined Space Procedures
Notice 21	Reporting Presence on Structure
Notice 32	Protocol for Diving Operations, Pre-Dive Checklist, Work Permit for Diving
Notice 35	Pre-Job Checklist, Tailboard Safety Meeting
Notice 44	Machine Guarding
Notice 20	Protocol for Reporting Unsafe Conditions or Practices, Flowchart
Notice 51	Designated Substance – Lead

Standard Work Procedures:

CO5009	Descending Into Discharge Valve(s) Well(s) Locks 4, 5 & 6
CO5011	Inspection of Lower-End Valves
CO5032	Lock Out and Isolation of Moormaster 400L22
CO5033	Pad Removal Moormaster MM400L-22
CO5034	Extraction of the Dynamic Unit
CO5025	Dogging of Dynamic Unit on Vertical Rails
GE5021	Accessing the Bullnose Lower Lock 4 - Full Lockout
GE5021A	Accessing the Bullnose Lower Lock 4 - Maintenance
GE5055	Entering Bascule Bridge Machinery Rooms
GE5056	Riding Bascule Bridge Machinery Rooms
GE5039	Mitre Gates - Hydraulic Lockout, Normal Operating & By-Pass Procedures
GE5043	Taintor Valves - Hydraulic Lockout, Normal Operating & By-Pass Procedures

APPENDIX B – FORMS

B1. Padlock Cutting Form

Padlock Cutting Form

1. Identification of the person responsible for executing the procedure

Name: _____ **Employee #:** _____

BLOCK LETTERS **BLOCK LETTERS**

2. Identification of Second Employee (Witness)

Name: _____ **Employee #:** _____

BLOCK LETTERS **BLOCK LETTERS**

3. Cutting Procedure

Recognition of forgotten padlock: **Date:** _____ **Time:** _____

DD/MM/YY

Equipment Concerned: _____

Padlock Owner: _____ **Company:** _____

BLOCK LETTERS

Calls made to the worker:	**Call #1**		**Call #2**	
Time of call:				
Is the worker reached?	☐ Yes	☐ No	☐ Yes	☐ **No**
If **YES**, does the worker return to the workplace?	☐ Yes	☐ No	☐ Yes	☐ No
If **NO**, was a message left for the worker?	☐ Yes	☐ No	☐ Yes	☐ No

The Manager responsible (or his/her designated representative) must be called to participate in the inspection of the workplace before cutting the padlock.

Since the worker was not reached or could not return to the workplace, I certify that a thorough inspection of the workplace was conducted in my presence before proceeding to cut the padlock.

Manager: _____

SIGNATURE

Second Employee (Witness): _____

SIGNATURE

Person responsible for removing the padlock _____

SIGNATURE

"Near Miss" Investigation shall be completed in Entropy

DISTRIBUTION: Manager(s), Safety Manager, Supervisor(s)

B2. Lockout Tag



Appendix 4B

MAISONNEUVE REGION LOCKOUT AND TAGGING PROCEDURES

	SLSMC REGIONAL INSTRUCTION: ***Lockout Procedure***	***N°. : RM-SS-7c (1.1)*** ***Revision:*** *3*
In effect on: 2015-06-15		**Replaces:** Regional instruction *RM-SS-7c (1.1) rev. 1*
Date of next revision: 2016-06-15 **By:** Stéphane Lépine		**Communication cycle:** Annual **TO:** Operations and Engineering & Technology employees

- **GOAL**

  This activity is intended to protect the worker, while performing operations on equipment, against any power-up, accidental machine start-up or accidental release of energy and/or hazardous substances. It essentially depends on the verification of the isolation of the energy sources, which includes start-up testing, when possible.

- **FIELD OF APPLICATION**

  This procedure applies to any person performing work associated with potentially hazardous machines, equipment or processes of the *St. Lawrence Seaway Management Corporation*, Maisonneuve Region.

  Policy: The *St. Lawrence Seaway Management Corporation*, Maisonneuve Region, is committed to taking all necessary measures to ensure that during any work activity no energy source or hazardous substance will come into contact with the worker.

- **SCOPE**

  Application

  This activity applies to every machine, system or equipment unit where power-up, accidental start-up, or release of energy and/or hazardous substances poses a risk of injury to workers.

  This activity applies to any work performed in the danger area. This includes, without limitation:

  - Maintenance - repair - servicing
  - Construction - installation - testing
  - Setup - takedown - dismantling
  - Unjamming - troubleshooting - cleaning
  - Setting - adjustment - diagnosis
  - Inspection

  This activity applies to all energy sources, whether they are stored, residual or potential. This includes, without limitation:

  - Electrical
  - Pneumatic
  - Kinetic

- Chemical
- Hydraulic
- Thermal
- Residual - potential – gravitational

Limits

When it is necessary to perform one of the tasks mentioned in the preceding section while maintaining the machinery in operation, the work may be performed in accordance with Article 13.16 (2) of the *Canada Occupational Health and Safety Regulations*. These regulations are described in the Schedule section of this document (Schedule I, Section C).

Definitions

Lockout box: Fixed or portable box in which all serial-numbered keys used for multiple lockouts are stored.

Safety padlock: One-key padlock used strictly for lockout (see Schedule I, Section B).

Single-point lockout: Lockout involving a single isolation point.

Multipoint lockout: Lockout involving more than one isolation point.

Lockout device: Mechanical device that physically prevents the transmission or release of energy, such as a disconnect switch, a valve, a support, that physically prevents the transmission or release of an energy source.

Lockout tag: Tag that goes with a personal or long-term padlock. It is used to communicate the equipment, the placard form number, the date, the proof and the reason for the lockout. It must indicate the name of the person responsible for the lockout who placed the padlock and whether the lockout is short or long term. This properly completed tag is also filed for two (2) years by the supervisor of the employee responsible for the lockout. An example of this tag is included in Schedule II.

Personal tag: Tag used to identify and personalize a padlock for one person. It always goes with a borrowed padlock. It indicates the name of the person and the company and the borrower's telephone number. An example of this tag is included in Schedule ll.

Lockout placard: Single placard linked to a specific equipment unit indicating the places to lock out to control all sources of energy on the equipment in order to carry out a task or activity.

Lockout mechanism (lockout device in CSA Z-460-13): Mechanism built into or added to a lockout device that allows it to be locked with a padlock in the desired position, such as a chain, a handwheel cover, a valve cover, a plug cover, and other means.

Hasp (multi-fastener safety lockout hasp, lockout clip, multiplexer): Clip with several holes used to install multiple padlocks. The last available hole of the hasp is used to add a second hasp.

Lockout station: Cabinet ***or pannel*** containing the equipment necessary for lockout.

Verification of isolation of sources of energy: Verification performed each time energy is isolated and before beginning work on locked-out equipment with the aim of proving that the isolation and the power cut-off have been executed adequately. This verification calls on techniques that provide the highest level of certainty while avoiding the creation of new hazardous phenomena, in particular:

When performing a visual verification of the opening of the disconnector knives
When performing a start-up test or:
- Testing the circuits.
- Manually testing the locked-out controls, actuators or mechanisms of the machines.

When performing a load verification cycle.
When conducting a visual inspection of the location.
When monitoring the movement or flow; or observing the drains, gauges, indicators, etc.
When performing a voltage reading by qualified personnel.

Danger area: Any area located inside or around a machine that poses a risk for the health, safety or physical integrity of workers.

- **ROLES AND RESPONSIBILITIES**

General Managers

Ensure that the procedure is signed and operational.
Ensure that control audits are conducted.

Managers (all sectors combined)

Ensure the appropriate application of the lockout procedure and that the personnel has received necessary training.

Maintenance Managers

Approve the lockout placards.

Supervisors (all sectors combined)

Ensure that everyone rigorously respects lockout procedures.
Take charge, if necessary, in case of non-compliance during performance of the activity.
Retain the used lockout tags for a period of two (2) years.

Maintenance Supervisors

du programmeVerify and ensure that all the materials required to apply the procedure are in good condition and available in sufficient quantity.
Manage the long-term padlock or mandate someone from their department to do so.

Maintenance Engineer

Creates and updates the lockout placards in the database.
Maintains the integrity of the information on the lockout placards.

Corrects all discrepancies detected, any change that impacts the lockout and any new equipment acquired that requires locking out.

Team Leaders

Control and monitor the personal padlocks of employees under their responsibility.
Ensure the daily integration of the lockout procedure into the activities of their respective work groups.
ol the team's long-term padlocks.

Person responsible for the lockout:

Person trained for this procedure and who takes charge of the application of the lockout placard.

Ensures that no one is in the work area before beginning the lockout.
Participates in the lockout procedure, ensuring the lockout placard is properly applied.
Participates in lockout verification according to the appropriate methods.
Personally signs the lockout tag and places it in the padlock shackle or in the lockout box.
Ensures that all the guards and safety devices of the equipment are reinstalled and operational at the end of the work.
Performs the unlocking procedure according to the information on the lockout placard.
Verifies that the equipment is ready and fit to operate, in collaboration with operations.
Informs the department head and/or supervisor of the modifications, additions and any other information useful to update the lockout placard.
Returns the duly completed and signed lockout tag to the supervisor at the end of each unlocking procedure
Returns all the lockout equipment to its proper location.

Lockout Executor:

Any person trained for the lockout procedure who is present in the danger area of a machine and exposed to hazards while performing work.

Knows and respects the lockout procedure.
Ensures that the lockout is performed in compliance with the lockout placard before beginning the work.
Keeps his/her personal padlock and its identification in good condition.
Affixes his/her personal padlock before working.
Removes his/her personal padlock when the work is completed.
Informs the supervisor when the work is completed.
Informs the supervisor of abnormal situations when applying lockout.

External Contractor:

Trained and responsible for applying the lockout procedure of the *St. Lawrence Seaway Management Corporation*, Maisonneuve Region.
Uses a padlock identifying the worker and his/her employer; otherwise uses a borrowed padlock.
Uses a lockout box for all his employees in the contractors' trailer, if applicable. The contractor responsible for his team affixes his padlock to the lockout box of the *St. Lawrence Seaway Management Corporation*, Maisonneuve Region, and puts the key for this padlock in his lockout box in his trailer.

If the contractor is not trained, a trained employee of the *St. Lawrence Seaway Management Corporation* is responsible for applying the lockout procedure for the contractor.

Responsable Contract Manager and Worksite Inspector:

Persons responsible for a scheduled shutdown or major work.

Work requiring the presence of one or more contractors:

- Ensure that contractors have received the required documented information on this procedure and that they comply with contractor's responsibilities.
- If they have not received information on this procedure, they must be accompanied by a person trained for this procedure.

Ensure that required documents are updated.

Are considered responsible for lockouts if no *St. Lawrence Seaway Management Corporation*, Maisonneuve Region, employee participates in the work.

- **CONDUCTING THE ACTIVITY**

General Description

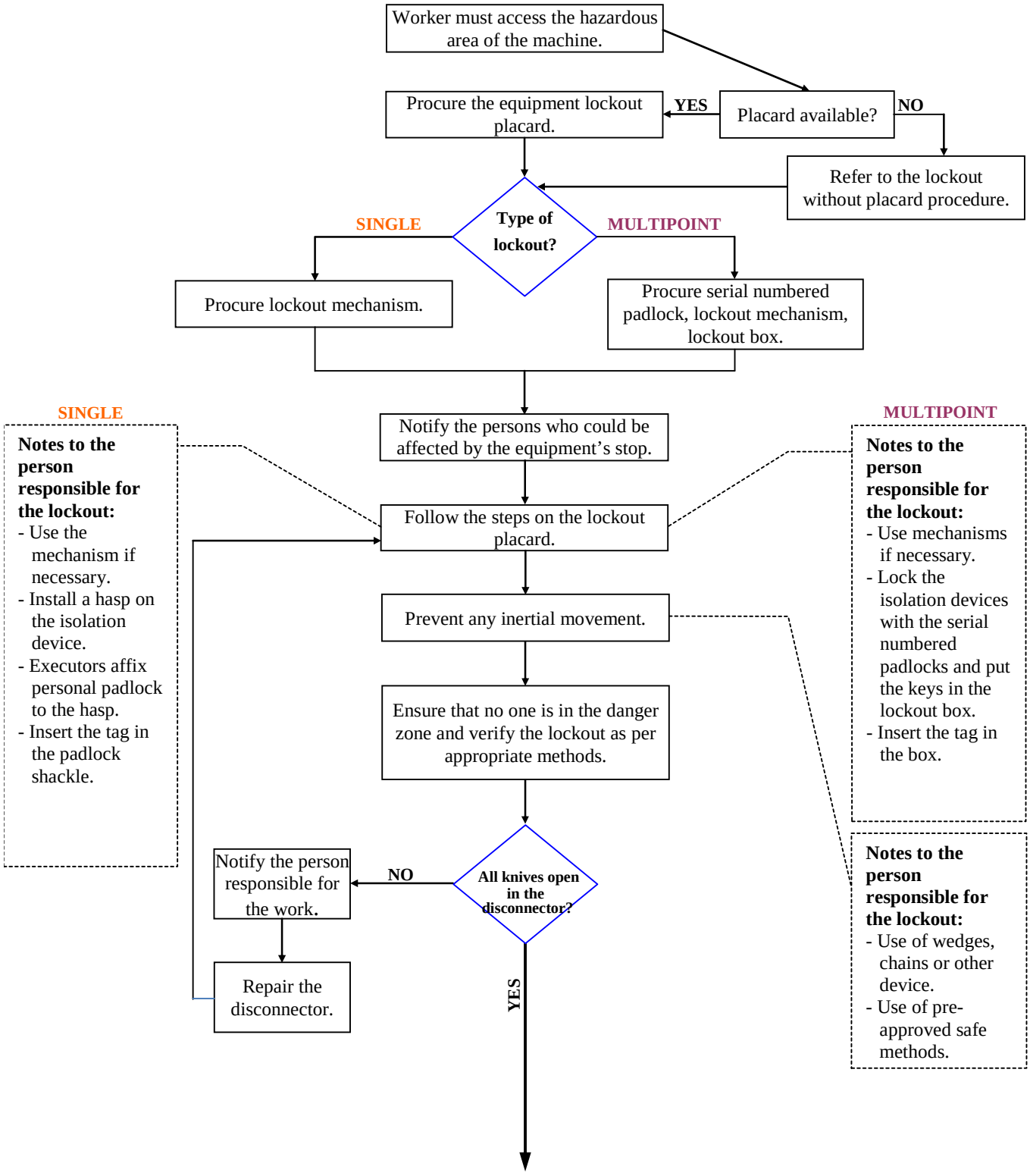
The activity consists in controlling the energy sources, hazardous substances and residual or stored energy by applying the lockout process for each task to be performed in the danger area of a machine, equipment unit or potentially hazardous process. Depending on the task, this process generally includes energy release activities and, if necessary, blocking activities.

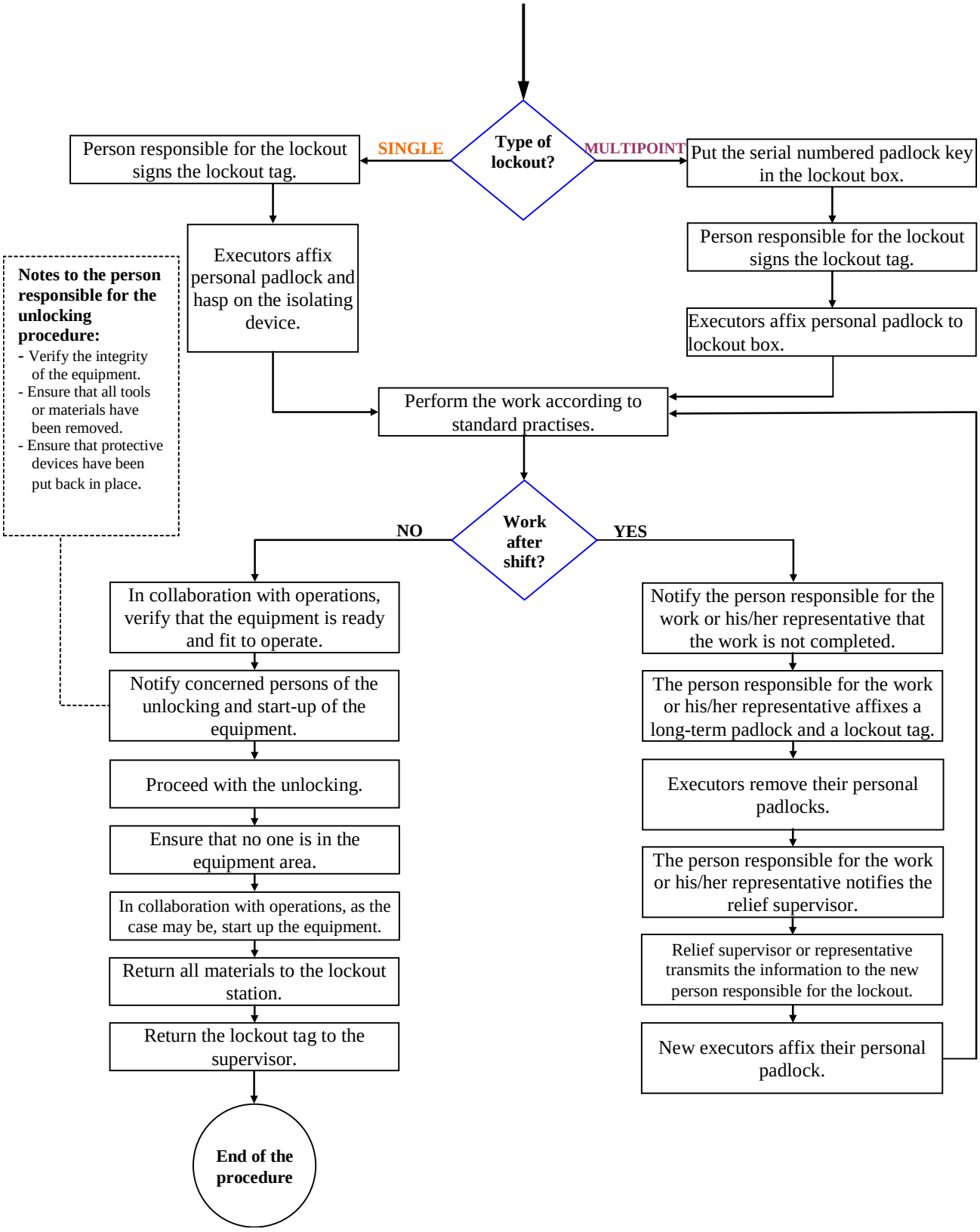
A lockout placard must be available for the person responsible for the lockout and/or the lockout executor at the time the lockout process is performed.

The lockout placard must be printed and available at all times at the lockout location.

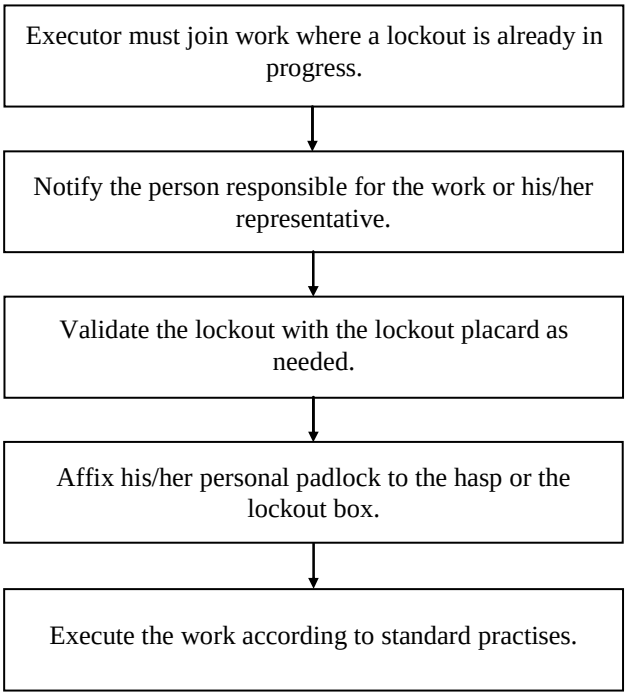
The discharge of any form of hazardous energy and/or substance must include the release of hazardous energy resulting from any movement, supply, start-up or release of accumulated energy, whether accidental or deliberate.

Lockout Procedure

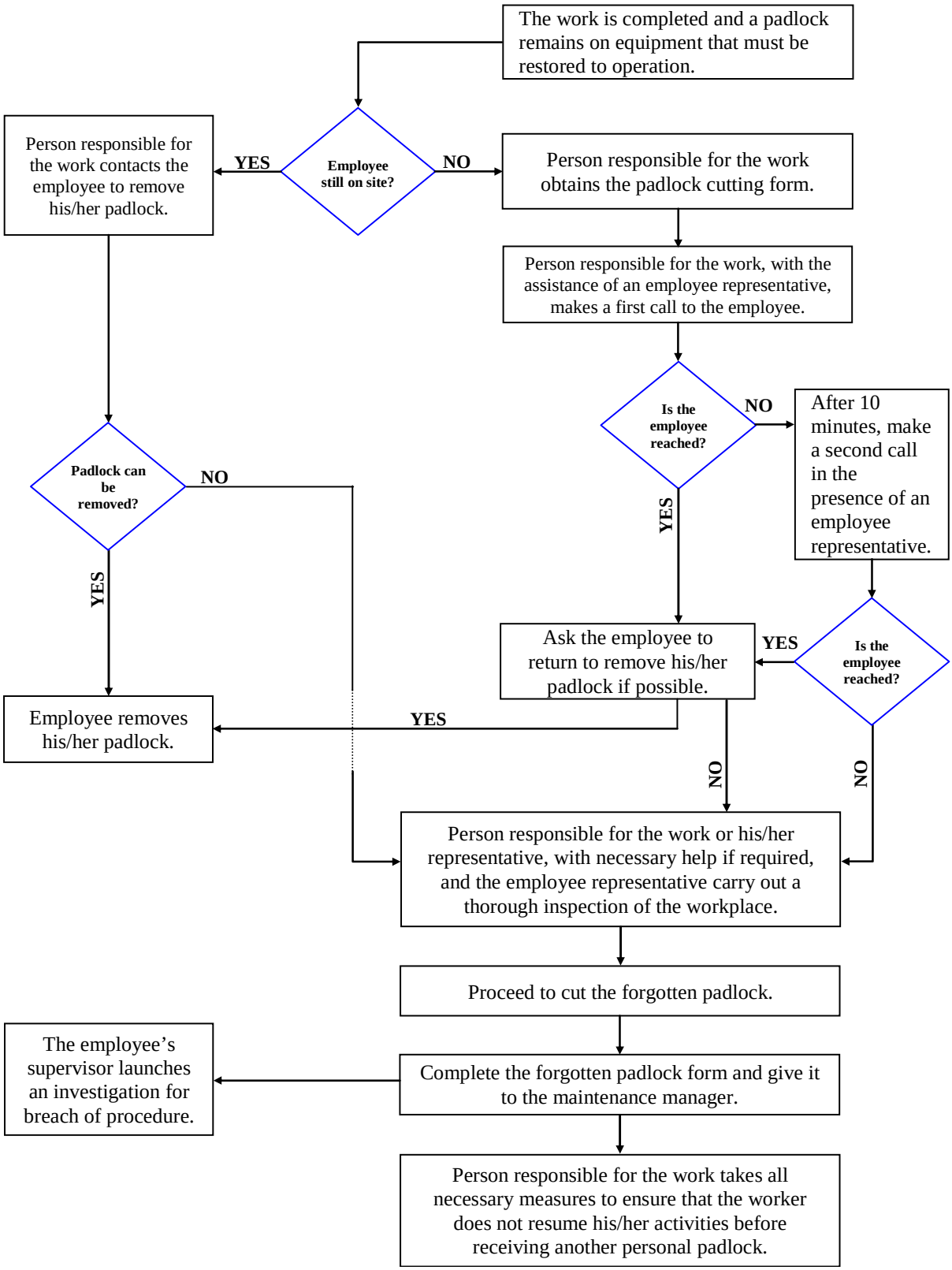



Type of lockout?
SINGLE
MULTIPOINT
Person responsible for the lockout signs the lockout tag.
Executors affix personal padlock and hasp on the isolating device.
Put the serial numbered padlock key in the lockout box.
Person responsible for the lockout signs the lockout tag.
Executors affix personal padlock to lockout box.
Notes to the person responsible for the unlocking procedure:
- Verify the integrity of the equipment.
- Ensure that all tools or materials have been removed.
- Ensure that protective devices have been put back in place.
Perform the work according to standard practises.
Work after shift?
NO
YES
In collaboration with operations, verify that the equipment is ready and fit to operate.
Notify concerned persons of the unlocking and start-up of the equipment.
Proceed with the unlocking.
Ensure that no one is in the equipment area.
In collaboration with operations, as the case may be, start up the equipment.
Return all materials to the lockout station.
Return the lockout tag to the supervisor.
End of the procedure
Notify the person responsible for the work or his/her representative that the work is not completed.
The person responsible for the work or his/her representative affixes a long-term padlock and a lockout tag.
Executors remove their personal padlocks.
The person responsible for the work or his/her representative notifies the relief supervisor.
Relief supervisor or representative transmits the information to the new person responsible for the lockout.
New executors affix their personal padlock.

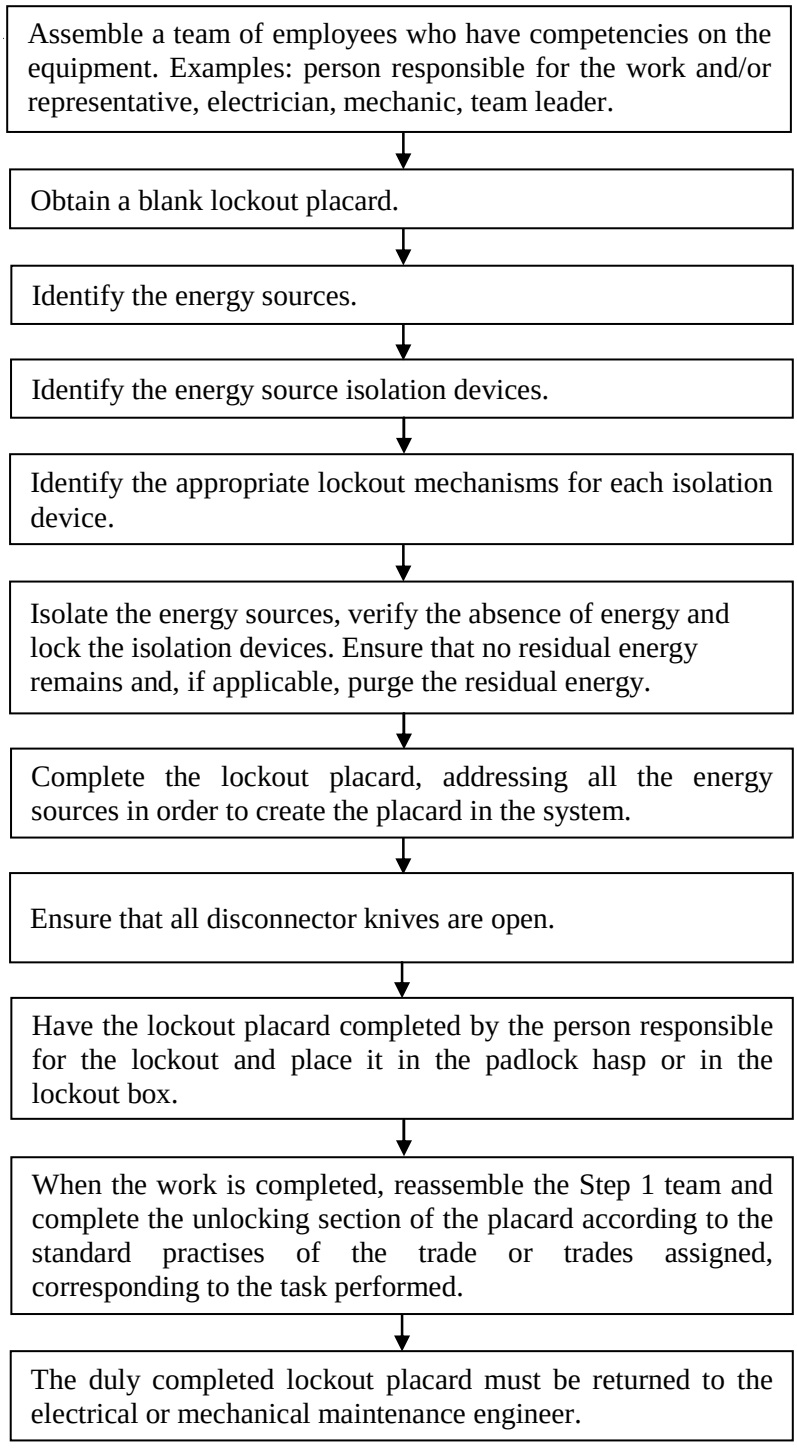
Procedure for joining work in progress



Padlock Cutting Procedure



Lockout Without Placard Procedure



- **SPECIAL PROVISIONS**

Safely Padlock Management

The safety padlocks may be used only for the application of this procedure and may not be altered or modified. The keys may not be duplicated. All the lockout equipment, including personal padlocks and related keys, remains the property of the *St. Lawrence Seaway Management Corporation*, Maisonneuve Region.

responsable du départementIn case of a lost or broken key, refer to the padlock cutting procedure. The maintenance supervisor of the locality must be informed in order to obtain a replacement in case a padlock is cut.

- A personal padlock is provided to each authorized person who has received training on the lockout procedure (welcome package). The personal padlock and its key must be kept on one's person at all times. It is forbidden to lend one's personal padlock to another person. Moreover, a personal padlock must never be affixed and removed by a person other than its owner.

Padlock Cutting

- responsable du département de l'équipement cadenasséThe padlock cutting procedure applies when a key is lost or a worker has forgotten to remove a padlock. Only supervisors or their representatives have the authority to initiate the padlock cutting procedure. The holder of the forgotten padlock must return to the workplace, at his/her expense, to remove his/her padlock.

Breach of Procedure Investigation

responsable du départementWhen a situation prevents the application of the procedure in its entirety, management and the maintenance director or his/her representative must initiate a breach of procedure investigation to identify the causes and take the necessary corrective actions so that such a situation does not recur. To do so, he/she uses the form in Entropy if needed.

Introduction of new equipment / Modification of equipment

When new equipment is introduced, it must have the appropriate isolation devices. A lockout placard must be developed and made available to those concerned by the project manager.

The electrical maintenance engineer and the maintenance supervisor must be informed of any introduction or modification of equipment in order to maintain the lockout placards up-to-date at all times. Thus, when equipment that has a lockout placard is modified, the placard must be modified accordingly and revalidated.

Master Key

Neither the *St. Lawrence Seaway Management Corporation*, Maisonneuve Region, nor any of its executives or employees, has a master key to serial numbered padlocks, personal padlocks and borrowed padlocks.

Disciplinary Measures

The application of the lockout procedure is mandatory, and non-compliance with this procedure is considered to be a serious offence, exposing the perpetrator to disciplinary action.

- **DOCUMENTS**

Lockout Placard

Description

Placard related to an equipment unit, indicating the places to padlock to control all the energy sources on the equipment for maintenance purposes.

Retention

Maintenance lockout placards are posted or available near the equipment.

After use, the duly signed lockout tags must be retained by the supervisor for a period of two (2) years.

Padlock Cutting Form (refer to Schedule II)

Description

Form to be completed by the person responsible for the work and the employee representative when a padlock must be cut.

Retention

The original of the form must be retained by the employee's manager and a copy must be provided to the worker in person.

- **TRAINING REQUIRED**

All workers of the *St. Lawrence Seaway Management Corporation,* Maisonneuve Region, who will have to work on locked-out equipment, as well as their supervisors, must attend a training session on the operation of the lockout procedure (the list of participants must be documented at each session by the person in charge of training). Every employee of an external contractor must be trained in and comply with the lockout procedure of the *St. Lawrence Seaway Management Corporation*, Maisonneuve Region, which is included in the document *SLSMC Corporate Safety Requirements for Contractors.*

- **CONTROL**

The activity must be controlled according to the following parameters:

Control	Responsibility	Frequency
Monitoring of the employees' personal padlocks	Le responsable de département et/ou Supervisors	Annual
Production and enforcement of lockout placards	Team leaders and/or supervisors and/or management	Ad hoc and random
Control of the workers' training	Manager of operations support group	Annual

Control audit	General managers	Two (2) years

- **REVIEW**

  The activity, the procedure and its supporting documents must be reviewed and updated after the first year of implementation, and thereafter, every two (2) years. At each review, employees must be informed of any changes.

SCHEDULE I

Location of Documents

Document	Location
Programme Lockout procedure	**Intranet**: *http://maiweb/santeSecurite/PagesSanteSecurite2/default.htm*
Padlock cutting form	**Intranet**: *http://maiweb/santeSecurite/PagesSanteSecurite2/default.htm*

Description of Safety Padlocks

Type	Colour	Description	Location	Use
Personal	**RED**	One-key padlock, registered to and identified with the employee of the *St. Lawrence Seaway Management Corporation*, Maisonneuve Region	Within the worker's reach at all times	Any lockout
Borrowed	**YELLOW**	One-key padlock	Under the supervision of the person in charge or the supervisor	
Contractors' personnel	-	One-key padlock, which must be identified in the name of the company and the company's employee		
Serial numbered	**GREEN**	Serial numbered padlocks with the same unique key	On the equipment and at the lockout stations.	Multipoint lockout
Long-term	**BLUE**	Padlock ensuring maintenance of the lockout	On the equipment and at the lockout stations.	Shift change Maintenance of the lockout during long-term shutdowns Maintenance of the lockout by a supervisor Occurrence of a special situation necessitating a long-term padlock

Applicable Regulations

Canadian Occupational Health and Safety Regulations

13.16 (1) Subject to subsection (2), where it is necessary to remove a machine guard from a machine in order to perform repair or maintenance work on the machine, no person shall perform the repair or maintenance work unless the machine has been locked out in accordance with a written lockout procedure provided by the employer.

(2) Where it is not reasonably practicable to lock out a machine referred to in subsection (1) in order to perform repair or maintenance work on the machine, the work may be performed if:

a) the person performing the work follows written instructions provided by the employer that will ensure that any hazard to that person is not significantly greater than it would be if the machine had been locked out; and

b) the person performing the work:

(i) obtains a written authorization from the employer each time the work is performed, and

(ii) performs the work under the direct supervision of a qualified person.

13.17 A copy of the instructions referred to in section 13.16 shall be kept readily available by the employer for the information of persons who perform repair and maintenance work on his machines.

SCHEDULE II

a) Padlock Cutting Form

Padlock Cutting Form

1. Identification of the person responsible for executing the procedure

Name: _____ Employee #: _____

BLOCK LETTERS

2. Identification of the employee representative

Name: _____ Employee #: _____

BLOCK LETTERS

3. Cutting procedure

Recognition of forgotten padlock: Date: _____ Time: _____

DD / MM / YY

Equipment concerned: _____

Padlock owner: _____ Employee #: _____

BLOCK LETTERS

Calls made to the worker:	Call #1		Call #2	
Time of call:				
Is the worker reached?	☐ Yes	☐ No	☐ Yes	☐ No
If YES, does the worker return to the workplace?	☐ Yes	☐ No	☐ Yes	☐ No
If NO, was a message left for the worker?	☐ Yes	☐ No	☐ Yes	☐ No

The manager responsible (or his/her designated representative) must be called to participate in the inspection of the workplace and in cutting the padlock.

Since the worker was not reached or could not return to the workplace, I certify that a thorough inspection of the workplace was conducted in my presence before proceeding to cut the padlock.

Manager:

_____

SIGNATURE

Employee Representative:

_____

SIGNATURE

Person responsible for executing the procedure:

_____

SIGNATURE

Distribution: Management, OHS Manager, Employee Representative, Employee

b) Example of a Lockout Tag



VERROUILLÉ

Dept :

	Exploitation		Civil
	Mécanique		Électrique
	Inspection		Autre

J'atteste du verrouillage suivant

Équipement : _____

Fiche utilisée : _____

En date du : ____ / ____ / ____

Preuve du cadenassage :

_____

Nom de l'opérateur

Responsable : _____

Tél. : _____

Travaux : _____

_____

BLI-C03072

LOCKED

Dept :

	Operation		Civil
	Mechanical		Electrical
	Inspection		Other

I testify the locking of the following

Equipment : _____

Lockout form used : _____

Date of : ____ / ____ / ____

Direct witness :

_____

Operator name

Person in charge : _____

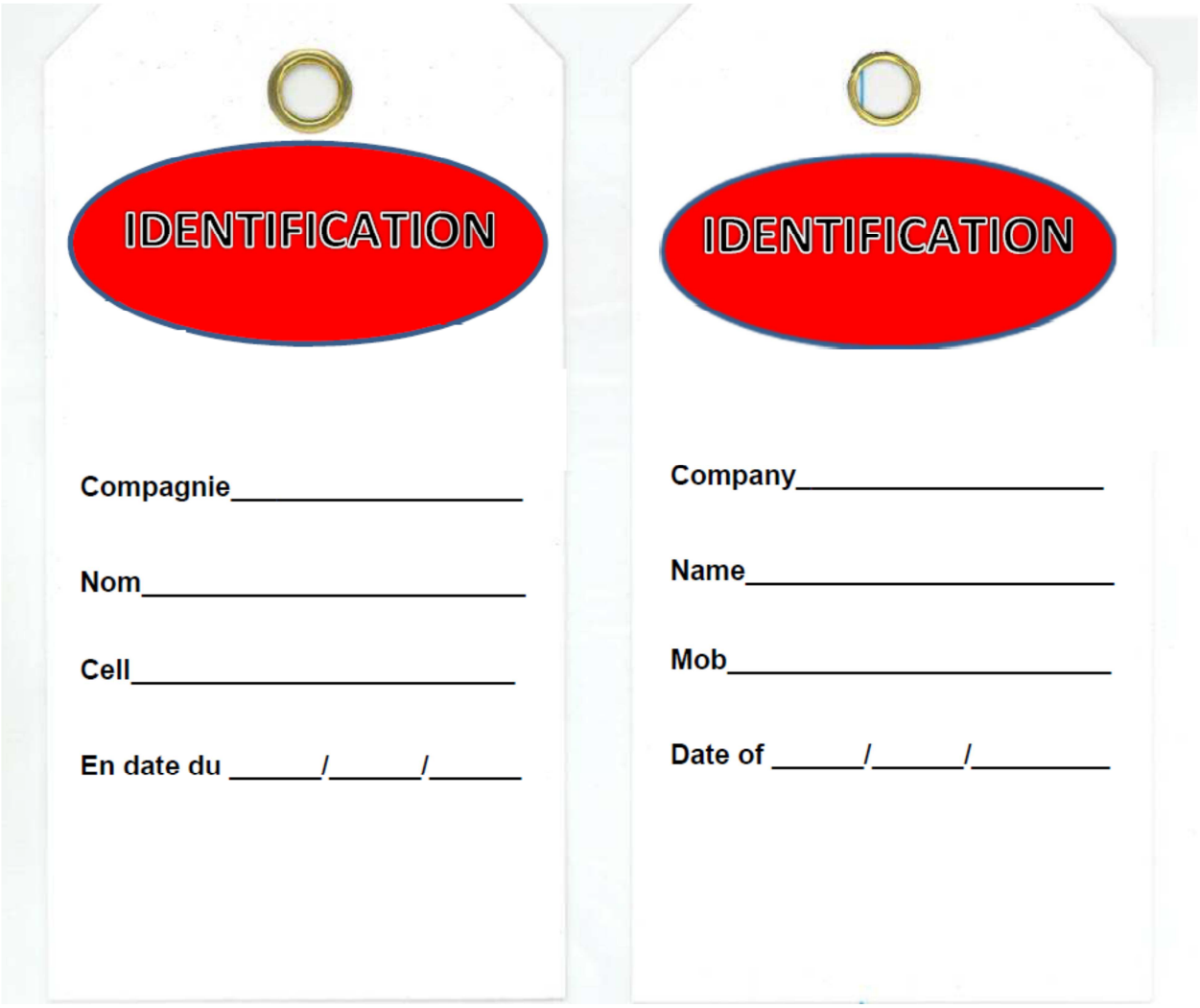
Tel. : _____

Work : _____

_____

BLI-C03072

c) Example of a Personal Tag



Signature of the owner of the regional instruction:

_____ **Date:**_____

Signature of the general manager – Regional Engineering, Maisonneuve Region, SLSMC:

_____ **Date:**_____

Appendix 5A

DIVERS RELEASE
MAISONNEUVE REGION

1. 

Corporation de Gestion de la Voie Maritime du Saint-Laurent

The St. Lawrence Seaway Management Corporation

Région Maisonneuve

Maisonneuve Region

APPENDIX 5A

DIVERS' RELEASE

The undersigned, who employs experienced professional diver's, hereby undertakes to- perform certain work under water, as required by The St.Lawrence Seaway Management Corporation in accordance with all legally applicable safety requirements including those of the Canadian Standard Association (CSA) – Occupational Safety Code for Diving Operations – Number Z275.2 M1992 and any CSA subsequent Standards at a $_____per_____rate, or as per Purchase Order N^{o}_____ to include the cost of all insurance according to the Insurance conditions "I", supply and operation of all required equipment and the services of a team composed of the number of divers prescribed by the applicable laws and standards present at each dive site. The undersigned further agrees to pay these people and to assume all risks in connection with or involved with the said works and shall indemnify and save The St.Lawrence Seaway Management Corporation and Her Majesty in Right of Canada harmless from and against all claims, demands, losses, costs, damages, actions, suits, or proceedings by whomever made, brought or prosecuted and in any manner based upon, arising out of, related to, occasioned by or attributable to the activities of the undersigned and those of the attending Divers, including other crew members whose services are retained by the undersigned.

Signed at_____this_____Day of _____

WITNESS

NAME OF COMPANY OR PERSON

Appendix 5B

DIVERS RELEASE
NIAGARA REGION

The St. Lawrence Seaway Management Corporation

Corporation de Gestion de la Voie Maritime du Saint-Laurent

WORK PERMIT FOR DIVING OPERATIONS

THE ST. LAWRENCE SEAWAY MANAGEMENT CORPORATION, hereinafter called "Licensor", hereby grants permission to:_____ hereinafter called the "Licensee" its' agents, employees, contractors and subcontractors for the period from_____to_____to carry out diving operations in the Welland Canal in the following area:

Location:_____

Vessel Name (if applicable)**:**_____

It is understood that the Licensee shall execute the said work at its risk and at its expense and shall pay for any damage that may be done to the "Licensor's" property. This permit is subject to the following conditions:-

1. "Licensor's" Administration and Labour

The Licensee hereby agrees to pay an Administration Fee of **$600.00** and the cost of SLSMC Labour which includes all benefits and overhead costs on a per diem basis which are directly related. The fee may be waived under certain circumstances.

2. Indemnification

The Licensee shall, indemnify the "Licensor" and Her Majesty in right of Canada according to the "I" Insurance Conditions (copy attached) Clause GIC 1 "Indemnification". For the purpose of this Work Permit the "Contractor" means "Licensee".

3. Insurance

The Licensee shall, comply with attached "I" Insurance Conditions and furnish proof of Insurance coverage in advance of the work through a Certificate of Insurance.

4. Diving Requirements

The contractor or sub-contractor to the Licensee, Lessee or Ship Owner will perform all underwater work in accordance with the most current versions of the following Acts, Regulations, Standards and amendments: Canada Occupational Health and Safety Regulation - Part XVIII Diving Regulations, Ontario Occupational Health and Safety Act – Ontario Regulation 629/94 Diving Operations, CSA Z275.4-xx Competency Standard for Diving Operations, and CSA Z275.2-xx Occupational Safety Code for Diving. (for CSA Standards the suffix “xx” refers to the most current version).

5. Contractor Responsibilities Re: Lockout and Tagging Procedures

The Licensee through his sub contractor shall ensure that all equipment for each site specific location, as identified by the "Licensor's" practices and procedures are locked out and tagged per the latest Accident Prevention Notice # 7 and the relevant Mechanical and Electrical Equipment detailed in the "Licensor's" Dive Manual when and where required.

Dated at the City of _____ Ontario this_____day of_____20 _.

_____ _____

Witness The St. Lawrence Seaway Management Corporation

Niagara Region

_____ _____

Witness Licensee Licensee

Note: Licensee means Ship Owner, Lessee or Licensee, Reviewed by: Mike Koski - February 11, 2016

The St. Lawrence Seaway Management Corporation

Corporation de Gestion de la Voie Maritime du Saint-Laurent

Protocol for Diving Operations

1. GENERAL

In order to ensure the safety of divers and SLSMC personnel the process detailed in this notice shall be followed prior to a diving company's personnel being given authorization to undertake diving operations in SLSMC jurisdictional waters.

The dive company is responsible for the Health and Safety of all their employees in accordance with the most current versions of the following Acts, Regulations, Standards and amendments:

I. Canada Occupational Health and Safety Regulation - Part XVIII Diving Regulations
II. Ontario Occupational Health and Safety Act – Ontario Regulation 629/94 Diving Operations
III. CSA Z275.4-12 Competency Standard for Diving Operations
IV. CSA Z275.2-15 Occupational Safety Code for Diving

2. CRITERIA

The dive company is responsible for effectively performing all applicable lockouts and tag outs, in accordance with the procedures detailed in Accident Prevention Notice # 7 "Lockout & Tagging Procedures", of the relevant mechanical and electrical equipment belonging to the Seaway and others[1] as per applicable practices and procedures.
"Others[1]" pertains to SLSMC lessees and licensees or applicable stakeholder.

For ship related dives the dive company is responsible to lockout all applicable ship equipment under the direction of responsible ship personnel.

Before undertaking any diving operation in the canal, a representative of the licensee, lessee or ship owner contracting the diving operation and the contractor's dive supervisor shall arrange a pre-dive meeting as described below.

3. PRE-DIVE MEETING

3.1 The following personnel shall attend a pre-dive meeting:

- The dive company's dive supervisor, a SLSMC owner's diving representative, any required technical representatives as determined by the scope of work (for example: a SLSMC civil inspector or project lead, lessee, licensee, ship owner's representative, or general contractor's representative).
- For ship related diving operations; ship inspectors may act as owner's diving representative and do not require an additional SLSMC owner's diving representative if the dive operation takes place in the following ***10 designated areas***:

Wharf 1 extreme North end, Wharf 2 extreme North end,
Wharf 11, Wharf 16, Wharf 18.2, Wharf 18.3, Wharf 19 (East), Wharf 59 (E. S. Fox), The extreme south end of the approach wall Above Lock 7 East,
The extreme south end of the approach wall above Lock 7 West.

3.2 At pre-dive meeting the following items will be discussed and addressed:

SLSMC owner's diving representative and relevant technical personnel shall review:

- The SLSMC Pre-Dive Checklist for External Dive Operations,
- The nature of task(s) with regard to the scope of work required,
- Accident Prevention Notice # 7 " Lockout & Tagging Procedures",
- The relevant lockouts of mechanical and electrical equipment per SLSMC practices and procedures for known hazards,
- Ensure that the dive company is fully aware of all known hazards and confined spaces that may be encountered by the divers during the specific dive operation,
- The dive company shall be instructed as to the details of the structure using all available means i.e. blueprints, drawings, pictures, videos, etc. as to the details of the structures they may encounter,
- The communications protocol procedures with the operations control centre,
- The dive company's dive plan,
- The dive company's contingency plan,
- When applicable any work permits will be reviewed and signed,
- When applicable obtain the "I" Insurance conditions requirements,
- Ensure owner responsibilities under provincial and federal legislation are met.

Note: only diving companies "approved" by SLSMC may dive in SLSMC jurisdictional waters.

- Divers, divers' tenders and dive supervisors must possess proper valid certification in accordance with applicable legislation,
- A SLSMC project lead will review any engineering work when required.

4. Seaway Representatives required at dive-site:-

4.1 SLSMC Dive Representative

A SLSMC Diving Representative may be required to be present, depending on the location and nature of the diving operation.

4.2 Criteria for establishing "attending" SLSMC Representatives:

A SLSMC Diving Representative is required, when diving at:

All Lock Structures including upper and lower tie walls to at least L/A 3, All Weir structures,
All walls, structures or canal banks containing or housing intakes or outfalls,
All walls, structures, raceways, and culverts with known entrapments and hazards, SLSMC Ship Inspector may act as owner's diving representative and may attend when diving operations are carried out at designated areas as per Section 3.1.

SLSMC Representative may not be required:

When it has been established at a pre-dive meeting that the Owner's Representative is not required to attend the dive because there are no known hazards that a diving company would encounter beyond a typical diving environment, or that any known hazards have been mitigated over a long term to the satisfaction of all parties.
These may be diving operations during non-navigation, carried out in areas not impacted by structures, lock operations and or raceways/outlets/outfalls, or
Diving operations carried out at Piers, Wharfs, Docks and Tie-up walls without pilings and reaches, and are, diving operations that have long term lockouts in place such as non-navigation where all known hazards associated with SLSMC operations have been mitigated for the entire dive operation.

5. During the Navigation Season

Diving operations shall not interfere with, cause delay to, or interrupt navigation of commercial vessels.

6. Notification Process

The operations control centre during the navigation season and security personnel during winter works shall not permit diving operations in SLSMC jurisdictional waters unless there has been advance notification as follows:

Seaway Diving Operations:

A SLSMC owner's diving representative will contact operations control or security prior to the commencement of the dive operation.

Ship Related Dives:

Navigation Season:

A Ship Inspector will contact operations control prior to the commencement of the dive operation.

Winter Works:

A Ship Inspector acting as SLSMC owner's dive representative when in designated areas will contact security personnel prior to the commencement of the dive operation.

Licensee or Lessee related Dives:

Navigation Season:

A SLSMC owner's diving representative will advise operations control prior to the commencement of the dive operation.

Winter Works:

A SLSMC owner's diving representative will advise security personnel prior to the commencement of the dive operation.

7. Onsite Communications

The SLSMC owner's diving representative will notify the operations control centre or security personnel using phone or radio communication when and where the divers enter and exit the water and when the dive operation is complete.

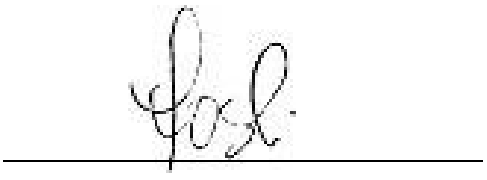
8. No Dive Zones

Specific areas where ***delta-p hazards*** are known to exist and cannot be mitigated without special mitigating procedures being put in place shall be deemed as ***no dive zones***. No dive zones are defined below and dive operations are not permitted to take place without the implementation of special considerations. These considerations shall include specific written dive plans, written contingency plans that shall allow for the investigation, and subsequent mitigation of delta-p hazards, being put into place prior to the dive operation.

No dive zones ***shall be defined as*** and declared above any structure or water control device where a delta- p hazard is known to exist at a magnitude to be an entrapment danger to divers and hazard mitigation cannot be ensured prior to diver entry.

SLSMC
Niagara Region
St. Catharines, Ontario

Revised by Mike Koski
Process Support Coordinator April 8, 2017



Corporation de Gestion
de la Voie Maritime
du Saint-Laurent

The St. Lawrence
Seaway Management
Corporation

SLSMC PRE-DIVE CHECKLIST DIVE OPERATIONS

Date: _____ Location: _____

Purpose of Dive: _____

Dive Contractor: _____ Dive Supervisor: _____

SLSMC (Owner's) Dive Rep:_____ No. in dive crew: _____

☐ Is a permit necessary and has it been completed	Yes	No
☐ Has the dive operator company been pre-qualified to perform dive operations		Yes

NOTIFICATIONS

	By whom	Time	Instruction Given
Operations Control Centre	_____	_____	_____
OCC Security (non-nav season)	_____	_____	_____
Lock Leader or Operator	_____	_____	_____
Shift Supervisor Operations	_____	_____	_____
Potential Effluent Dischargers	_____	_____	_____
Potential Intake Facilities	_____	_____	_____

OWNER INSURANCES

☐ Identify any designated substances (ex. PCB, mercury, asbestos, lead, benzene, etc.)

_____

☐ Has notice been given to the Ministry of Labour for the dive……NOP No. _____

- ☐ by written communication _____
- ☐ by oral communication _____

A copy of the written (fax) should be obtained

☐ Identify the dive supervisor (above), is he/she certified to CSA-Z275.2-11_____

☐ Is there a written operational dive plan? _____& does it include the following

- ☐ has tasks and how they will be performed _____
- ☐ SLSMC reference procedure No. _____
- ☐ are the hazards identified, see hazard section_____
- ☐ identified nearby effluents/intakes and the plants notified_____

☐ Is there a written contingency plan? _____ & does it include the following….

- ☐ Emergency medical communications, include EMS response routing
- ☐ Diver evacuation procedures
- ☐ Equipment failure response procedures
- ☐ Loss of diver communications

- ☐ Hazardous weather conditions
- ☐ Diver abort procedures

☐ Is there a copy of the dive regulations with the dive crew?
☐ Is there a copy of the applicable CSA standards with the dive crew?
☐ Have the communication procedures with traffic control been explained?
☐ Have the communication procedures with supporting work crews been explained?

POTENTIAL HAZARDS FOR WELLAND CANAL DIVES
(dive supervisor is to include in their dive plan)

☐ Environmental Hazards (weather, ice, etc….)_____
☐ Exposure (hot, cold…)_____
☐ Biological (outfalls, spills, …)_____
☐ Shipping and Navigation_____
☐ Floating plants_____
☐ Wharfs (including pilings)_____
☐ Bottom debris _____
☐ Bottom contour or obstructions (refer to photos or drawings)_____
☐ Underwater equipment (pinch points)_____
☐ Overhead lifting or lowering _____
☐ Electrical shock hazards _____
☐ Low frequency sonar _____
☐ Currents _____
☐ Confined spaces _____
☐ Possible entrapments _____
☐ Differential pressures _____

☐ LOCKOUTS REQUIRED

_____
_____
_____
_____
_____

Power off	Power on	Power off	Power on

POST DIVE REMARKS

☐ Was there any deviation from the Notice filed with the Ministry of Labour?_____
If yes, ensure a copy of the "deviation notice" is obtained.
☐ Was there any incidents (trapped diver, equip. failure, diver rescue, etc..) during the dive?
If yes, ensure a copy of the Notice to the MOL of such incident is obtained.
☐ Other remarks

_____
_____
_____
_____

_____
_____
_____
_____
_____
_____

_____
SLSMC Dive Rep

_____
External Dive Operator
Dive Supervisor

Provide original to SLSMC Dive Coordinator
Revised by: Mike Koski
11 février 2016