

Atlantic Offshore Occupational Health and Safety Initiative

Proposed Policy Intent for Phase 2 of the Atlantic OHS Regulations

Government of Canada
Government of Newfoundland and Labrador
Government of Nova Scotia

June 21, 2017

Table of Contents

| | |
|--|----|
| INTRODUCTION..... | 2 |
| ACRONYMS..... | 3 |
| DEFINITIONS..... | 4 |
| GENERAL REQUIREMENTS..... | 8 |
| TOOLS AND MACHINERY..... | 9 |
| HOT WORK..... | 14 |
| BOILERS AND PRESSURE VESSELS..... | 16 |
| ELEVATORS AND MANLIFTS..... | 17 |
| MATERIALS HANDLING..... | 18 |
| Safe Lifting Program..... | 18 |
| Training..... | 18 |
| Work Permits..... | 18 |
| Lifting and Positioning Personnel..... | 19 |
| Design, Installation and Protection of Materials Handling Equipment and Areas..... | 19 |
| Operation..... | 24 |
| Loose Lifting Gear and Pad Eyes..... | 29 |
| Manual Handling of Materials..... | 30 |
| Storage of Materials..... | 30 |
| PERSONNEL TRANSFER..... | 31 |
| FUELLING..... | 34 |
| ELECTRICAL SAFETY..... | 35 |
| TABLE 1A..... | 40 |
| TABLE 1B..... | 41 |
| CONTROL OF HAZARDOUS ENERGY- LOCKOUT AND OTHER METHODS..... | 42 |
| SMOKING ROOMS..... | 45 |

INTRODUCTION

On December 31, 2014, amendments to the federal *Canada-Newfoundland and Labrador Atlantic Accord Implementation Act* and the *Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act* and the corresponding provincial laws came into force. These changes established a statutory occupational health and safety (OHS) regime for each offshore area that apply to all workplaces in the offshore area, as well as passengers in transit to/from and in-between those offshore workplaces. The changes also clearly established the Canada-Newfoundland and Labrador Offshore Petroleum Board and the Canada-Nova Scotia Offshore Petroleum Board as the regulator of OHS matters in its respective administrative area.

Simultaneously, transitional regulations (both federal and provincial versions) were brought into force to implement the OHS regime. Those regulations will be automatically repealed in December 2019, requiring that new regulations enter into force prior to that date. As such, the Governments of Canada, Newfoundland and Labrador and Nova Scotia have embarked on the development of OHS regulations under each Accord Act with the participation of the two boards.

As part of the initiative, the governments will be holding engagement sessions with stakeholders on three phases of draft policy intent, as well as a session on the draft regulatory text. This consultation approach will ensure that stakeholders can provide feedback throughout the process of regulation development.

Consultation on Phase 1 of the draft policy intent took place over summer 2016. This document contains the Phase 2 policy intent. The document is not comprehensive of all OHS regulations that will be necessary. Written comments on this policy intent may be submitted by September 6th, 2017 to:

Kim Phillips

Project Manager, OHS Initiative

kim.phillips@canada.ca

All written comments will be posted to the Atlantic OHS Initiative webpage without any amendments or alterations. The webpage can be found here: <https://www.nrcan.gc.ca/energy/offshore-oil-gas/18883>

Similar policy intent documents addressing the remainder of the topics will be produced and circulated prior to subsequent engagement sessions.

ACRONYMS

| | |
|------|--|
| ANSI | American National Standards Institute |
| API | American Petroleum Institute |
| ASME | American Society of Mechanical Engineers |
| CSA | Canadian Standards Association |
| EN | European Norm |
| ULC | Underwriters Laboratories of Canada |

DEFINITIONS

"Arc flash hazard" means a dangerous condition associated with the possible release of energy caused by an electric arc.

"Cabinet" means an enclosure designed to permit abrasive blasting, high pressure washing or a similar operation to be conducted safely inside the enclosure by a person who is outside the enclosure;

"Conform to" means meeting the requirements of, or acting in accordance with, a particular standard. Note: *You are able to "conform" to the referenced standard without necessarily being "certified to" the standard.*

"Certified to" means having been independently tested by an accredited certification organization as meeting the requirements of a particular standard and bearing a certification mark.

"Competent person" means a person who is

- a) qualified because of that person's knowledge, training and experience to do the assigned work in a manner that ensures the health and safety of every person in the workplace, and
- b) knowledgeable about the provisions of the Act and these regulations that apply to the assigned work, and about potential or actual danger to health or safety associated with the assigned work;

"De-energized" means disconnected from all energy sources and void of any residual or stored energy;

"Enclosure" means a temporary or permanent containment of a work area provided with exhaust ventilation and makeup air to reduce exposure of persons inside the enclosure and prevent the uncontrolled release of air contaminants from the enclosure;

"Energy-isolating device" means a mechanical device that physically prevents the transmission or release of energy, including, but not limited to, the following:

- a) a manually operated electrical circuit breaker;
- b) a disconnect switch;
- c) a manually operated switch by which the conductors of a circuit can be disconnected from all ungrounded supply conductors;
- d) a line valve;
- e) a block; and
- f) other devices used to block or isolate energy.

Note: *Push-button selector switches and other control-type devices are not energy-isolating devices.*

"Energy source" means any electrical, mechanical, hydraulic, pneumatic, chemical, radiation, thermal, gravitational or other potential source of energy;

"Electrical equipment" means any apparatus, appliance, device, instrument, fitting, fixture, luminaire machinery, material, or thing used in or for, or capable of being used in or for, the generation,

transformation, transmission, distribution, supply, or utilization of electric power or energy, and, without restricting the generality of the foregoing, includes any assemblage or combination of materials or things that is used, or is capable of being used or adapted, to serve or perform any particular purpose or function when connected to an electrical installation, notwithstanding that any of such materials or things may be mechanical, metallic, or non-electric in origin

“Electrical hazard” means a dangerous condition such that contact or equipment failure can result in electric shock, arc flash burn, thermal burn, or blast.

“Electrically safe work condition” means a state in which an electrical conductor or circuit part has been disconnected from energized parts, locked out in accordance with Part XX ([Control of Hazardous Energy](#)), tested to ensure the absence of voltage, and grounded (if grounding is determined to be necessary).

“Electrical safety watcher” means a person who is

- a) immediately available and in line of sight of the work activity;
- b) knowledgeable of the hazards involved with the task being performed;
- c) equipped with appropriate personal protective equipment to effect rescue;
- d) qualified in first aid;
- e) knowledgeable in the procedure to be used to acquire medical assistance; and
- f) trained and equipped in methods of release and rescue.

“Environmental Tobacco Smoke” (ETS) means the “aged” and diluted combination of both side-stream smoke (smoke from the lit end of a cigarette or other tobacco product) and Exhaled mainstream smoke (smoke that is exhaled by a smoker). ETS is commonly referred to as secondhand smoke. This definition includes emissions produced by an electronic smoking device.

“Equipment operator” means an employee who operates materials handling equipment.

“ETS-free Area” means an area where no smoking occurs that is separated from ETS areas according to the requirements of these Regulations.

“ETS area” means spaces where smoking is permitted, as well as those areas not separated from spaces where smoking is permitted in accordance with these Regulations.

“Guard” means a type of safeguard consisting of a physical barrier which prevents an employee from reaching over, under, around or through the barrier to a moving part or point of operation;

“Hazardous area” hazardous area is an area on the marine installation or structure where flammable mixtures are, or are likely to be, present in sufficient quantities and for sufficient periods of time such as to require special precautions to be taken in the selection, installation and use of machinery and electrical equipment.

“Hazardous energy” means any electrical, mechanical, hydraulic, pneumatic, chemical, radiation,

thermal, gravitational, or other energy that can harm personnel.

"High pressure washing" means the use of water or other liquid delivered from a pump at a pressure exceeding 34 MPa (5,000 psi), with or without the addition of solid particles, to remove unwanted matter from a surface or to penetrate the surface of a material for the purpose of cutting that material.

"Hot work" means any work that involves burning, welding, using fire- or spark-producing tools, or that produces a source of ignition.

"Lockout" means placement of a lockout device on an energy-isolating device in accordance with an established procedure.

"Limited approach boundary" means an approach limit at a distance from an exposed energized electrical conductor or circuit part within which a shock hazard exists.

"Lockout device" means a lockout instrument on an energy-isolating device in accordance with an established procedure.

"Materials handling area" means an area within which materials handling equipment or a load has the potential to create a hazard to any person.

"Materials handling equipment" means equipment used to transport, lift, move or position materials, personnel, goods or things and includes cranes and mobile equipment but does not include an elevator or manlift.

"Mobile equipment" means a wheeled or tracked vehicle which is engine or motor powered, together with attached or towed equipment, and includes a forklift, but does not include a vehicle operated on fixed rails or tracks.

"Qualified electrical person" means one who has demonstrated skills and knowledge related to the construction and operation of electrical equipment and installations and has received safety training to identify and manage the hazards involved.

"Restricted approach boundary" means an approach limit at a distance from an exposed energized electrical conductor or circuit part within which there is an increased likelihood of electric shock, due to electrical arc over combined with inadvertent movement, for personnel working in close proximity to the energized electrical conductor or circuit part..

"Safeguard" means the use of a guard, a safety device, a shield, an awareness barrier, warning signs, or other appropriate means, either singly or in combination, to provide effective protection to employees from hazards;

"Safe working load" means, with respect to materials handling equipment, the maximum load that the materials handling equipment is designed and constructed to handle or support safely, taking into account factors including waves, current, extremes of temperature, wind load and load sail area.

“Signaller” means a person instructed by an employer to direct, by means of visual or auditory signals, the safe movement and operation of materials handling equipment.

| | |
|---|--|
| | GENERAL REQUIREMENTS |
| 1 | <p>No person shall:</p> <ul style="list-style-type: none"> a) use any machinery, equipment or tools in a manner that may cause an undue hazard to the health or safety of a person, or which is in violation of these regulations; b) intentionally tamper or interfere with any piece of equipment, tool, machine, system, safeguard, guard, alarm or any other thing such that that the health and safety of any person in the workplace could be compromised; c) intentionally impair or render inoperative a safety device or system, unless permitted to do so by these regulations. |
| 2 | <p>Defective equipment, tools, machines, systems, safeguards, guards or any other thing used in the workplace shall not be used and shall either be:</p> <ul style="list-style-type: none"> a) put in good working order; or, b) taken out of service and identified in a manner that ensures that it is not inadvertently returned to service until it has been made safe for use. |

| | |
|---|--|
| | TOOLS AND MACHINERY |
| 3 | <p><u>General</u></p> <p>1) Tools, machinery, equipment and supplies must be</p> <ol style="list-style-type: none"> a) made of good quality material adequate for the work for which they are intended to be used; b) used only for their intended purpose; c) equipped with a device to ensure a secure hand grip where necessary <p>2) Tools, machinery and equipment, including guards, must be operated, maintained and repaired by a competent person.</p> |
| 4 | <p><u>Design, Construction, Operation and Use of Tools</u></p> <p>The exterior surface of any tool that is used in a hazardous area must be made of non-sparking material.</p> |
| 5 | <p>Tools and machinery used in the workplace must conform and be used in accordance with the requirements laid out in the applicable standard relevant to the tool or machinery:</p> <ol style="list-style-type: none"> a) CSA Standard C22.2 No. 60745-2, ULC Standard 60745-2 or International Electrotechnical Commission Standard 60745-2 for portable electric tools; b) ANSI A10.3, <i>Safety Requirements for Powder-Actuated Systems for all explosive actuated fastening tools</i>; c) CSA Standard Z432, <i>Safeguarding of Machinery</i>; d) CSA Standard Z142, <i>Code for the Power Press Operation: Health, Safety and Safeguarding Requirements for punch presses</i>; e) ANSI Standard B11.4 <i>American National Standard for Machine Tools -- Shears -- Safety Requirements for Construction, Care, and Use</i>; f) ANSI Standard B11.5 <i>American National Standard for Machine Tools -- Ironworkers -- Safety Requirements for Construction, Care, and Use</i>. |
| 6 | <p>All portable electric tools must be grounded, except if they</p> <ol style="list-style-type: none"> a) are powered by a self-contained battery; b) have a protective system of double insulation; or c) are used in a location when reliable grounding cannot be obtained if the tools are supplied from a double-insulated portable ground fault circuit interrupter of the class A type that conforms to CSA Standard C22.2 No. 144, <i>Ground Fault Circuit Interrupters</i>. |
| 7 | <p>All portable electric tools used in a hazardous area must be rated as appropriate for use or designed for use in such areas.</p> |

| | |
|---|--|
| 8 | If a hose is connected to an air-powered tool a safety restraining device must be attached to all hose connections. |
| 9 | <p data-bbox="261 312 553 338"><u>Instructions and Training</u></p> <ol data-bbox="261 386 1414 632" style="list-style-type: none"><li data-bbox="261 386 1414 453">1) If an employee is required to use a machine or tool, they must be instructed and trained by a competent person in all aspects of the machine or tool for which they are responsible.<li data-bbox="261 495 1414 632">2) Every employer must maintain a manual of operating instructions for each type of machinery and portable powered tools used by the employees and keep it readily available for examination by an employee who is required to use the tool or machine to which the manual applies. |

| | |
|----|--|
| 10 | <p><u>Machine and Equipment Guarding</u></p> <ol style="list-style-type: none"> 1) Every machine and equipment that has exposed moving, rotating, electrically charged or hot parts or that processes, transports or handles material that constitutes a hazard to an employee must be equipped with a guard that <ol style="list-style-type: none"> a) prevents the employee or any part of the employee-from coming into contact with the parts or material; b) prevents access by the employee to the area of exposure to the hazard during the operation of the machine; and c) if reasonably practicable, renders the machine inoperative if any part of the employee is in or near a part of the machine that is likely to cause injury. 2) To the extent that is reasonably practicable, a guard shall not be readily removable without the use of tools. 3) A guard must be so constructed, installed and maintained that it meets the requirements of subsection (1). 4) Machinery must be fitted with adequate safeguards that safely contain material ejected by the work process that could be hazardous to an employee. 5) Where there is a particular danger from: <ol style="list-style-type: none"> a) a wire rope that is in tension, a guard shall be installed and appropriate measures taken to protect any employee in the vicinity of the hazard b) other equipment that is in tension, appropriate measures shall be taken to protect any employee in the vicinity of the hazard 6) Where opening an access door or moving a guard exposes the moving parts of a machine or tool, the access door must be fitted with interlocks, where reasonably practicable, that: <ol style="list-style-type: none"> a) Prevents the access door from opening while the moving parts are in motion; or b) Disconnect the power from the driving mechanism, causing the moving parts to stop immediately if the door is open. 7) An employer shall ensure that adequate space is provided around a machine to ensure the safety of a person while the machine is being operated, cleaned, adjusted, repaired or otherwise maintained. |
| 11 | <p>Notwithstanding Section 10, where it is not reasonably practicable to install a guard, safeguards must be put in place to protect the employee from the hazard.</p> |

| | |
|----|--|
| 12 | <p><u>Use, Operation, Repair and Maintenance of Machine Guards</u></p> <ol style="list-style-type: none"> 1) If a guard is installed on a machine, a person must not use or operate the machine unless the guard is in its proper position, except to permit the removal of an injured person 2) Subject to subsection (3), where it is necessary to remove a guard in order to perform testing, cleaning, repair or maintenance work on the machine, it must be locked out and de-energized in accordance with a written lock out procedure. Upon completion, the guard shall be replaced and verified functioning properly before leaving the machine. 3) If it is not reasonably practicable to render the machine inoperative, the testing, cleaning, repair or maintenance work must be performed by a competent person and in accordance with established procedures and methods. |
| 13 | <p><u>Abrasive Wheels and Grinders</u></p> <ol style="list-style-type: none"> 1) Abrasive wheels must be inspected by a competent person for defects, cracks or other problems before their installation. 2) Abrasive wheels must be used only on machines that are equipped with machine guards, mounted between flanges and operated and maintained in accordance with the manufacturer's specifications. 3) A bench grinder must be equipped with a work rest or other device that prevents the work piece from jamming between the abrasive wheel and the wheel guard and that does not make contact with the abrasive wheel at any time. 4) A grinder must only be used with an abrasive wheel if the grinder is rated to provide a number of revolutions per minute that is no more than the rating of the abrasive wheel. |
| 14 | <p><u>Controls</u></p> <p>Machinery shall have:</p> <ol style="list-style-type: none"> a) starting and stopping controls located within easy reach of the operator; b) controls and switches clearly identified to indicate the functions that they serve; c) controls positioned, designed or shielded to prevent inadvertent activation. |

| | |
|----|--|
| 15 | <p data-bbox="256 197 792 226"><u>Abrasive Blasting and High Pressure Washing</u></p> <ol data-bbox="256 268 1438 1423" style="list-style-type: none"><li data-bbox="256 268 1438 373">1) An employer shall ensure that a risk assessment is completed and identified control measures put in place before any abrasive blasting, high pressure washing process or related cleanup is started which may cause release of a harmful level of an air contaminant<li data-bbox="256 415 1438 489">2) Written safe work procedures must be developed and followed for any abrasive blasting, high pressure washing or a similar operation<li data-bbox="256 531 1438 636">3) Where abrasive blasting, high pressure washing or similar operation is conducted outside a structure, the process shall be restricted to a work zone which is identified by warning signs or similar means as a contaminated area.<li data-bbox="256 678 1438 783">4) Only employees who are necessary to perform the work shall be permitted inside an enclosure or a restricted work zone where abrasive blasting, high pressure washing or a similar operation is conducted.<li data-bbox="256 825 1438 1056">5) The operating controls for a high pressure washing or abrasive blasting machine shall be<ol data-bbox="402 867 1438 1056" style="list-style-type: none"><li data-bbox="402 867 1438 940">a) located near the nozzle in a position where the operator's hands are when using the device;<li data-bbox="402 940 1438 1014">b) a continuous pressure type that immediately stops the flow of material when released; and<li data-bbox="402 1014 1438 1056">c) protected from inadvertent activation.<li data-bbox="256 1098 1438 1161">6) Where hand operated controls are impracticable, subsection (5)(a) does not apply and an operator shall use a foot operated control or equivalent safety device.<li data-bbox="256 1203 1438 1276">7) High pressure hoses, pipes, and fittings shall be fitted with a safety restraining device to prevent excessive sway and movement.<li data-bbox="256 1318 1438 1423">8) Except where the process is isolated from the operator in a separate cabinet, suitable respiratory protective equipment shall be provided and worn whenever abrasive blasting, or a similar operation is conducted. |
|----|--|

| | |
|----|--|
| | HOT WORK |
| 16 | All hot work activities shall require a Work Permit in accordance with Part XX (<i>Permit to Work – previously included in Phase 1 policy intent</i>). |
| 17 | The risk assessment undertaken as part of the Permit to Work process must consider, at minimum: <ul style="list-style-type: none"> a) Location of the activity, in particular, relative to any identified hazardous areas b) Presence of any flammable, explosive or combustible material. c) Presence of any material that would produce toxic or flammable vapours d) The tools and equipment to be used in the work e) Necessary Personal protective equipment; f) Information and training necessary for all persons involved in the hot work activity g) Environmental and operating conditions or limitations. |
| 18 | Written safe work procedures must be developed and implemented for all hot work activity. |
| 19 | Welding, cutting and allied process activities must conform to CSA W117 <i>Safety in Welding, Cutting and Allied Processes</i> . |
| 20 | An employer shall ensure that an employee does not perform hot work unless all of the following conditions are satisfied: <ul style="list-style-type: none"> a) In the case of an explosive or flammable gas vapour, the atmospheric concentration is less than 5% of the lower explosive limit, as determined by an appropriate gas detection device, b) Oxygen concentrations are in less than 22.5% c) The atmosphere is continuously monitored for flammable substances and toxic gases if there is a risk of it being present in the area d) all potential sources of flammable and explosive gases are identified and blinded and locked out, e) a competent person patrols and maintains a fire watch until all fire hazards have passed, f) fire fighting equipment appropriate to the potential loss exposure is provided; g) A coating on metal which could emit harmful contaminants, including lead, chromium, organic materials, or toxic combustion products shall be removed from the base metal, whenever practicable, before welding or cutting. |
| 21 | Prior to undertaking any hot work activity, the area and adjacent areas that may be affected must be cleaned, inspected and tested to ensure no combustible, flammable or explosive materials, dust, gas, vapour or residue, or other material that could produce a toxic or flammable vapour when heated, exists. |

| | |
|----|---|
| 22 | <p>Where hot work uses gas:</p> <ul style="list-style-type: none"> a) the regulators and associated flexible connecting hoses must be tested immediately after it is connected to a gas cylinder to ensure that there is no leak of a gas supply. b) No person shall perform a test required in (1) with a substance that is oil, fat or grease based. c) A person must be stationed appropriately in order to action an emergency shut-off, if required. d) Where a leak of the gas supply develops during the performance of hot work using gas <ul style="list-style-type: none"> i. the gas supply shall be immediately cut off; and ii. The work shall not be resumed until the leak is repaired and tested to verify the repair was successful. |
| 23 | <p>Where hot work uses gas,</p> <ul style="list-style-type: none"> a) The employee shall: <ul style="list-style-type: none"> i. ensure that parts are free from defects, leaks or oil and grease; and, ii. be provided with flashback arrestors at the regulators and the torch, that: <ul style="list-style-type: none"> 1. prevents the reverse flow of fuel, gas, oxygen or air from the torch to the supply lines, and 2. stops a flame from burning back from a torch into the supply lines; b) The hose lines or pipelines for conveying the gases to the burner and couplings must be legibly marked or identified to ensure the hoses are not interchanged; and c) The torch must be ignited by a device that is designed for that purpose. d) only standard fittings, designed and manufactured for the specific compressed gas service shall be used e) A regulator or an automatic reducing valve of welding equipment shall only be used for the gas for which it was designed; and f) any charged gas cylinders shall be protected from a source of heat in excess of 54° Celsius. |
| 24 | <p>Cylinders, piping and fittings of compressed and liquefied-gas systems shall be located or protected in a manner that prevents physical damage to them.</p> |
| 25 | <p>Hot metal parts and electrode stubs shall be disposed of appropriately to dissipate heat and minimize potential for fire and ignition.</p> |

| | |
|----|---|
| | BOILERS AND PRESSURE VESSELS |
| 26 | Boilers and pressure vessels location on a marine installation or structure shall comply with the requirements outlined in Section 7.3 of the Framework Regulations (<i>see Framework Regulations Phase 3 draft policy intent</i>). |

| | |
|----|---|
| | ELEVATORS AND MANLIFTS |
| 27 | <p><u>Standards</u></p> <p>1) The design, installation, use, operation, maintenance and inspection of any elevator must conform to ASME A17.1/CSA B44, <i>Safety Code for Elevators and Escalators</i>; or</p> <p>2) The design, installation, use, operation, maintenance and inspection of any manlift must, conform to CSA Standard B311, <i>Safety Code for Manlifts</i>.</p> |
| 28 | <p><u>Use and Operation</u></p> <p>1) An elevator or manlift must only be used when loads are within the limits in which it was designed and installed to move safely.</p> <p>2) Where an elevator or manlift is installed on a floating marine installation or structure, the elevator or manlift shall not be used or placed in service when the movement of the marine installation or structure exceeds the maximum movement recommended by the manufacturer for the safe operation of the elevator or manlift.</p> |
| 29 | <p><u>Inspection, Testing, Maintenance and Repair</u></p> <p>1) Every elevator, and manlift must be inspected, and tested by a competent person to determine that the standards are met</p> <ul style="list-style-type: none"> a) before the elevator-or manlift is placed in service; b) after an alteration to the elevator or manlift; and c) once every 12 months or per manufacturers specifications. <p>2) A record of each inspection, test and maintenance performed must:</p> <ul style="list-style-type: none"> a) be signed by the person who made the inspection, test or conducted the maintenance; b) include the date of the inspection, test or maintenance and the identification and location of the elevator or manlift; and c) set out the observations of the competent person inspecting, testing or performing maintenance on the elevator and manlift on the safety of the devices. <p>3) Capacity of the elevator and the Certificate of inspection, displaying date of inspection expiry, must be posted in elevators.</p> <p>4) Records of inspection, maintenance and testing must be retained in accordance with Section XX (<i>Record retention schedule - to be included in Phase 3</i>)</p> |

| | |
|----|--|
| | MATERIALS HANDLING |
| 30 | <p>Safe Lifting Program</p> <p>The Employer shall develop a Safe Lifting Program, as part of the broader OHS program, that establishes safe processes with respect to the key factors that impact safe lifting operations, including marine personnel transfers, including, but not limited to the following:</p> <ul style="list-style-type: none"> a) a list of potential hazards of the work and their associated risks; b) organization, planning and performance of lifting operations, including routine and non-routine lifts; c) operational and environmental limits, such as wind, sea state, pitch, heave, roll and temperature; d) maintenance, including repairs, and inspection of lifting equipment, fixed pad eyes and loose lifting gear; e) training and competency required for people performing the work; f) a method for communicating the safe-lifting program to any person who may be affected by the program; and g) management of contractors and third-party equipment owners. |
| 31 | <p>Training</p> <ul style="list-style-type: none"> 1) Every materials handling equipment operator must be instructed and trained in the safe and proper use of the materials handling equipment in accordance with any instructions provided by the manufacturer and the applicable standard and taking into account the conditions of the work place in which the equipment operator will operate the materials handling equipment. 2) Training records must be retained in accordance with Section XX (<i>Record retention schedule to be included in Phase 3</i>) |
| 32 | <p>Work Permits</p> <p>A permit to work, in accordance with Part XX (<i>Permit to Work- previously included in Phase 1 policy intent</i>), is required for:</p> <ul style="list-style-type: none"> a) all lifts, except those classified as routine; and b) all lifts involving personnel transfer. |

| | |
|----|---|
| 33 | <p>Lifting and Positioning Personnel</p> <p>1) Materials handling equipment must not be used for hoisting or positioning a person, unless the equipment is equipped with a platform, bucket, basket or other device that is designed and certified for that purpose and is provided with a fail-safe control system that will prevent a free fall of the load that is carried.</p> <p>2) The use of materials handling equipment to undertake personnel transfers must be carried out in accordance with Part XX (Personnel Transfer)</p> |
| 34 | <p><u>Procedures</u></p> <p>The employer must establish safe procedures for the lifting and positioning of personnel using materials handling equipment that include, at minimum, the following:</p> <ul style="list-style-type: none"> a) the use of personal protection devices, protective clothing or other personal protection equipment by the person being lifted or positioning; b) the inspection and testing of the equipment to ensure that it is in safe condition; c) limiting the weight to no more than the safe working load ; d) availability of fast rescue crafts for work over the water; e) identify training requirements of each individual assigned to plan, manage, participate in and supervise the personnel lifting or positioning operation; and, F) necessary communications required to be able to safely carry out the operation. |
| | <p>Design, Installation and Protection of Materials Handling Equipment and Areas</p> |
| 35 | <p><u>Standards</u></p> <p>1) The design, construction and installation of offshore cranes must be certified to either:</p> <ul style="list-style-type: none"> a) API Spec 2C <i>Specification for Offshore Cranes</i>; b) EN 13852-1 <i>Cranes, Offshore Cranes, Part 1—General Purpose Offshore Cranes</i>; c) DNV GL Standards for Certification – <i>Lifting Appliances</i>; or d) Lloyd’s Register <i>Code for Lifting Appliances in a Marine Environment</i>. <p>2) The use, maintenance, inspection and operation of offshore cranes must conform to either:</p> <ul style="list-style-type: none"> a) API Standard API RP 2D, <i>API Recommended Practice for Operation and Maintenance of Offshore Cranes</i> ; or b) EN 13852-1 <i>Cranes, Offshore Cranes, Part 1—General Purpose Offshore Cranes</i>. |

| | |
|----|--|
| 36 | <p>The design, construction, use, maintenance, inspection and operation of:</p> <ul style="list-style-type: none"> a) overhead and gantry cranes must conform to <i>CSA B167 Overhead travelling cranes - Design, inspection, testing, maintenance, and safe operation</i>; b) draw works and associated equipment must be certified to API Standard API RP 8B, <i>Inspections, Maintenance, Repair and Remanufacture of Hoisting Equipment</i>; c) conveyors, cableways or other similar materials handling equipment must conform to ASME Standard ANSI/ASME B20.1, <i>Safety Standards for Conveyors and Related Equipment</i>; d) forklifts must conform to either: <ul style="list-style-type: none"> i. <i>CSA B335 Safety Standard for Lift Trucks</i>; or ii. <i>ANSI standard B 56.1 Safety Standard for Powered Industrial Trucks</i> |
| 37 | <ul style="list-style-type: none"> 1) Notwithstanding subsection 36(d), forklifts must be equipped with seat belts, a rear-view mirror, an audible warning device, operating and warning lights. 2) Mobile equipment used on marine installations and structures involved in drilling and production must: <ul style="list-style-type: none"> a) must be rated for operation in a hazardous environment; and b) if equipped with an internal combustion engine, have appropriate automatic shutdowns in place to prevent it from being a source of ignition. |
| 38 | <ul style="list-style-type: none"> 1) Materials handling equipment must, to the extent that is reasonably practicable, be designed and constructed so that if there is a failure of any part of the materials handling equipment, it will not result in loss of control of the materials handling equipment or create a hazardous condition. 2) Critical and hazardous equipment must be guarded against impact from materials handling equipment. |
| 39 | <p><u>Safeguarding of Materials Handling Equipment</u></p> <p>Any materials handling equipment must be so designed, constructed and operated that the equipment operator and all other employees are protected from injury by means of adequate safeguards.</p> |

| | |
|----|---|
| 40 | <p><u>Means of Entering and Exiting</u></p> <p>1) Materials handling equipment must have a safe means of entering and exiting</p> <ol style="list-style-type: none"> a) the work area of the equipment operator; b) any other place on the equipment to which an employee requires regular access. <p>2) A safe means referred to in subsection (1) shall take into account:</p> <ol style="list-style-type: none"> a) the average employee's body dimensions while wearing personal protective equipment and shall not require the employee to jump from the materials handling equipment; and b) emergency evacuation and rescue |
| 41 | <p><u>Operating Compartment</u></p> <p>The equipment within an operator`s compartment must provide adequate adjustability of range to accommodate the equipment operator for the work that is required to be done.</p> |
| 42 | <p><u>Controls</u></p> <p>1) The arrangement and design of dial displays and the controls and general layout and design of the equipment operator`s compartment or position on all materials handling equipment must not hinder or prevent the equipment operator from safely operating the materials handling equipment and shall, where reasonably practicable, maximize its equipment operator's ability to collect, comprehend and process information necessary for the safe use of the equipment.</p> <p>2) Controls that are not operated from a cab shall be located to provide a safe distance between the equipment operator and the load being lifted.</p> <p>3) A pendant control for materials handling equipment shall be supported independently from its electrical conductors.</p> |
| 43 | <p><u>Control Systems</u></p> <p>All materials handling equipment must be fitted with braking, steering and other control systems that</p> <ol style="list-style-type: none"> a) are capable of safely controlling and stopping the movement of the materials handling equipment and any hoist, bucket or other part of the equipment; and b) respond reliably and quickly to moderate effort on the part of the equipment operator. |
| 44 | <p><u>Fire Protection</u></p> <p>Materials handling equipment must have adequate fire protection equipment for the hazard and any manual fire protection equipment installed must be readily accessible to the equipment operator while the operator is in the operating position.</p> |

| | |
|----|---|
| 45 | <p><u>Vibration</u></p> <p>All materials handling equipment must be so designed and constructed that the equipment operator will not be injured or the equipment operator's control of the materials handling equipment impaired by any vibration, jolting or other uneven movement of the materials handling equipment.</p> |
| 46 | <p><u>Fuel Containers</u></p> <p>If a fuel tank, compressed gas cylinder or similar container contains a hazardous substance and is mounted on materials handling equipment, it must be</p> <ul style="list-style-type: none"> a) located or protected so that under all conditions it is not hazardous to the health or safety of an employee who is required to operate or ride on the materials handling equipment; and b) connected to fuel overflow and vent pipes that are so located that fuel spills and vapours cannot be <ul style="list-style-type: none"> i. ignited by hot exhaust pipes or other hot or sparking parts, or ii. hazardous to the health or safety of any employee who is required to operate or ride in the materials handling equipment, and c) labelled on its servicing caps or covers as to its contents. |
| 47 | <p><u>Protection from Falling, Flying or Shifting Objects</u></p> <ol style="list-style-type: none"> 1) If the circumstances under which materials handling equipment is used presents a risk that the equipment operator may be struck by an intruding, falling, flying object or shifting load, the employer must equip the materials handling equipment with a protective structure of a design, construction and strength that it will, under all foreseeable conditions, prevent the penetration of the object or load into the area occupied by the equipment operator. 2) A protective structure referred to in subsection (1) must be constructed from non-combustible or fire-resistant material and designed to permit quick exit from the materials handling equipment in an emergency. 3) If, during the operation of materials handling equipment, the load will pass over the equipment operator's position, the equipment operator must not occupy the materials handling equipment unless it is equipped with a protective structure referred to in subsection 2 (above). 4) Glass in doors, windows and other parts of materials handling equipment must be of a type that will not shatter into sharp or dangerous pieces on impact. 5) If glass presents a hazard, including interference with visibility, the materials handling equipment must not be used. |

| | |
|----|--|
| 48 | <p><u>Protection from Environmental Conditions</u></p> <p>Materials handling equipment that is regularly used outdoors must be fitted with a roof or other structure that will protect the equipment operator from exposure to any environmental condition that is likely to be hazardous to the equipment operator’s health or safety.</p> |
| 49 | <p><u>Additional Protection - Mobile Equipment</u></p> <ol style="list-style-type: none"> 1) Guards must be installed on the deck of every marine installation and structure and all elevated working areas on which mobile equipment is used to prevent the equipment from falling over the sides of the deck or area. 2) At blind corners, mirrors must be installed that permit an equipment operator to see a person or mobile equipment approaching the blind corner. |
| 50 | <p><u>INSPECTION, TESTING, MAINTENANCE, CERTIFICATION AND REPAIR</u></p> <ol style="list-style-type: none"> 1) Before materials handling equipment is placed in service, a competent person shall inspect, proof test and certify in writing its rated capacity in accordance with criteria established by the manufacturer or applicable design or safety standard where <ol style="list-style-type: none"> a) the equipment is new; b) the rated capacity of the equipment cannot be determined; c) the continued safe use of the equipment cannot be assured due to its age or history; d) repairs or modifications have been made to load carrying components; e) modifications have been made which affect the rated capacity; f) the materials handling equipment has been in contact with an electric arc or current 2) Repair, maintenance or cleaning work must not be performed on any materials handling equipment while the materials handling equipment is being operated, unless: <ol style="list-style-type: none"> a) the equipment is adequately isolated or safeguarded to protect the safety of the employee performing the repair, maintenance or cleaning work, and b) where continued operation is essential to the repair, maintenance or cleaning 3) A report of each inspection, test or maintenance work must be completed and must: <ol style="list-style-type: none"> a) include the date of the inspection, test maintenance or repair performed; b) identify the materials handling equipment that was inspected, tested maintained or repaired; and c) set out the safety observations of the person inspecting, testing maintaining or repairing the materials handling equipment, including safe working load of the materials handling equipment. 4) Reports must be retained in accordance with Section XX (<i>record retention schedule – to be included in Phase 3</i>) |

| | |
|----|---|
| | Operation |
| 51 | <p><u>General Operation</u></p> <p>Any employee that is required to operate materials handling equipment or use loose lifting gear must be a competent person.</p> |
| 52 | <p>If tools, tool boxes or spare parts are carried on materials handling equipment, they must be securely stored.</p> |
| 53 | <p><u>Materials Handling Area</u></p> <ol style="list-style-type: none"> 1) No person is permitted to enter a materials handling area while operations are in progress unless that person are essential to the conduct, supervision or safety of the operations. 2) The main approaches to any materials handling area must be posted with (universally recognized) warning signs and secured to avoid inadvertent access of unauthorized persons. 3) If any person other than those referred to in subsection (1) enters a materials handling area while operations are in progress, the operations in that area must be immediately discontinued and the equipment operator shall not resume work until the area of cleared of unauthorized persons. |
| 54 | <ol style="list-style-type: none"> 1) Any person operating materials handling equipment must <ol style="list-style-type: none"> a) have a clear and unobstructed view of the area in which the equipment is being operated; or b) be directed by a signaller. 2) Where the signaller in (1) has an obstructed view, a second signaller that has an unobstructed view of the area must be utilized. 3) A person must not leave materials handling equipment unattended unless the equipment has been properly secured to prevent it from moving. |

| | |
|----|--|
| 55 | <p><u>Signals</u></p> <ol style="list-style-type: none"> 1) A code of hand and communication signals for the purposes of section 54(1)(b) must be established prior to lifting operations and <ol style="list-style-type: none"> a) every signaller and equipment operator must be instructed in the use of the code; b) a copy of the code must be kept in a place where it is readily available for examination by the signallers, equipment operators and other employees, and c) all personnel involved in lifting operations on offshore installations, supply vessels and shore bases must know the hand signal for "emergency stop". 2) The employer must designate a competent person as the signaller. 3) A signaller must not perform duties other than signaling while any materials handling equipment under the signaller's direction is in motion. 4) A signal to stop given in an emergency by any person granted access to the work place shall be obeyed by an equipment operator. 5) Where any movement of materials handling equipment that is directed by a signaller poses a risk to the safety of any person, the signaller shall not give the signal to move until that person is warned of, and protected from, the risk. 6) Where the equipment operator of any materials handling equipment does not understand a signal, the equipment operator shall consider that signal to be a stop signal. |
| 56 | <p><u>Signalling Device</u></p> <ol style="list-style-type: none"> 1) Subject to subsection (2), if it is not reasonably practicable for a signaller to use visual signals, a telephone, radio or other signalling device must be provided by the employer for the use of the signaller 2) If in use, two-way radio systems shall operate on a dedicated radio channel. |

| | |
|----|--|
| 57 | <p><u>Safe Working Loads</u></p> <ol style="list-style-type: none"> 1) Materials handling equipment must not be used or operated with a load that is in excess of its safe working load, unless it is for the purpose of testing and inspection. 2) The safe working load of materials handling equipment must be clearly marked on the equipment or on a label securely attached to a permanent part of the equipment in a position where the mark or label can be easily read by the equipment operator. 3) The safe working load of fixed pad eyes and other fixed lifting points must be clearly marked on the equipment or on a label securely attached to a permanent part of the equipment in a position where the mark or label can be easily read by the equipment operator |
| 58 | <p><u>Positioning the Load</u></p> <ol style="list-style-type: none"> 1) Where materials handling equipment is travelling with a raised or suspended load, its equipment operator shall ensure that the load is carried as close to the deck or floor as the situation permits and shall not in any case transport the load at or beyond the point at which the loaded equipment becomes unstable. 2) Any load that has been assessed as a risk to slide on or fall from materials handling equipment resulting in a hazardous condition shall be secured to prevent such movement. 3) Before a load is raised by materials handling equipment, the load must be inspected by a competent person to ensure it is secured to the hoist in an adequate manner by means of appropriate loose lifting gear. 4) A load on a crane or hoist shall be safely landed and supported, before being unhooked. 5) Tag lines or similar devices must be used to control any swinging of a load that is being lifted by a crane except when the use of the lines may be hazardous to the safety of any person. 6) Loads must not be left hanging by a crane unless the crane operator is at the controls of the crane. 7) A unitized load transported on a forklift shall not project a distance greater than half its height above the fork carriage, back rest or back rest extension of the forklift. 8) No part of a load comprised of loose objects may project above the fork carriage, back rest or back extension of a forklift. |

| | |
|----|---|
| 59 | <p><u>Contact with Hazards</u></p> <ol style="list-style-type: none"> 1) Subject to subsection (2), materials handling equipment must not be operated in an area in which it may come into contact with an electrical cable, any pipe or other supply line, part of a structure or other hazard known to the employer, unless the equipment operator and signaller, if applicable, have been <ol style="list-style-type: none"> a) warned of the presence of the hazard; b) informed of the location of the hazard; and c) informed of the safety clearance that must be maintained with respect to the hazard in order to avoid accidental contact with it. 2) If an employer is unable to determine with reasonable certainty the location of the hazard or the safety clearance referred to in subsection (1), every electrical cable must be de-energized and every pipeline containing a hazardous substance must be shut down and drained before any operation involving the use of materials handling equipment commences within the area. |
| 60 | <p><u>Crane Operation</u></p> <ol style="list-style-type: none"> 1) A crane must not be operated under conditions that are likely to create a hazard to any person, ship, aircraft, vehicle, load or structure or to the stability of the crane. 2) A person must not move a crane in the vicinity of a helicopter deck when a helicopter is landing or taking off. 3) An equipment operator of a crane or hoist shall not attempt to move a load where they have reason to doubt that the load can be safely handled. |

| | |
|----|---|
| 61 | <p>1) Every crane must</p> <ul style="list-style-type: none"> a) have posted inside the crane control cab load capacity charts that specify the boom angle and safe working load for each block and for each operating mode (static, dynamic and personnel lifting), as required; b) have posted inside the crane control cab approved laydown areas and restricted areas, if any and c) be equipped with <ul style="list-style-type: none"> i. boom and block travel limiting devices, ii. a load measuring device that has been calibrated, at minimum, according to manufacturers' specifications, iii. a device to indicate the boom angle where the rated capacity is affected by the boom angle, and iv. a device to indicate the boom extension or load radius where the rated capacity of the equipment is affected by boom extension or load radius. <p>2) All crane hooks must be equipped with safety latches designed to prevent a load from falling out of the hook under all operating conditions.</p> <p>3) A running line sheave on a crane or hoist shall be equipped with a device to retain the rope in the sheave groove.</p> <p>4) An electrically powered crane shall have a means for the equipment operator to safely interrupt the main electric circuit under a load condition.</p> |
| 62 | <p>A bridge, gantry, or overhead travelling crane operated by a pendant or remote control shall have markings on the crane structure or building, visible to the equipment operator, clearly indicating the direction of hook, bridge and trolley motions compatible with those marked on the controls.</p> |
| 63 | <p><u>Operation of Manually Powered Hoists</u></p> <ul style="list-style-type: none"> 1) A hand-operated hoist shall be provided with a ratchet and pawl, load brake or other mechanism which shall hold the load at a desired height. 2) A crank-operated winch that is not fitted with automatic load brakes shall be provided with a means of preventing the crank-handle from slipping off the crank-shaft while hoisting. 3) A crank handle shall be removed from the crank shaft before the load is lowered on the winches referred to in subsection (2). 4) Subsections (2) and (3) do not apply where a crank handle has been replaced by permanently secured hand wheels. |

| Loose Lifting Gear and Pad Eyes | |
|--|--|
| 64 | <p>1) The design, construction, inspection, testing, maintenance and use of any loose lifting gear must conform to the following standards, as applicable, to the type of equipment being used.</p> <ul style="list-style-type: none"> a) ASME B30.9 – <i>Slings</i> b) ASME B30.10 – <i>Hooks</i> c) ASME B30.20 – <i>Below the Hook Lifting Devices</i> d) ASME B30.26 – <i>Rigging Hardware</i> <p>2) Employer must be able to produce documentation attesting to the certification of the loose lifting gear to the standard used.</p> |
| 65 | Loose lifting gear and pad eyes shall be legibly marked with the manufacturer's identification, product identifier and the safe working load |
| 66 | <p>1) An identification system for the inspection of loose lifting gear and pad eyes must be established and maintained</p> <p>2) Inspections of loose lifting gear and pad eyes shall be conducted by a competent third party at least every six months.</p> |
| 67 | When wire rope clips are used in loose lifting gear, only drop forged (galvanized) wire rope clips are permitted to be used. |
| 68 | <p>Unless specifically designed to be side-loaded:</p> <ul style="list-style-type: none"> a) the hook or load block of a crane or hoist shall be positioned over the load to prevent side-loading of the crane when the load is hoisted; b) any self-locking eye hooks that has been side-loaded shall be removed from service, and not reintroduced until it has been inspected by a competent person and deemed to be fit for use. |
| 69 | <p>1) Self-locking eye hooks shall not be used for hoisting personnel.</p> <p>2) Self-locking eye hooks used for other applications must have weld on trigger guards.</p> |
| 70 | Loose lifting gear shall be stored as to prevent damage when not in use. |

| | |
|----|---|
| 71 | <p>Manual Handling of Materials</p> <p>If, because of the weight, size, shape, toxicity or other characteristic of materials, goods or things, the manual handling of the materials, goods or things may be hazardous to the health or safety of an employee, the employer must issue instructions that the materials, goods or things must, if reasonably practicable, not be handled manually.</p> |
| 72 | <p>Storage of Materials</p> <ol style="list-style-type: none">1) All materials, goods and things must be stored and placed in such a manner that the maximum safe load-carrying capacity of the floor or other supporting structures is not exceeded and arranged in such a manner that it is stable.2) Materials, goods or things must not be stored or placed in a manner that may<ol style="list-style-type: none">a) obstruct or encroach on passageways, or exits;b) impede the safe operation of materials handling equipment;c) obstruct the ready access to or the use and operation of firefighting, first aid and other emergency equipment;d) interfere with the operation of fixed fire protection equipment;e) be hazardous to the health or safety of any employee; orf) Obstruct electrical panels, ventilation and illumination.3) Cylindrical objects transported on their sides shall be effectively restrained against inadvertent movement. |

| | |
|----|--|
| | PERSONNEL TRANSFER |
| 73 | This Part does not apply to personnel transportation by helicopter or vessel to/from/in-between a marine installation or structure. |
| 74 | Prior to transferring an employee, the employer must carry out a risk assessment and ensure all risk associated with the transfer is mitigated appropriately. |
| 75 | All personnel transfers require a work permit in accordance with Part XX (<i>Permit to Work – included in Phase 1 policy intent</i>). Notwithstanding the above, a work permit is not required for personnel transfer by fixed bridge between fixed (non-floating) marine installations or structures. |
| 76 | <u>Procedures</u> The employer must establish and implement safe procedures for the transfer of personnel that include, at minimum, the following: <ul style="list-style-type: none"> a) communication between both points of transfer; b) the use of personal protection devices, protective clothing or other personal protection equipment by the person being transferred; c) the inspection and testing of the equipment to ensure that it is in safe condition; d) limiting the weight transferred to no more than the safe working load ; e) availability of fast rescue crafts f) identify training requirements of each individual assigned to plan, manage, participate in and supervise the personnel transfer operation, and g) the prohibition of the transfer of freight in personnel transfer equipment, except in an emergency. |
| 77 | Any person involved in the transfer, including the person to be transferred, must be instructed in: <ul style="list-style-type: none"> a) the respective procedures for their role in the transfer, and b) the use of the personnel transfer equipment |

| | |
|----|---|
| 78 | <p><u>Standards</u></p> <p>1) Every personnel transfer equipment and every safety device attached to it must be certified to the rules or codes of a recognized classification society.</p> <p>2) The personnel transfer apparatus shall be fabricated using corrosion-resistant material suitable for use in a marine environment and take into consideration the environmental conditions in the operating area (e.g. temperature, wind, sea state, etc)</p> <p>3) The personnel transfer equipment must:</p> <ul style="list-style-type: none"> a) be made of a non-collapsible construction or assembled to a non-collapsible construction b) protect personnel from injury caused by landing impact and falling, c) allow personnel to ride securely on the inside either standing or seated; d) be adequate size to accommodate a medical stretcher and one other person, e) be labelled with the maximum capacity of weight it is designed to safely carry f) be buoyant, where applicable <p>4) A secondary safety device must be installed above the load block and the upper master link of the link assembly to ensure that there is redundancy in the event of a failure.</p> <p>5) If a workplace is designed and certified to undertake personnel transfers, it must be equipped with at least two means of personnel transfer.</p> |
| 79 | <p><u>Transfer</u></p> <p>1) Every transfer of a person must be made only when visibility and environmental conditions are such that the transfer can be made safely.</p> <p>2) Where personnel transfer is carried out using a crane:</p> <ul style="list-style-type: none"> a) the crane operator and banksman shall have a clear view of the loading and landing area b) the deck shall be clear of all cargo in loading and landing area c) Load hooks in the load path shall be capable of being locked and pinned to ensure the connecting shackle will not dislodge from the hook under any load; d) the raising or lowering of a personnel transfer equipment must, to the extent reasonably possible, be carried out over water. |
| 80 | <p>Fast rescue craft and crew must be nearby and prepared to launch for all personnel transfer other than where personnel transfer is by fixed bridge between fixed (non-floating) marine installations or structures.</p> |

| | |
|----|---|
| 81 | <p><u>Inspection and Testing</u></p> <p>Personnel transfer equipment and every safety device attached to it must be inspected and tested by a competent person:</p> <ul style="list-style-type: none"> a) before the personnel transfer equipment or the safety device attached to it is placed in service; b) after an alteration to the personnel transfer equipment or a safety device attached to it; and c) once every six months |
| 82 | <ul style="list-style-type: none"> 1) A record of each inspection, test or servicing made must <ul style="list-style-type: none"> a) be signed by the competent person who made the inspection and test or conducted the servicing; b) include the date of the inspection, test or servicing the identification and location of the personnel transfer equipment and safety device that were inspected, tested or servicing; and c) set out the observations of the competent person , inspecting, testing and servicing the personnel transfer apparatus and safety device on the safety of the devices. 2) Every record must be retained in accordance with Section XX (<i>Record retention schedule – to be included in Phase 3</i>) |
| 83 | <p><u>Repair and Maintenance</u></p> <p>Repair and maintenance of personnel transfer apparatus and safety devices attached to them must be performed by a competent person.</p> |

FUELLING

- | | |
|----|---|
| 84 | <ol style="list-style-type: none">1) If any equipment is fuelled in a workplace, the fuelling must be done in accordance with the instructions given by the employer in a place where the vapours from the fuel are readily dissipated.2) Subject to subsection (3) and unless otherwise designed to allowed for it, an employee shall not fuel any equipment<ol style="list-style-type: none">a) in the hold of a vessel;b) if the engine of the equipment is running; orc) if there is any source of ignition in the vicinity of the equipment.3) Equipment may be fuelled in the hold or an enclosed space of a vessel if<ol style="list-style-type: none">a) one employee is in the hold or space with a suitable fire extinguisher ready for use;b) only those employees engaged in the fuelling and the employee referred to in subsection (a) are in the hold or space;c) only the minimum quantity of fuel needed to fill the fuel tank of the equipment is taken into the hold or space at one time;d) if the fuel is liquefied gas, the equipment is fuelled only by the replacement of spent cylinders; ande) fuel is not transferred into containers other than the fuel tank of the equipment. |
|----|---|

| | |
|----|--|
| | ELECTRICAL SAFETY |
| | <i>“Qualified electrical person”</i> means one who has demonstrated skills and knowledge related to the construction and operation of electrical equipment and installations and has received safety training to identify and manage the hazards involved. |
| 85 | <p><u>Electrical Safety Program</u></p> <ol style="list-style-type: none"> 1) An electrical safety program shall be developed and implemented, as part of the Employer’s OHS management program, which directs activity appropriate to the risk associated with electrical hazards. 2) Electrical safety program shall, at minimum, address the following principles: <ol style="list-style-type: none"> a) hazard identification and risk assessment; b) assignment of duties and responsibilities; c) inspecting and evaluating the electrical equipment; d) maintaining the electrical equipment’s insulation and enclosure integrity; e) planning every job and document first-time procedures; f) de-energizing if possible; g) reasonably foreseeable unplanned events; h) identifying hazardous areas in which an explosive atmosphere may occur; i) identifying the electrical hazards and arc flash hazards, and reducing associated risk; j) protecting the employee from shock, burn, blast, and other hazards due to the working environment; k) necessary protective equipment and devices; l) using the right tools for the job; m) assessing people’s abilities and necessary training appropriate for the activity; n) Procedures for multiple power systems, where applicable; o) emergency procedures training and equipment; p) auditing the principles specified within the program; q) Approach boundaries appropriate to the electrical design and installation of the given workplace; r) Safe work procedures for testing electrical equipment and circuits; and s) the number of competent employees present while work is being performed. |
| 86 | Hazardous areas identified in 85(2)(h) shall be classified according to a comprehensive and documented classification system including design and selection of systems and equipment to manage ignition sources and prevent fire and explosion. |

| | |
|----|---|
| 87 | <p>1) The employer shall ensure that a competent person</p> <ul style="list-style-type: none"> a) creates and maintains electrical drawings that includes line diagrams that describes the position and the ratings of the components of the electrical installation; and b) updates the electrical drawings to reflect all repairs or alterations to the electrical system <p>2) The electrical drawings shall be readily accessible in the workplace.</p> |
| 88 | <p>Employees exposed to electrical hazards shall be trained in and familiar with any electrical safety related practices necessary for their safety.</p> |
| 89 | <ul style="list-style-type: none"> 1) Workplaces designed, constructed and installed in accordance with the Canadian Electrical Code must conform to the approach boundaries identified in Tables 1A and 1B. 2) If the workplace is not designed and constructed in accordance with the Canadian Electrical Code, the approach boundaries identified in Tables 1A and 1B must be adapted to take into consideration the given electrical design and installation. 3) Adapted approach boundary tables must be included in the Electrical Safety Program required under section (1) above. |
| 90 | <p><u>Qualified Electrical Person</u></p> <ul style="list-style-type: none"> 1) Any person who conducts repairs, alterations, or testing on electrical equipment must be a qualified electrical person. 2) Only a qualified electrical person may work within the approach boundaries, identified in in the Electrical Safety Program, of exposed energized electrical conductors and circuit parts or identified arc flash boundaries. 3) An employee who is undergoing on-the-job training for the purpose of obtaining the skills and knowledge necessary to be considered a qualified electrical person and who, in the course of such training, demonstrates an ability to perform specific duties safely at his or her level of training and who is under the direct supervision of a qualified electrical person shall be considered to be a qualified electrical person for the performance of those duties. |

| | |
|----|---|
| 91 | <p><u>Working on Electrical Equipment</u></p> <p>1) If electrical equipment is energized or may become energized, an employee must not work on the equipment unless the equipment is isolated in accordance with Part XX – Control of Hazardous Energy.</p> <p>2) Notwithstanding the above, where work must be conducted on equipment in an energized state due to equipment design or operational limitations, then:</p> <p>a) work permit is required that:</p> <p style="padding-left: 40px;">a. shall be in accordance with Part XX (<i>Permit to Work – was included in Phase 1 policy intent</i>); and</p> <p style="padding-left: 40px;">b. is signed by the Offshore Installation Manager (OIM), or equivalent level position aboard the marine installation or structure, or a competent person that has been designated to represent the OIM or equivalent position; and</p> <p>b) the employer must develop and the work must be carried out in accordance with safe work procedures.</p> |
| 92 | <p><u>Work Within Approach Boundaries</u></p> <p>Exposed energized electrical conductors and circuit parts must be put into an electrically safe work condition, in accordance with Part XX (Control of Hazardous Energy), before an employee works within the limited approach boundary of those conductors or parts.</p> |
| 93 | <p><u>Work Permits</u></p> <p>A permit to work, in accordance with Part XX (<i>Permit to Work – was included in Phase 1 policy intent</i>), is required :</p> <p>a) Where it is not possible in (1) to put exposed energized electrical conductors and circuit parts into an electrically safe work condition due to equipment design or operational limitations, or</p> <p>b) When the employee works within the vicinity of conductors or circuit parts that are not exposed but an increased likelihood of injury from an exposure to an arc flash hazard or electric hazard exists.</p> |
| 94 | <p><u>Arc flash</u></p> <p>Where the risk assessment indicates a potential for arc flash hazard:</p> <p>a) Arc flash boundaries must be determined using an appropriate method;</p> <p>b) Additional controls must be identified and put in place to protect against injury.</p> |

| | |
|----|---|
| 95 | <ol style="list-style-type: none"> 1) Electrical equipment must protect against electrical hazard by guarding, insulating, grounding or other means of protection. 2) Where an employee must work within the limit approach boundaries because of the circumstances of work or the inadvertent movement of persons or equipment and where guarding is used: <ol style="list-style-type: none"> a) equipment shall not touch the guarding; and b) a safety watch shall in accordance with Section 98 shall be used. |
| 96 | <p><u>Insulated Tools and Equipment</u></p> <ol style="list-style-type: none"> 1) Qualified electrical persons shall use insulated tools and/or handling equipment when they are working inside the restricted approach boundary of exposed energized electrical conductors or circuit parts where tools or handling equipment might make accidental contact. 2) The following requirements shall apply to insulated tools and equipment: <ol style="list-style-type: none"> a) Insulated tools shall be rated for the voltages on which they are used; b) Insulated tools shall be designed and constructed for the environment to which they are exposed and the manner in which they are used; and c) Insulated tools shall be protected from damage to the insulating material. |
| 97 | <p><u>Test Instruments and Equipment</u></p> <ol style="list-style-type: none"> 1) Only qualified electrical persons shall perform tasks such as testing, troubleshooting, voltage measuring, etc., within the limited approach boundary or arc flash boundary of energized electrical conductors or circuit parts where an electrical hazard exists. 2) Test instruments, equipment, and their accessories shall: <ol style="list-style-type: none"> a) Be rated for circuits and equipment where they are utilized; b) be designed for the environment to which they will be exposed; c) be designed for the manner in which they will be utilized; and d) conform with an appropriate standard. |
| 98 | <p><u>Electrical Safety Watcher</u></p> <p>If an employee is working on or near exposed energized electrical conductors and circuit parts and, because of the nature of the work or the condition or location of the workplace, it is necessary for the safety of the employee that the work be observed by a person not engaged in the work, the employer must appoint an Electrical Safety Watcher:</p> <ol style="list-style-type: none"> a) to warn all employees on or near an energized electrical installation of the hazard; b) to ensure that all safety precautions and procedures are complied with; c) Who is authorized to stop immediately any part of the work that they consider dangerous; and d) Who is free of any other duties that might interfere with their duties as a watcher. |

| | |
|-----|--|
| 99 | If an employee or another person, including every electrical safety watcher, is associated with work on electrical equipment, the employee or other person must be fully informed by the employer with respect to the safe coordination of their work. |
| 100 | <p><u>Electrical Room</u></p> <ol style="list-style-type: none"> 1) Electrical rooms shall not be used for storing unrelated, flammable, explosive or combustible materials. 2) The working space around and the path of access to every electrical switch, energy-isolating device or meter must be free from obstruction and arranged to give authorized persons ready access to all parts requiring attention. 3) Volatile flammable substance shall not be used in an electrical room or confined area where high voltage electrical current is a hazard. |
| 101 | Legible safety signs written in the official operating language of the workplace with symbols to convey the same meaning must be used where necessary to warn others about electrical hazards. |
| 102 | <ol style="list-style-type: none"> 1) All electrical equipment within a hazardous area must be certified and marked as suitable for the conditions in that location. 2) Each extension cord of the electrical equipment located within a hazardous area must be equipped with a terminal that provides an interruption of the circuit before a connecting device is withdrawn. |
| 103 | <p><u>Defective Electrical Equipment</u></p> <p>Defective equipment shall either be put in good order or permanently disconnected.</p> |
| 104 | <p><u>Electrical Equipment Damage</u></p> <p>Electrical equipment shall be installed and guarded so that adequate provision may be made for the safety of persons and property and for the protection of the electrical equipment from mechanical damage or other damages to which it is liable to be exposed.</p> |

| | |
|-----|--|
| 105 | <p><u>Grounded Electrical Equipment</u></p> <p>The following requirements shall apply to grounding-type equipment:</p> <ul style="list-style-type: none"> a) A flexible cord used with grounding-type utilization equipment shall contain an equipment grounding conductor. b) Attachment plugs and receptacles shall not be <ul style="list-style-type: none"> i. connected or altered in a manner that might interrupt continuity of the equipment grounding conductor; or ii. altered to allow use in a manner not intended by the manufacturer. c) Adapters that interrupt the continuity of the equipment grounding conductor shall not be used. |
|-----|--|

TABLE 1A

Approach Boundaries to Energized Electrical Conductors or Circuit Parts for Shock Protection for AC Systems (distance from energized electrical conductors or circuit parts to employee)

| Nominal System Voltage Range, phase to phase ^α | Limit Approach Boundary | | Restricted Approach Boundary (includes inadvertent movement adder) |
|---|---|----------------------------|--|
| | Exposed Moveable Conductor ^β | Exposed Fixed Circuit Part | |
| Less than 50 V | Not specified | Not specified | Not specified |
| 50 V – 150 V ^δ | 3.0 m | 1.0 m | Avoid contact |
| 151 V – 750 V | 3.0 m | 1.0 m | 0.3 m |
| 751 V – 15 kV | 3.0 m | 1.5 m | 0.7 m |
| 15.1 kV – 36 kV | 3.0 m | 1.8 m | 0.8 m |
| 36.1 kV – 46 kV | 3.0 m | 2.5 m | 0.8 m |
| 46.1 kV – 72.5 kV | 3.0 m | 2.5 m | 1.0 m |
| 72.6 kV – 121 kV | 3.3 m | 2.5 m | 1.0 m |
| 138 kV – 145 kV | 3.4 m | 3.0 m | 1.3 m |
| 161 kV – 169 kV | 3.6 m | 3.6 m | 1.3 m |
| 230 kV – 242 kV | 4.0 m | 4.0 m | 1.7 m |
| 345 kV – 362 kV | 4.7 m | 4.7 m | 2.8 m |
| 500 kV – 550 kV | 5.8 m | 5.8 m | 3.6 m |
| 765 kV – 800 kV | 7.2 m | 7.2 m | 4.9 m |

^α For Single Phase Systems above 250 V, select the range that is equal to the system's maximum phase to ground voltage times 1.732

^β A condition in which the distance between the conductor and a person is not under the control of the person. This is normally applied to overhead line conductors supported by poles.

^δ This includes circuits where the exposure does not exceed 120V.

TABLE 1B**Approach Boundaries to Energized Electrical Conductors or Circuit Parts for Shock Protection for DC Systems (distance from energized electrical conductors or circuit parts to employee)**

| Nominal System Voltage Range, phase to phase | Limit Approach Boundary | | Restricted Approach Boundary (includes inadvertent movement adder) |
|--|---|----------------------------|--|
| | Exposed Moveable Conductor ^β | Exposed Fixed Circuit Part | |
| Less than 100 V | Not specified | Not specified | Not specified |
| 100 V – 300 V | 3.0 m | 1.0 m | Avoid contact |
| 301 V – 1 kV | 3.0 m | 1.0 m | 0.3 m |
| 1.1 kV – 5 kV | 3.0 m | 1.5 m | 0.4 m |
| 5.1 kV – 15 kV | 3.0 m | 1.5 m | 0.7 m |
| 15.1 kV – 45 kV | 3.0 m | 2.5 m | 0.8 m |
| 45.1 kV – 75 kV | 3.0 m | 2.5 m | 1.0 m |
| 75.1 kV – 150 kV | 3.4 m | 3.0 m | 1.2 m |
| 150.1 kV – 250 kV | 4.0 m | 4.0 m | 1.6 m |
| 250.1 kV – 500 kV | 6.0 m | 6.0 m | 3.5 m |
| 500.1 kV – 800 kV | 8.0 m | 8.0 m | 5.0 m |

^β A condition in which the distance between the conductor and a person is not under the control of the person. This is normally applied to overhead line conductors supported by poles.

| CONTROL OF HAZARDOUS ENERGY- LOCKOUT AND OTHER METHODS | |
|---|--|
| 106 | Any activities involving the control of hazardous energy must conform to CSA Z460 <i>Control of Hazardous Energy-- Lockout and other methods</i> . |
| 107 | A Hazardous Energy Control program must be established, implemented and maintained that conforms to the program requirements in <i>CSA Z460 Control of Hazardous Energy-- Lockout and other methods</i> . |
| 108 | <p><u>Permit to Work with Hazardous Energy</u></p> <p>A work permit is required for any work involving hazardous energy in accordance with Part XX (<i>Permit to Work – was included in Phase 1 policy intent</i>)</p> |
| 109 | <p><u>General requirement</u></p> <p>If the unexpected start-up of machinery or equipment, system or process or release of stored energy, including during the course of maintenance and repair, could result in injury, the energy source must be identified, isolated, de-energized, locked out and tagged out or otherwise effectively controlled.</p> |
| 110 | <ol style="list-style-type: none"> 1) Every energy-isolating device must be so designed and located as to permit quick and safe operation at all times. 2) All Energy-isolating devices must be clearly labelled or identified to indicate their function, in accordance with the nomenclature and/or identifiers used in the procedures that specify their use. The identification shall correspond to the electrical drawings. |

| | |
|-----|---|
| 111 | <p><u>Lock-out Tag-out</u></p> <ol style="list-style-type: none"> 1) For each machine, piece of equipment, system or process, detailed written instructions for the control of hazardous energy must be issued to the authorized individuals conducting the work for review and use. 2) The instructions referred to in subsection (1) must specify <ol style="list-style-type: none"> a) the procedures to be followed for shutting down, isolating, blocking, securing, and relieving stored or residual energy; b) the machine, equipment or process to which the instructions apply; c) considerations regarding all required remote and local isolations; d) requirement for verifying that isolation and de-energization have been accomplished; e) any other tests to be performed; f) the procedural steps for placing and removing lockout devices; g) the particulars of the tags or signs to be used; h) the required energy-isolating devices and their locations; i) the method of determining that all persons near the locked out machine, equipment, tool or electrical installation are clear of any hazardous and have been instructed to remain clear before the machine, equipment, tool or electrical installation, or any part of it, is energized; j) the method of notifying a person in the work area of safe conditions for work after a lock-out has been completed; k) The requirements for the machine, equipment, or process to be inspected to ensure that it is ready for return to service. 3) A tag or sign referred to in subsection (2)(g) must <ol style="list-style-type: none"> a) Identify the machine, equipment, or process supplied and energy type; b) Have words directing the person not to start or operate the machine, equipment or process, or display a symbol conveying the same meaning; c) show the date and time at which the machine, equipment, or process was locked out; d) show the name of the employee who applied the lockout; e) Reason for lockout; f) be removed only by the employee who attached it; g) not readily conduct electricity; and h) not be used for other purposes . 4) The employer shall ensure that employees are trained on the procedures for lock-out tag-out. |
|-----|---|

| | |
|-----|---|
| 112 | <p><u>Locks</u></p> <ol style="list-style-type: none"> 1) The employer must ensure that each employee required to lock out has ready access to sufficient personal locks to implement the required lockout procedure. 2) Locks must be strong enough and designed to withstand inadvertent opening without the use of excessive force, unusual measures or destructive techniques and must not be a combination lock. 3) The lock must only have a single key. 4) Each personal lock must be marked or tagged to identify the person applying it. 5) Procedures must be implemented for shift or personnel changes, including the orderly transfer of control of locked out energy isolating devices between outgoing and incoming employees. |
| 113 | <p><u>Access to energy isolating devices</u></p> <p>When an energy isolating device is locked out, the device must not prevent access to other energy isolating devices.</p> |
| 114 | <p><u>Isolating piping systems</u></p> <ol style="list-style-type: none"> 1) To isolate piping or a pipeline containing harmful substances, under pressure, and/or high temperature, an employer shall use <ol style="list-style-type: none"> a) a system of blanking or blinding; or b) a double block and bleed isolation system providing <ol style="list-style-type: none"> i. two blocking seals on either side of the isolation point; and ii. an operable bleed-off between the two seals. 2) An employer must ensure that piping that is blanked or blinded is clearly marked to indicate that a blank or blind is installed. 3) An employer must ensure that, if valves or similar blocking seals with a bleed-off valve between them are used to isolate piping, the bleed-off valve is secured in the "OPEN" position and the valves or similar blocking seals in the flow lines are functional and secured in the "CLOSED" position, and is clearly marked as to what position it is in. 4) An employer must ensure that the device used to secure the valves or seals described in subsection (3) are <ol style="list-style-type: none"> a) a positive mechanical means of keeping the valves or seals in the required position; and b) strong enough and designed to withstand inadvertent opening without the use of excessive force, unusual measures or destructive techniques. |

| SMOKING ROOMS | |
|----------------------|---|
| 115 | No person shall smoke on or in a workplace except in those areas set aside by the Employer who has control over their workplace for that use. |
| 116 | Selection of designated ETS areas shall consider: <ul style="list-style-type: none"> a) Proximity to fire and explosion hazards, and b) Prevention of exposure of other employees to ETS |
| 117 | When a workplace contains an ETS area it shall be constructed and operated in accordance with this section. <ul style="list-style-type: none"> a) ETS areas shall be maintained under negative pressure with respect to the adjacent area. b) Separation shall be achieved by solid walls, floors, ceilings and doors equipped with automatic closing mechanism. c) Air transferred from ETS-free areas to ETS areas shall be maintained at the required rate regardless of whether or not the doors are opened or closed. d) Re-circulation shall not be permitted. e) Signage shall be posted outside each entrance stating "This Area May Contain Environmental Tobacco Smoke" f) An area previously classed as an ETS area can only be reclassified if the smoke exposure has stopped and odor and irritation from residual ETS contaminants are not apparent. g) ETS areas shall be ventilated at a rate of 50 CFM/occupant (24 L/S/occupant). h) Signage indicating maximum occupancy levels shall be placed outside each entrance to ensure the ventilation operates within design parameters. |