

Guideline for the Occupational Health and Safety Regulations

Issue Date: October 28, 2024

For more information, contact:

C-NLOPB
240 Waterford Bridge Road, Suite 7100
The Tower Corporate Campus – West Campus Hall
St. John's NL A1E 1E2
Tel: (709) 778-1400
Fax: (709) 778-1473

CNSOPB
201 Brownlow Avenue, Suite 27
Dartmouth NS B3B 1W2
Tel: (902) 422-5588
Fax: (902) 422-1799

ISBN #: 978-1-77865-024-6

| Summary of Changes | | |
|--------------------|--------------------------|--|
| Date Revised | Sections (if applicable) | Description of Change |
| October 28, 2024 | All | Updated to new style, updated references to the Framework Regulations, updated references to standards and removed duplication with the <i>Guideline for the Framework Regulations</i> and other guidelines. |
| October 28, 2024 | Several sections | Updated to reflect changes introduced by the updated Code of Practice (COP) Training and Qualification Standard Practice (TQOP). |
| October 28, 2024 | 5-6 | Updated to include guidance on right to know, right to participate and right to refuse. |
| October 28, 2024 | Sections 37-39 | Removed additional details on the <i>Labour Standards Act</i> as this is all summarized in the referenced COP. |
| October 28, 2024 | 46 | Updated to include guidance on the withdrawn CGSB 155.20 standard. |
| October 28, 2024 | 101 | Added in clarity on protective cages. |
| October 28, 2024 | 138 - 140 | Updated to include additional details on hot work permits and additional guidance on hot work being undertaken in conjunction with well or production activities. |
| October 28, 2024 | 142 | Added reference to Public Safety Act in NL for pressure systems installed on other types of marine installations or structures. |
| October 28, 2024 | 168 | Additional clarification provided on the operator's dive safety specialist (DSS). |
| October 28, 2024 | 172 | Reference made to <i>IMO International Code of Safety for Diving Operations 2023 (2023 Diving Code)</i> |

Foreword

The Canada-Nova Scotia Offshore Petroleum Board and Canada-Newfoundland and Labrador Offshore Petroleum Board (the *Regulators*) have issued this Guideline to provide clarity to those with statutory responsibilities in the offshore petroleum industry on the *Canada-Newfoundland and Labrador* and the *Canada-Nova Scotia Offshore Area Occupational Health and Safety (OHS) Regulations* under Part III.1 of the *Atlantic Accord Implementation Acts (Accord Acts)*. This Guideline applies to all workplaces in the *Offshore Area* to which the *OHS Regulations* and Part III.1 of the *Accord Acts* apply. This Guideline also provides direction on the *Regulator's* interpretation of the regulations.

Guidelines are developed to provide assistance to those with statutory responsibilities (including operators, employers, employees, supervisors, providers of services, suppliers, etc.) under the *Accord Acts* and regulations. Guidelines provide an understanding of how legislative requirements can be met. In certain cases, the goals, objectives and requirements of the legislation are such that no guidance is necessary. In other instances, guidelines will identify a way in which regulatory compliance can be achieved.

The authority to issue Guidelines and Interpretation Notes with respect to legislation is specified by sections 151.1 and 205.067 of the *Canada-Newfoundland and Labrador Atlantic Accord Implementation Act, S.C. 1987, c.3 (C-NLAAIA)*, sections 147 and 201.64 of the *Canada-Newfoundland and Labrador Atlantic Accord Implementation Newfoundland and Labrador Act, RSNL 1990 c. C-2*, subsection 156(1) and section 210.068 of the *Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act, S.C. 1988, c.28 (CNSOPRAIA)* and section 148 and subsection 202BQ(1) of the *Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation (Nova Scotia) Act*. The *Accord Acts* also state that Guidelines and Interpretation Notes are not deemed to be statutory instruments.

For the purposes of this Guideline, these Acts are referred to collectively as the *Accord Acts*. Any references to the C-NLAAIA, the CNSOPRAIA or to the regulations in this Guideline are to the federal versions of the *Accord Acts* and the associated regulations.

TABLE OF CONTENTS

| | | |
|--|--|-----------|
| 1.0 | Acronyms and Abbreviations | 8 |
| 2.0 | Definitions | 11 |
| 2.1. | Guidance navigation | 12 |
| 2.2. | Use of the term “including” | 12 |
| 2.3. | Substitution Process | 12 |
| 2.4. | CSO Approval Process | 13 |
| 2.5. | Codes of Practice | 14 |
| 2.6. | Flag State and Classification Society Rules | 14 |
| 3.0 | Purpose and Scope | 14 |
| 4.0 | Guideline | 15 |
| PART 1: GENERAL | | 15 |
| Section 1 - | Definitions | 15 |
| Section 2 – | Referenced Documents..... | 19 |
| Section 3 - | Inconsistency or Conflict..... | 22 |
| PART 2: OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT AND OVERSIGHT | | 23 |
| Section 4 - | Occupational Health and Safety Policy | 23 |
| Sections 5 – 6 - | Occupational Health and Safety Management System and Program | 23 |
| Section 8 – | Record Keeping..... | 32 |
| Section 9 – | Posting of Documents | 32 |
| PART 3: REPORTING AND INVESTIGATION (Sections 10 – 14) | | 33 |
| PART 4: TRAINING – GENERAL (Sections 15 – 17) | | 35 |
| PART 5: EMERGENCY RESPONSE AND PREPAREDNESS | | 36 |
| Section 18 – | Emergency Response Plan | 36 |
| Section 19 – | Posting of Information | 39 |
| Section 20 – | Instruction and Training..... | 40 |
| Section 21 – | Means of Evacuation..... | 41 |
| Section 22 – | Emergency Equipment | 42 |
| Section 23 – | Emergency Alert System | 43 |
| Section 24 – | Emergency Power Source | 44 |
| Section 25 – | Emergency Descent Control..... | 45 |
| Section 26 – | Fire and Explosion | 46 |
| Section 27 – | Firefighting Equipment..... | 49 |
| Section 28 – | Fire Team Equipment | 50 |
| Section 29 – | Falls into Ocean | 53 |
| Section 30 – | Emergency Drills and Exercises..... | 54 |
| PART 6: FIRST AID AND MEDICAL CARE | | 56 |
| Section 31 – | Medical Services..... | 56 |
| Section 32 – | Medical Response Plans..... | 58 |
| Section 33 – | Medics..... | 62 |
| Section 34 – | First Aiders..... | 63 |
| Section 35 – | Treatment Records..... | 64 |
| PART 7: EMPLOYEE WELL-BEING | | 64 |
| Section 36 – | Occupational health and safety program..... | 64 |

| | |
|--|------------|
| Sections 37 – 39 - Impairment | 65 |
| Section 40 – Thermal Stress | 67 |
| Section 41 – Musculoskeletal Injury | 68 |
| Section 42 – Workplace Violence and Harassment | 69 |
| Section 43 – Disruptive Behaviour | 70 |
| PART 8: PERSONAL PROTECTIVE EQUIPMENT | 71 |
| Sections 44 - 45 – General | 71 |
| Sections 46 - 48 – Requirements | 72 |
| Section 49 – Records | 81 |
| PART 9: PASSENGERS IN TRANSIT | 81 |
| Section 50 – Transit by Helicopter | 81 |
| Section 51 – Transit by Vessel | 83 |
| Section 52 – Safe Entry and Exit | 86 |
| PART 10: WORK PERMITS (Sections 53 – 55) | 88 |
| PART 11: FACILITIES | 91 |
| Section 56 – Application | 91 |
| Section 57 – Accommodations Area | 92 |
| Sections 58 – 62 - Requirements | 93 |
| Section 63 – Sleeping Quarters | 95 |
| Section 64 – Dining Area | 98 |
| Section 65 – Smoking Areas | 98 |
| PART 12: SANITATION AND HOUSEKEEPING | 99 |
| Section 66 – Waste Material | 99 |
| Section 67 – Pests | 100 |
| Section 68 – Cleanliness and Orderliness | 101 |
| Section 69 – Storage | 102 |
| PART 13: FOOD AND POTABLE WATER | 102 |
| Section 70 – Food Safety | 102 |
| Section 71 – Potable Water | 103 |
| PART 14: LIGHTING | 104 |
| Section 72 – Non-application | 104 |
| Section 73 – Minimum Levels of Lighting | 105 |
| Section 74 – Emergency Lighting | 105 |
| Section 75 – Handling, Storage and Disposal | 106 |
| PART 15: SOUND LEVELS | 107 |
| Section 76 – Unimpeded Communication | 107 |
| Section 77 – Noise | 107 |
| PART 16: VENTILATION (Sections 78 – 80) | 109 |
| PART 17: STRUCTURAL SAFETY (Sections 81 – 86) | 111 |
| PART 18: EQUIPMENT, MACHINES AND DEVICES | 113 |
| Section 87 – Requirements | 113 |
| Section 88 – Removal from Service | 116 |
| Section 89 – Hair, Clothing and Accessories | 116 |
| Section 90 – Pedestrian Passage | 117 |

| | |
|--|------------|
| Section 91 – Standards | 117 |
| Section 92 – Fuelling | 119 |
| PART 19: ELEVATORS AND PERSONNEL LIFTS (Sections 93 – 94)..... | 120 |
| PART 20: LADDERS, STAIRS AND RAMPS | 122 |
| Section 95 - Application | 122 |
| Section 96 – Ship’s Ladder | 122 |
| Section 97 – Requirement to Install | 122 |
| Section 98 – Stairs, Ramps and Fixed Ladders | 123 |
| Section 99 – Temporary Stairs | 123 |
| Section 100 – Ramps | 123 |
| Section 101 – Fixed Ladders..... | 124 |
| Section 102 – Portable Ladders | 125 |
| PART 21: SCAFFOLDING AND PLATFORMS..... | 126 |
| Section 103 – Definitions | 126 |
| Section 104 – Use - General | 126 |
| Section 105 – Prevention of Contact | 127 |
| Section 106 – Scaffolds..... | 127 |
| Section 107 – Elevating Work Platforms | 129 |
| PART 22: FALL PROTECTION AND ROPE ACCESS | 131 |
| Section 108 – Risk of Falling | 131 |
| Section 109 – Means of Fall Protection | 131 |
| Section 110 – Rope Access | 133 |
| Section 111 – Work Permit | 136 |
| Section 112 – Instruction and Training..... | 136 |
| PART 23: FALLING OBJECTS (Section 113) | 137 |
| PART 24: MATERIALS HANDLING (Sections 114 – 129) | 139 |
| PART 25: CONFINED SPACES | 150 |
| Section 130 – Evaluation of Confined Spaces..... | 150 |
| Section 131 – Confined Space Program..... | 151 |
| Section 132 – Work Permit | 153 |
| Section 133 – Entry and Occupation Requirements | 154 |
| Section 134 – Confined Space Atmosphere..... | 156 |
| Section 135 – Attendants..... | 158 |
| Section 136 – Instruction and Training..... | 159 |
| Section 137 – Completion of Confined Space Work | 160 |
| PART 26: HOT WORK (Sections 138 – 140)..... | 161 |
| PART 27: HAZARDOUS ENERGY..... | 166 |
| Section 141 – Definitions | 166 |
| Section 142 – Hazardous Energy Program..... | 167 |
| Section 143 – Work Permit | 171 |
| Section 144 – Requirements | 171 |
| Section 145 – Approach Boundaries..... | 175 |
| PART 28: COMPRESSED GAS (Sections 146 – 148) | 176 |
| PART 29: ABRASIVE BLASTING AND HIGH-PRESSURE WASHING (Section 149)..... | 179 |

| | |
|---|------------|
| PART 30: EXPLOSIVES | 180 |
| Section 150 – Definition | 180 |
| Section 151 – Explosives Program | 181 |
| Section 152 – Work Permit | 182 |
| Section 153 – Requirements | 182 |
| PART 31: HAZARDOUS SUBSTANCES | 183 |
| Section 154 – Definitions | 183 |
| Section 155 – Hazardous Substances Program | 184 |
| Section 156 – Investigation and Assessment | 186 |
| Section 157 – Requirements | 187 |
| Section 158 – Identification | 193 |
| Sections 159 – 161 – Labelling and Safety Data Sheets | 193 |
| Section 162 – Instruction and Training | 196 |
| Section 163 – Information Required in an Emergency | 197 |
| PART 32: DIVING | 197 |
| Section 164 – Definitions | 197 |
| Section 165 – Diving Program | 198 |
| Section 166 – Prohibitions | 203 |
| Section 167 – Instruction | 203 |
| Section 168 – Dive Safety Specialists | 204 |
| Section 169 – Emergency Response Plan | 206 |
| Section 170 – Emergency Drills and Exercises | 208 |
| Section 171 – Dive Project Plan | 209 |
| Section 172 – Dive Contractor Obligations | 213 |
| Section 173 – Diving Record | 217 |
| 5.0 Bibliography | 219 |
| Incorporated by Reference | 219 |
| Codes of Practice | 220 |
| Other Documents Referenced in this Guideline | 221 |

1.0 Acronyms and Abbreviations

| | |
|------------------------------|--|
| ABS | American Bureau of Shipping |
| ACGIH | American Conference of Governmental Industrial Hygienists |
| AED | Automated External Defibrillator |
| ASHRAE | American Society of Heating, Refrigerating and Air-Conditioning Engineers |
| API | American Petroleum Institute |
| BST | Basic Survival Training |
| CAPP | Canadian Association of Petroleum Producers |
| CGSB | Canadian General Standards Board |
| CCOHS | Canadian Centre for Occupational Health and Safety |
| C-NLAAIA¹ | <i>Canada-Newfoundland and Labrador Atlantic Accord Implementation Act</i> |
| C-NLOPB | Canada-Newfoundland and Labrador Offshore Petroleum Board |
| CNSOPB | Canada-Nova Scotia Offshore Petroleum Board |
| CNSOPRAIA² | <i>Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act</i> |
| CO | Carbon Monoxide |
| CO₂ | Carbon Dioxide |
| COP | Code of Practice |

¹ References to the C-NLAAIA in this Guideline are to the federal version of the Accord Act

² References to the CNSOPRAIA in this Guideline are to the federal version of the Accord Act

| | |
|-----------------------|--|
| CSA | Canadian Standards Association |
| CSO | Chief Safety Officer |
| DCBC | Diver Certification Board of Canada |
| DNV | Det Norske Veritas |
| DSS | Dive Safety Specialist |
| EEBD | Emergency Escape Breathing Device |
| EN | European Standards |
| EPIRB | Emergency Position-Indicating Radio Beacon |
| EUBA | Emergency Underwater Breathing Apparatus |
| FSS | Fire Safety Systems |
| GHS | Globally Harmonized System for the Classification and Labelling of Chemicals |
| GMDSS | Global Maritime Distress and Safety System |
| H₂S | Hydrogen Sulfide |
| HSE | Health, Safety and Environment |
| HUET | Helicopter Underwater Escape Training |
| IADC | International Association of Drilling Contractors |
| IDLH | Immediately Dangerous to Life and Health |
| IEC | International Electrotechnical Commission |
| IECEX | International Electrotechnical Commission System for Certification to Standards Relating to Equipment for Use in Explosive Atmospheres |
| ILO | International Labour Organization |
| IMCA | International Marine Contractors Association |
| IMDG | International Maritime Dangerous Goods |
| IMO | International Maritime Organization |

| | |
|----------------|---|
| IOGP | International Association of Oil and Gas Producers |
| IRATA | Industrial Rope Access Trade Association |
| ISM | International Safety Management |
| ISO | International Organization for Standardization |
| JSA | Job Safety Analysis |
| LEL | Lower Explosive Limit |
| LSA | Life-Saving Appliances |
| LR | Lloyd's Register |
| MED | Marine Emergency Duties |
| MEDEVAC | Medical Evacuation |
| MLC | Maritime Labour Convention |
| MODU | Mobile Offshore Drilling Unit |
| MSI | Musculoskeletal Injury |
| NFPA | National Fire Protection Association |
| NIOSH | National Institute for Occupational Safety and Health |
| NL | Newfoundland and Labrador |
| NORM | Naturally Occurring Radioactive Material |
| NS | Nova Scotia |
| OHS | Occupational Health and Safety |
| OHSMS | Occupational Health and Safety Management System |
| PPE | Personal Protective Equipment |
| RP | Recommended Practice |
| SCBA | Self-Contained Breathing Apparatus |
| SOLAS | <i>International Convention for the Safety of Life at Sea</i> |

| | |
|--------------|---|
| STCW | International Convention on Standards of Training, Certification and Watchkeeping for Seafarers |
| TDG | Transportation of Dangerous Goods |
| TLV | Threshold Limit Value |
| TQOP | Atlantic Canada Offshore Petroleum Code of Practice for the Training and Qualifications of Offshore Personnel |
| UL | Underwriters Laboratories |
| WHMIS | Workplace Hazardous Materials Information System |
| WHO | World Health Organization |

2.0 Definitions

In this Guideline, the terms such as “authorization”, “coordinator”, “committee” “employee”, “employer”, “hazardous substance”, “marine installation or structure”, “operator”, “passenger craft”, “person”, “personal protective equipment”, “providers of services”, “supervisor”, “supplier”, “workplace” and “workplace committee” referenced herein have the same meaning as in the *Accord Acts*.³

In this Guideline, the terms such as “accommodations installation”, “certifying authority”, “drilling installation”, “floating platform”, “installation”, “production installation” and “support craft” referenced herein have the same meaning as in the *Framework Regulations*.

For the purposes of this Guideline, the following definitions have been capitalized and italicized throughout. The following definitions apply:

| | |
|--------------------------------------|---|
| <i>Accord Acts</i> | means the <i>Canada-Newfoundland Atlantic Accord Implementation Act, Canada-Newfoundland and Labrador Atlantic Accord Implementation (Newfoundland and Labrador) Act, Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act and Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation (Nova Scotia) Act</i> |
| <i>Declaration of Fitness</i> | means the “declaration” under Part III of the <i>Accord Acts</i> |

³ C-NLAAIA 2, 135, 205.001(1), 205.017(5) and CNSOPRAIA 2, 138, 210.001(1), 210.017(5)

| | |
|------------------------------|--|
| Framework Regulations | means the <i>Canada-Newfoundland and Labrador Offshore Area Petroleum Operations Framework Regulations, SOR/2024-25</i> and the <i>Canada-Nova Scotia Offshore Area Petroleum Operations Framework Regulations, SOR/2024-26</i> |
| Offshore Area | means the offshore area as defined by the <i>Accord Acts</i> |
| OHS Regulations | means the <i>Canada-Newfoundland and Labrador Offshore Area Occupational Health and Safety Regulations, SOR/2021-247</i> or the <i>Canada-Nova Scotia Offshore Area Occupational Health and Safety Regulations, SOR/2021-248</i> |
| Regulator | means the Canada-Newfoundland and Labrador Offshore Petroleum Board or the Canada-Nova Scotia Offshore Petroleum Board, as the case may be |

Additional notes on the use of this Guideline are as follows:

2.1. Guidance navigation

This document has been structured to provide guidance by Parts and sections of the *OHS Regulations*. The legislative requirement of the regulation appears in *italic, bold* font and the guidance is provided immediately after each applicable Part or section of the regulation, separated by double lines. This Guideline provides references to the *Accord Acts* and other applicable legislation, references to other regulatory instruments issued by the *Regulators* and lists relevant standards and other items to be considered. As numerical references to like legislative requirements found in both the C-NLAAIA and the CNSOPRAIA often differ slightly, where a pinpoint citation is included in the main body of this Guideline to a section or part thereof in the *Accord Acts*, the first pinpoint refers to the C-NLAAIA, and the second pinpoint found in parenthesis refers to the pinpoint in the CNSOPRAIA.

2.2. Use of the term “including”

Where the term “including” is used in the *Accord Acts*, the *OHS Regulations* or this Guideline, it is implied that the list which follows is not exhaustive.

2.3. Substitution Process

Where the operator or employer (also referred to as the applicant) proposes to meet the requirements of a regulatory provision in a manner other than as prescribed in the *OHS Regulations*, an application for substitution, via the

Regulatory Query (RQ) process, must be submitted to the *Regulator*. Guidance on the RQ process is provided on the *Regulator's* respective websites⁴. When submitting an application for substitution, pursuant to the *Accord Acts*⁵, the applicant must demonstrate, to the satisfaction of the CSO, that the protection of the health and safety of employees at the workplace would not be diminished by use of the proposed substitution. A RQ approval must be granted before using the proposed substitution. It should be noted that the CSO does not have the authority to grant exemptions from the *OHS Regulations*.

2.4. CSO Approval Process

The following references in the *OHS Regulations* have an allowance for the CSO to provide direct approval of an alternate means:

- Subsection 30(3) – Annual lifeboat launching drill
- Paragraph 63(3)(a) – Request to exceed two persons in sleeping quarters
- Paragraph 107(e) – Use of self-propelled or mobile elevating work platforms
- Section 110 – Non-conformance with IRATA standard
- Paragraph 153(1)(c) – Amount of explosives

With respect to applications for CSO Approval, the following will occur:

- The request should be made formally in writing and accompanied with all required supporting documentation.
- Information should be suitable for posting on the *Regulator's* website. If there is any information to be redacted before posting for review, both a redacted and un-redacted version to be provided.
- The workplace committee should be consulted and their concerns addressed. Evidence in the form of signed meeting minutes of same (or workplace committee concurrence) should be provided with the request.
- If the request affects the design, inspection, testing or maintenance of equipment listed on the schedule of regulations to be verified by the certifying authority on an installation or vessel that requires a Certificate of Fitness, it should be accompanied by the certifying authority's review and concurrence.
- With respect to subsection 30(3) of the *OHS Regulations*, this should include:
 - lifeboat integrity assurance activities in lieu of doing regular launching, specifying which additional activities will be done above what is already required by SOLAS and the manufacturer; and
 - written concurrence from the lifeboat manufacturer, along with any conditions associated with their concurrence.

⁴ C-NLOPB – www.cnlopb.ca; CNSOPB – www.cnsopb.ns.ca

⁵ C-NLAAIA 205.069 and 205.07; CNSOPRAIA 210.07 and 210.071

Once an application is approved by the CSO, the following should be expected:

- The application, supporting documentation and associated approval letter may be posted on the *Regulator's* website.
- Any documents supporting the request, including maintenance plans, should not be modified without concurrence of the CSO.
- The application and associated approval letter should be provided to the workplace committee and posted publicly at the workplace.
- Any conditions noted in the associated approval letter should be complied with to the satisfaction of the CSO.

2.5. Codes of Practice

The *Accord Acts*⁶ provide the authority for the CSO to require a Code of Practice (COP). A COP is a set of written rules respecting OHS established by either the operator or the employer or by the CSO for operators and employers to adopt. COPs are approved by the CSO and contain information in respect of OHS. The CSO can also revise a COP they impose, or they may require an operator or employer to revise a COP it has established for itself. All COPs in force are provided on the *Regulator's* respective websites⁷ and are referenced, as applicable, throughout this Guideline. A summary of all COPs referenced in this Guideline are provided in the [Bibliography](#).

2.6. Flag State and Classification Society Rules

Although flag state and classification society rules may include similar requirements, the *Accord Acts* and *OHS Regulations* must be complied with regardless of any exemptions that have been granted from flag state or the classification society.

3.0 Purpose and Scope

The purpose of this Guideline is to provide clarity to operators, employers and others with statutory responsibilities (e.g., employees, supervisors, providers of services, suppliers) in the *Accord Acts* or the *OHS Regulations*. This Guideline applies to all workplaces in the *Offshore Area* and to all passenger craft (where specified) going to, from or in-between those workplaces. This Guideline does not apply to any vessel or aircraft operating as a support craft as defined in regulations under Part III of the *Accord Acts*. Although sections of the *Accord Acts* and the *Framework Regulations* may be referenced in the Guidelines, the onus is on those with

⁶ C-NLAAIA 205.016, 205.021; CNSOPRAIA 210.016, 210.021

⁷ C-NLOPB – www.cnlopb.ca; CNSOPB – www.cnsopb.ns.ca

statutory responsibilities to refer to the *Accord Acts*, the *OHS Regulations* and the *Framework Regulations* for the requirements, using this Guideline as only a supplement.

4.0 Guideline

PART 1: GENERAL

Section 1 - Definitions

1(1) The following definitions apply in these Regulations.

accommodations area means the area of a marine installation or structure that contains the sleeping quarters, dining areas, food preparation areas, general recreation areas, office areas and medical rooms, and includes all washrooms in that area.

Act means the Canada–Newfoundland and Labrador Atlantic Accord Implementation Act (or the Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act).

advanced first aid certificate means a certificate evidencing the holder’s successful completion of a training program whose curriculum conforms to the curriculum for advanced first aid set out in CSA Group standard Z1210, First aid training for the workplace – Curriculum and quality management for training agencies, or, in the case of marine crew on a vessel, whose curriculum conforms to Chapter 4 of Department of Transport publication TP 13008, Training Standards for Marine First Aid and Marine Medical Care.

ANSI means the American National Standards Institute.

ASME means the American Society of Mechanical Engineers.

biological exposure index means the biological exposure index established for a substance or agent by the American Conference of Governmental Industrial Hygienists in its publication TLVs and BEIs: Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices.

competent person means a person who, in respect of a task,
(a) has the knowledge, training and experience necessary to do the task in a manner that protects the health and safety of all persons at the workplace; and
(b) has knowledge of the provisions of the Act, these Regulations and the occupational health and safety program that apply to the task and of the potential or actual danger that the task poses to health or safety of persons.

confined space means an enclosed or partially enclosed space that

(a) is not designed or intended for human occupancy except on a temporary basis for the purpose of performing a specific task;

(b) is or may become hazardous to a person in it, including by reason of its design, construction, location or atmosphere or the materials or substances it contains, without regard to any protection that may be afforded to the person through the use of personal protective equipment or additional ventilation; and

(c) has restricted means of access and egress, or an internal configuration, that could make first aid, evacuation, rescue or other emergency response services difficult to provide.

de-energized, in respect of any equipment, machine, device or system or any component of one of those things, means that it is disconnected from all energy sources and void of any residual or stored energy.

dive project means any work or activity for which an authorization to dive has been issued.

electrical equipment means equipment that uses electricity or that is used for the generation or distribution of electricity.

energized, in respect of an electrical conductor, a circuit part or electrical equipment, means that it is a source of voltage or is electrically connected to a source of voltage.

energy includes electrical, mechanical, hydraulic, pneumatic, chemical, radiant, thermal and gravitational energy.

energy-isolating device means a device that physically prevents the transmission or release of energy or a substance that is a source of energy, including

(a) a manually operated electrical circuit breaker;

(b) a disconnect switch;

(c) a manually operated switch by means of which the conductors of a circuit can be disconnected from all ungrounded supply conductors;

(d) a valve; or

(e) a blind, blank or blocking seal.

environmental conditions means meteorological, oceanographical and other natural conditions, including ice conditions, that may affect operations at a workplace.

first aider means a person who holds a valid standard first aid certificate or advanced first aid certificate or who meets the requirements referred to in subsection 33(1) but is not a medic.

hazard information, in respect of a hazardous substance, means information respecting the health and physical hazards posed by the substance and respecting its proper and safe storage, handling, use and disposal.

hazardous product has the same meaning as in section 2 of the Hazardous Products Act.

high-pressure washing means the use of water or another liquid delivered from a pump at a pressure exceeding 10 MPa, with or without the addition of solid particles, to remove unwanted matter from a surface.

hot work means any work or activity, other than the use of explosives, that involves the use of or is likely to produce fire, sparks or another source of ignition.

IMO Resolution MSC.81(70) means the annex to International Maritime Organization Resolution MSC.81(70), Revised Recommendation on Testing of Life-Saving Appliances.

lockout means the securing, in accordance with the procedures referred to in paragraph 142(b), of a lockout device on an energy-isolating device that is being used to isolate the energy source of a piece of equipment, machine, device or system.

lockout device means a device that prevents the manipulation or removal of an energy-isolating device.

LSA Code means the annex to International Maritime Organization Resolution MSC.48(66), International Life-Saving Appliance (LSA) Code.

materials handling equipment means equipment, other than an elevator or personnel lift, that is used to transport, lift, move or position things or persons and includes gear and devices used in conjunction with other equipment in carrying out those functions.

medic means a person designated under subsection 33(1).

mobile equipment means wheeled or tracked materials handling equipment that is engine- or motor-powered, together with any attached or towed equipment.

occupational health and safety program means the occupational health and safety program referred to in section 205.02 (or 210.02) of the Act.

pipng system means an assembly of pipes, pipe fittings, valves or other control or safety devices, pumps, compressors and other fixed equipment.

professional engineer means a competent person who is registered or licensed to engage in the practice of engineering under the laws of the province in which they practise.

rated capacity means the maximum load that equipment can handle or support safely, including, if applicable, in a given operational position or configuration, without regard to environmental conditions.

safety data sheet has the same meaning as in section 2 of the Hazardous Products Act.

specialized dive physician means a physician who is licensed to practise medicine in Canada and
(a) meets the competencies of a Level 3 Physician set out in CSA Group standard Z275.4, Competency standard for diving, hyperbaric chamber, and remotely operated vehicle operations; or
(b) possesses a diploma in hyperbaric medicine with a focus on diving medicine from the Royal College of Physicians and Surgeons of Canada and has completed training in saturation diving medicine that is recognized by that College.

standard first aid certificate means a certificate evidencing the holder's successful completion of a training program whose curriculum conforms to the curriculum for intermediate first aid set out in CSA Group standard Z1210, First aid training for the workplace – Curriculum and quality management for training agencies or, in the case of marine crew on a vessel, whose curriculum conforms to Chapter 3 of Department of Transport publication TP 13008, Training Standards for Marine First Aid and Marine Medical Care.

threshold limit value means the threshold limit value established for a substance or agent by the American Conference of Governmental Industrial Hygienists in its publication TLVs and BEIs: Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices.

work area means the specific area in which an employee carries out their tasks.

work permit means a permit referred to in section 53.

Definitions under Part III.1 of Act

(2) The following definitions apply for the purposes of Part III.1 of the Act.

diving operation means any work or activity related to a dive — including any work or activity involving a diver or carried out by a person assisting a diver —that takes place from the start of pressurization or descent to the end of depressurization or ascent.

incident means an event that resulted in any of the following occurrences or in which any of the following occurrences was narrowly avoided:

- (a) death;**
 - (b) serious injury within the meaning of subsection 205.017(5) (or 210.017(5)) of the Act;**
 - (c) missing person;**
 - (d) fire or explosion;**
 - (e) collision;**
 - (f) exposure to a hazardous substance in excess of the threshold limit value or biological exposure index for that substance;**
 - (g) impairment of any structure, facility, equipment or system critical to the safety of persons;**
- or**

(h) implementation of emergency response procedures.

Refer also to definitions under Part III.1 of the *Accord Acts* and as discussed above under Section 2 of this Guideline. When applying the *Accord Acts* and the associated regulations, particular attention must be paid to any defined terms and how they are referenced within the regulations.

Section 2 – Referenced Documents

Incorporation by reference

2 (1) In these Regulations, any incorporation by reference of a document is an incorporation by reference of that document as amended from time to time.

Bilingual documents

(2) Despite subsection (1), if a document that is incorporated by reference is available in both official languages, any amendment to it is incorporated only when the amended version is available in both official languages.

Amended from time to time

Recognizing that documents incorporated by reference in the *OHS Regulations* can be amended from time to time, operators and employers are responsible for ensuring that the latest revision is used. Operators and employers need to assess the changes that were made and determine whether they are still in conformance with the incorporated sections of the referenced document. Processes should be established to review and implement any changes.

Documents Incorporated by Reference

Several sections of the *OHS Regulations* require “conformance to” or “in accordance with” all or part of a particular document (e.g., code, standard, manual, guideline). This is known as incorporation by reference and the operator and employer must comply with the incorporated document as they would any other legislative requirement. The operator and employer may use other documents (e.g., codes, standards) in combination with other measures as long as they meet or exceed the requirements of the incorporated document, paying particular attention to any mandatory requirements (e.g., markings).

Pursuant to the *Accord Acts*⁸, operators and employers must be able to demonstrate compliance with any regulatory requirement, including any document that has been incorporated by reference in the *OHS Regulations*. This demonstration may be requested during the application for authorization pursuant to the *Accord Acts*⁹ or during subsequent monitoring or compliance verification activities by the *Regulator*.

Where the operator or employer does not meet or exceed the requirements of an incorporated section of a document, they may apply for a substitution (refer to the RQ process described in section 2.3 of this Guideline). To assist with this determination, the following table has been provided:

| Summary of Requirement | Example Scenarios | Typical Action |
|---|--|--|
| Protective Headwear (ss. 46(e)) conforms to CSA Z94.1 other than provisions of that standard that pertain to marking. | <p>Scenario 1: Equipment does not meet the requirements of CSA Z94.1.</p> <p>Scenario 2: Equipment meets and is certified to ANSI standards and meets or exceeds requirements of CSA Z94.1.</p> | <p>Scenario 1: Replace equipment or apply for an RQ.</p> <p>Scenario 2: No RQ is required.</p> |
| Fall Protection (p. 109(1)(d)) conforms to CSA Z259 series (including markings). | <p>Scenario 1: Equipment meets previous version of CSA Z259, but does not meet current version of CSA Z259. There was a change made to a requirement between previous versions which results in a non-compliance that can't be corrected.</p> <p>Scenario 2: Equipment meets and is certified to EN standards and meets or exceeds requirements of CSA Z259, but is not marked 'CSA'.</p> | <p>Scenario 1: Replace equipment or apply for an RQ.</p> <p>Scenario 2: Replace equipment or apply for an RQ.</p> |
| Wire Rope Slings (p.125(2)(a)) conforms to ASME B30.9 (including markings) | <p>Scenario 1: Equipment meets ASME B30.9 but it does not contain the name or trademark of the manufacturer.</p> <p>Scenario 2: Equipment meets previous version of ASME B30.9, but does not meet current version of ASME B30.9. There was a change made to a requirement between previous versions which results in a non-compliance that can't be corrected.</p> <p>Scenario 3: Equipment meets and is certified to ISO standards and meets or exceeds requirements of ASME B30.9, including markings (i.e., identification).</p> | <p>Scenario 1: Replace equipment or apply for an RQ.</p> <p>Scenario 2: Replace equipment or apply for an RQ.</p> <p>Scenario 3: No RQ is required.</p> |
| Elevators | Scenario 1: | Scenario 1: |

⁸ C-NLAAIA 194(1), 205.104(1); CNSOPRAIA 199(1); 210.106(1)

⁹ C-NLAAIA 205.068; CNSOPRAIA 210.069

| | | |
|---|---|--|
| <p>(ss. 93(1)) – designed, maintained, tested, inspected and used in accordance with ASME A17.1/CSA B44</p> | <p>Existing elevators meet the previous version of ASME A17.1/CSA B44, but do not meet the applicable sections within the current version of ASME A17.1/CSA B44. There was a change made to a requirement between previous versions which results in non-compliance.</p> <p>Scenario 2: Existing elevators meet other standards for design and meet or exceed the <u>design</u> requirements of ASME A17.1/CSA B44. However, the other standards do not include the <u>use and certification</u> of elevators, the <u>training</u> of persons or <u>additional</u> maintenance, inspection, and testing activities as described in ASME A17.1/CSA B44. To ensure conformance, other measures must be implemented within the management system to meet the requirements of ASME A17.1/CSA B44.</p> <p>Scenario 3: Existing elevators meet other standards for design, maintenance, testing, inspection and use but they do not meet or exceed the applicable requirements of ASME A17.1/CSA B44.</p> | <p>Lockout equipment or apply for an RQ.</p> <p>Scenario 2: No RQ is required</p> <p>Scenario 3: Lockout equipment or apply for an RQ.</p> |
|---|---|--|

A summary of all documents that have been incorporated by reference in the *OHS Regulations* is provided in the [Bibliography](#).

Normative vs. informative information

When a document is incorporated by reference, there should be an understanding of the differences between normative (i.e., mandatory - shall, must) and informative (i.e., non-mandatory references - should, may). Unless otherwise stated in the regulation, normative information is a mandatory requirement and informative information should be treated as advice or recommendations.

An example of the different types of references in *CSA Z94.4 use, and care of respirators* is provided below; however, this should be read in conjunction with the manner this document is referenced in the regulation:

Normative References

- Clause 10.3.2 of *CSA Z94.4* states that compressed breathing oxygen **shall** meet the purity requirements of CGA G-4.3. This is an example of a normative reference within a standard to another standard.
- *CSA Z94.4* indicates that equipment **shall** meet Annex B and Annex C. These are examples of normative annexes/appendices.

Informative References

- Clause 10.2.2.5.1 of *CSA Z94.4* indicates that the requirements of NFPA 1981 **should** be consulted for additional performance requirements for SCBAs for firefighting. This is an example of an informative reference within a standard to another standard (Note, however, that design and performance requirements of NFPA 1981 is a prescriptive requirement of the *OHS Regulations*).
- *CSA Z94.4* indicates that Annex A **should** be considered. This is an example of an informative annex/appendix.

Other Documents Referenced in this Guideline

When a document is referenced only in this Guideline and is not a document that is incorporated by reference in the *OHS Regulations*, it is being identified as a source of related good practice information for consideration. In these cases, the *Regulator* has included guidance notes with respect to application of the document. Unless otherwise specified, all information within the document, whether it is normative or informative, should be considered.

A summary of all documents that have been referenced in the OHS Guideline is provided in the [Bibliography](#). Some of these documents are also incorporated by reference in the *OHS Regulations* and as such, have a note included. The revision date at the time of issuance of this Guideline is included in the [Bibliography](#). The onus is on the operator and employer to evaluate any changes to these documents to ensure continued appropriateness.

Section 3 - Inconsistency or Conflict

3(1) In the event of any inconsistency or conflict among provisions of these Regulations, including those that incorporate documents by reference, the provision that imposes the most stringent requirement applies.

Other regulations

(2) In the event of any inconsistency between an obligation imposed by these Regulations and an obligation in respect of occupational health and safety that is imposed by the Newfoundland (or Nova Scotia) Offshore Petroleum Installations Regulations or the Newfoundland (or Nova Scotia) Offshore Petroleum Drilling and Production Regulations, these Regulations prevail, regardless of whether the obligations are imposed on the same person.

No guidance required at this time.

PART 2: OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT AND OVERSIGHT

Section 4 - Occupational Health and Safety Policy

4 The occupational health and safety policy referred to in section 205.011 (or 210.011) of the Act must contain

(a) the commitment of the operator to cooperate with any committee or coordinator, as the case may be, with regard to health and safety; and

(b) an overview of the duties of all persons under Part III.1 of the Act.

- OHS policies are typically developed at the corporate level. These policies should be reviewed to ensure that the requirements of the *Accord Acts* are sufficiently incorporated.
- Requirements for the content, review, consultation, implementation and posting of the OHS policy are prescribed in the *Accord Acts*¹⁰.
- The respective roles and responsibilities for all workplace parties (operator, employer, employee, supervisors, workplace committee, providers of services, suppliers, owners, interest holders, etc.) are prescribed in the *Accord Acts*. The operator has the overall responsibility for OHS¹¹.
- Achieving a healthy and safe workplace starts at the top. Strong leadership and commitment of senior managers and directors are fundamental to the success of health and safety management. An effective OHS policy sets clear direction for the organization and establishes senior manager's commitment in a written statement. In turn, an effective management structure must be in place for delivering the OHS policy.
- The OHS policy should be signed by the most senior accountable official of the operator (e.g., the same person who signs the *Declaration of Fitness*) and should be updated whenever there is a change to either the policy itself or the person that signed it.

Sections 5 – 6 - Occupational Health and Safety Management System and Program

5 (1) The occupational health and safety management system referred to in section 205.015 (or 210.015) of the Act must set out procedures for

(a) setting goals for the improvement of workplace health and safety, identifying specific targets against which the attainment of those goals is to be measured and reviewing those goals and targets at least annually;

(b) ensuring that employees

(i) are competent persons in respect of all tasks to be carried out by them,

¹⁰ C-NLAAIA 205.011, 205.015, 205.02 and 205.037; CNSOPRAIA 210.011, 210.015, 210.02 and 210.037

¹¹ C-NLAAIA 205.01; CNSOPRAIA 210.01

- (ii) are kept aware of activities and occurrences that may have an impact on their health or safety at the workplace, and*
 - (ii) are supervised to ensure that they perform their duties safely;*
- (c) ensuring that the most recent versions of all documents associated with the system are readily available to all persons at the workplace;*
- (d) collecting, managing and analyzing data with respect to occupational health and safety, including hazards, occupational disease, accidents, incidents and other hazardous occurrences, and identifying trends in that data; and*
- (e) keeping training and competency records in respect of employees, including workplace committee members.*

Auditing

- (2) The audit referred to in paragraph 205.015(2)(g) (or 210.0015(2)(g)) of the Act must be carried out at as soon as practicable after each of the following occurrences and, in any event, at least once every three years:*
 - (a) any change of circumstances that may affect the health and safety of persons at the workplace;*
 - (b) the provision by a health and safety officer to the operator of a report under subsection 205.074(1) (or 210.075(1)) of the Act indicating non-compliance with Part III.1 of the Act; and*
 - (c) the making by a health and safety officer of an order under section 205.092 (or 210.093) or 205.093 (or 210.094) of the Act in relation to the workplace.*

Improvements

- (3) The operator must implement any improvements identified during the audit referred to in paragraph 205.015(2)(g) (or 210.015(2)(g)) of the Act as soon as practicable.*

Occupational Health and Safety Program

- 6 (1) Every occupational health and safety program must*
 - (a) set out procedures for ensuring that all employees at the workplace comply with the program and with Part III.1 of the Act and all regulations made under that Part;*
 - (b) set out procedures for ensuring that employees are competent persons in respect of all tasks to be carried out by them and are kept aware of activities and occurrences that may have an impact on their health or safety at the workplace;*
 - (c) set out procedures for keeping training and competency records in respect of employees;*
 - (d) set out procedures for keeping records necessary for the auditing of the program;*
 - (e) set out procedures and schedules that conform to paragraph 205.019(1)(p) (or 210.019(1)(p)) of the Act for carrying out inspections for the purpose of hazard identification;*
 - (f) prioritize the implementation of hazard control measures in the following order:*
 - (i) measures that involve the elimination of hazards,*
 - (ii) measures that involve the selection of less hazardous means of carrying out work and activities,*

- (iii) measures that involve the use of engineering controls to reduce the risks posed by hazards,*
- (iv) measures that involve the use of administrative controls to reduce the risks posed by hazards, and*
- (v) measures that involve protection from the effects of hazards;*
- (g) identify the persons responsible for implementing hazard control measures, including after an occupational disease, accident, incident or other hazardous occurrence;*
- (h) set out procedures for*
 - (i) the reporting of hazards by persons at the workplace to the employer, and*
 - (ii) the reporting, by the employer to a committee or to the coordinator, of hazards, occupational diseases, accidents, incidents, other hazardous occurrences and failures to comply with the provisions of Part III.1 of the Act, the regulations made under that Part or the occupational health and safety requirements of any authorization issued in relation to the workplace;*
- (i) set out procedures for the prompt investigation of occupational diseases, accidents, incidents and other hazardous occurrences to determine their root cause and identify any actions that are necessary to prevent their reoccurrence; and*
- (j) set out procedures for implementing corrective and preventative measures following an occupational disease, accident, incident or other hazardous occurrence and verifying the effectiveness of those measures.*

Auditing

- (2) The audit referred to in paragraph 205.02(2)(h) (or 210.02(2)(h)) of the Act must be carried out at as soon as practicable after any of the following occurrences and, in any event, at least once every three years:*
 - (a) any change of circumstances that may affect the health and safety of persons at the workplace;*
 - (b) any change made by the operator to its management system;*
 - (c) the provision by a health and safety officer to the employer of a report under subsection 205.074(2) (or 210.075(2)) of the Act indicating non-compliance with Part III.1 of the Act; and*
 - (d) the making by a health and safety officer of an order under section 205.092 (or 210.093) or 205.093 (or 210.094) of the Act in relation to the workplace.*

Improvements

- (3) The employer must implement any improvements identified during the audit referred to in paragraph 205.02(2)(h) (or 210.02(2)(h)) of the Act as soon as practicable.*
-
-

General

- Requirements for principles, duties, communication of information, the OHSMS, the OHS program and consultation with the workplace committee are in the *Accord Acts*¹². The following must be considered:
 - Refer to the definitions in the *Accord Acts* and the associated duty provisions for operators, employers, supervisors, employees, suppliers, providers of services, owners, interest holders, directors and officers.
 - All workplace parties (e.g., operators, employers, employees, supervisors, providers of services and suppliers) have a shared duty and responsibility to implement and assume accountability for the OHSMS and the OHS program.
 - Both the employer and the operator have responsibilities for an employee who is working in the *Offshore Area*. The responsibility of each party would be defined by the party's ability and authority to control the work (i.e., extent of control) at the workplace and the environment in which the work is being done.
 - Particular attention should be paid to any responsibilities placed on the “employer with control of the workplace” or the “employer”. When “employer” is used this is interpreted to mean all “employers” present at the workplace.
 - While the regulations may specify “operator”, “employer with control of the workplace” or “employer”, pursuant to the *Accord Acts*¹³ “the imposition of any specific obligation under this Part must not be construed as limiting the generality of any other obligation under this Part.”
 - The management system should also cover the following processes:
 - **Right to Know** - The right to know includes the right to be aware of all credible hazards and the systems in place to mitigate risk associated with these hazards. Leaders should ensure processes are in place to communicate all hazards and measures to all persons.
 - **Right to Participate** – The right to participate includes not only participation in workplace committees, but also the more general right for persons to be consulted on and have input into the management system.
 - **Right to Refuse** - The right to refuse dangerous work and the process persons follow to exercise this right at the workplace or on a passenger craft as required by applicable legislation.
- With respect to all works or activities done in the *Offshore Area*, refer to the following:
 - The requirement for a *Declaration of Fitness* pursuant to the *Accord Acts*¹⁴, which applies to all equipment, procedures and training.
 - The requirements and associated guidance for management systems in Part 3 of the *Framework Regulations*.
 - The requirements and associated guidance for information which accompanies an application under section 8 of the *Framework Regulations*. In NL, additional guidance for

¹² C-NLAAIA 205.01, 205.012, 205.013, 205.014, 205.015, 205.018, 205.02, 205.037 and 205.043; CNSOPRAIA 210.01, 210.012, 210.013, 210.014, 210.015, 210.018, 210.02, 210.037 and 210.043

¹³ C-NLAAIA 205.01(2); CNSOPRAIA 210.01(2)

¹⁴ C-NLAAIA 139.1; CNSOPRAIA 143.1

applications for authorizations are provided in the *Guideline for Petroleum-Related Authorizations and Approvals*.

Industry Standards

Additional guidance on the content of an OHSMS and an OHS program can be found in *ISO 45001 Occupational health and safety management systems – requirements* and the *International Safety Management (ISM) Code*.

Culture of Workplace Safety

Pursuant to the *Accord Acts*¹⁵, the OHSMS and OHS program must foster a culture of workplace safety. An effective management system can help organizations reduce or prevent injuries, illnesses and fatalities in the workplace by providing a framework for corporate behaviour in OHS management. The successful implementation of an OHSMS and the occupational health and safety program depends on commitment, leadership, and worker participation to achieve its outcomes. Guidance on the cultural threats that should be mitigated and the associated defenses that should be put in place are provided in the CER, C-NLOPB and CNSOPB “*Statement on Safety Culture*” which is available on the *Regulator’s* respective websites¹⁶. Some other standards to consider when establishing an appropriate safety culture include:

- *IOGP Report No. 452 Shaping safety culture through safety leadership*
- *IOGP Report No. 453 Safety Leadership in Practice: A guide for managers*
- *Center for Offshore Safety Publication COS-3-04 Guidelines for Robust Safety Culture*

Risk Assessments and Hierarchy of Controls

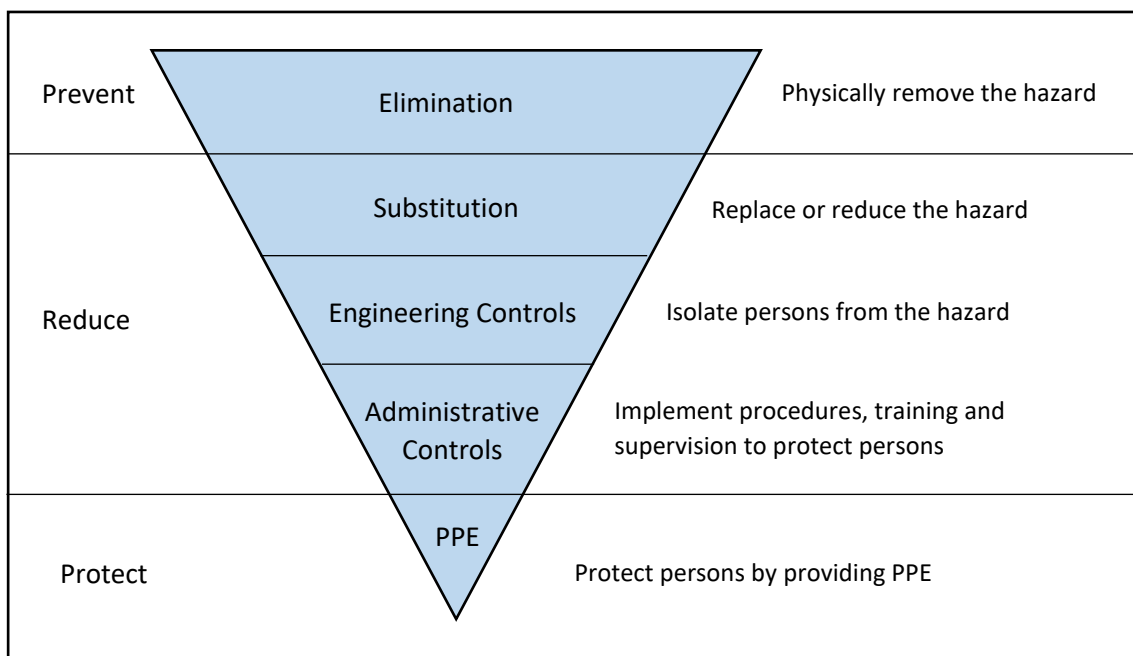
The successful implementation of an OHSMS and an OHS program depends on a thorough identification and management of all hazards in the workplace, which must be undertaken up front and continually for the duration of the work or activity. Risk assessments must be performed pursuant to the *Accord Acts*¹⁷ and the implementation of preventive measures should apply the principal of the hierarchy of controls¹⁸. This principal should first aim to eliminate the hazard, then reduce the risks posed by the hazard and finally, the taking of protective measures to mitigate the risk. Guidance for risk assessments is provided in *CSA Z1002 Occupational health and safety – Hazard identification and elimination and risk assessment*. The hierarchy of controls are typically selected as follows, with elimination providing the best safeguard against a particular hazard:

¹⁵ C-NLAAIA 205.015(2) and 205.02(1); CNSOPRAIA 210.015(2) and 210.02(1)

¹⁶ C-NLOPB – www.cnlopb.ca; CNSOPB – www.cnsopb.ns.ca

¹⁷ C-NLAAIA 205.009, 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009, 210.015(2)(a) and 210.02(2)(a)

¹⁸ C-NLAAIA 205.009(2); CNSOPRAIA 210.009(2)



Auditing

With respect to subsections 5(2) and 6(2) of the *OHS Regulations*, auditing should focus on the section of the OHSMS and OHS program to which the change or non-compliance was identified. With respect to auditing, the *Accord Acts*¹⁹ also contain requirements for a failure to comply with an OHS requirement and for identifying and implementing improvements and measures to rectify failures or to prevent further failures. Preventive measures should be identified to address the immediate cause(s), and where appropriate, address the root cause(s) of any noted non-compliances. The hierarchy of controls principal as described in the *Accord Acts*²⁰ must be applied.

Section 7 – Workplace Committees or Coordinators

7 (1) A workplace committee that establishes rules of procedure must include among them

- (a) the quorum required for committee meetings;**
- (b) the manner in which the committee will address complaints or concerns of employees, work refusals, occupational diseases, accidents, incidents and other hazardous occurrences that are reported to it;**
- (c) a rule whereby a complaint or concern raised with any committee member is to be considered a complaint or concern raised with the committee as a whole; and**

¹⁹ C-NLAAIA 205.013(l)(m)(n)(r), 205.015(2)(a)(f)(g)(h), 205.019(1)(l), 205.02(2)(a)(g)(h)(i); CNSOPRAIA 210.013(l)(m)(n)(r), 210.015(2)(a)(f)(g)(h), 210.019(1)(l), 210.02(2)(a)(g)(h)(i)

²⁰ C-NLAAIA 205.009(2); CNSOPRAIA 210.009(2)

(d) the time and manner in which complaints and concerns are to be responded to and recommendations made under paragraph 205.043(5)(d) (or 210.043(5)(d)) of the Act.

Minutes

(2) Every workplace committee must, for the purpose of paragraph 205.043(4)(d) (210.043(4)(d)) of the Act, provide a copy of the minutes of its committee meetings to any employee on request.

General

- Refer to the requirements under Part III.1 of the *Accord Acts* and any associated reference to “committee” and “coordinator”. For programs with proposed duration of greater than six months, a “workplace committee” must be established in accordance with the *Accord Acts*. If the program is less than six months duration, the operator must designate an employee who has been approved by the CSO to act as an OHS coordinator in respect of that workplace, unless there is already an OHS committee established.²¹ For the use of existing workplace committees or coordinators, refer to specific requirements of the *Accord Acts*.
- The workplace committee or coordinator is required to be consulted on the OHS program, including any specific programs to address prescribed risks that are captured as part of the broader OHS program.
- Additional guidance on the effective functioning of workplace committees and matters under their mandate is provided on the Workplace NL and the Worker’s Compensation Board of Nova Scotia²² websites.
- Workplace committees with rotational management and employees should be set up such that coverage on the workplace committee is maintained between rotations.²³

Training for Workplace Committees

In order that each member of a workplace committee for programs greater than six months can fulfill their duties and functions as a member of the committee, they must be provided instruction and training²⁴. Members of the committee should be provided with training or instruction in the following:

- OHS Committee training should be provided which addresses the *Accord Acts*. If members of the workplace committee have received training under legislation of another authority, members should also be provided with supplemental training to address any differences between that legislation and the *Accord Acts*.
- An overview of the specific programs in place at the workplace.

²¹ C-NLAAIA 205.045; CNSOPRAIA 210.045

²² In NS, refer also to the website for the Department of Labour and Advanced Education.

²⁴ C-NLAAIA 205.013(o) and 205.019(1)(o); CNSOPRAIA 210.013(o) and 210.019(1)(o)

- Training in root cause analysis incident investigation techniques specific to the workplace.
- Any other training that enables the committee to effectively perform their duties including workplace HSE inspections, behavioral-based observation programs, etc.
- An overview of the Committee Rules of Procedure (also referred to as Terms of Reference) specific to the workplace.

With respect to workplace committees or to coordinators (for programs less than six months), training in health and safety to enable them to fulfill their duties and functions is to be provided pursuant to the *Accord Acts*.

Rules of Procedure for Workplace Committees

Workplace committees for programs greater than six months may establish rules of procedure (also referred to as a terms of reference), which incorporate requirements of the *Accord Acts* and subsection 7(1) of the *OHS Regulations*²⁵. Where a workplace committee establishes rules of procedure, these rules must include:

- the quorum for workplace committee meetings according to paragraph 7(1)(a) of the *OHS Regulations*;
- procedures for the workplace committee's role in employee complaints, concerns and work refusals; and
- procedures for the workplace committee's role in handling, reporting and investigating of occupational diseases, accidents, incidents and hazardous occurrences.

The committee rules of procedure should also include:

- the organizational structure of the workplace committee;
- any mandatory or recommended training of workplace committee members;
- the frequency of workplace committee meetings to ensure adequate representation from each shift and rotation, as applicable; and
- procedures for:
 - workplace inspections and audits;
 - raising and closure of recommendations; and
 - review of and recommendations for improvement to the OHS policy, OHSMS and associated programs.

Meeting Frequency of Workplace Committees

Workplace committee meetings on drilling and production installations should be held at least once per rotation (e.g., every three weeks) or more often, as may be required.²⁶

²⁵ C-NLAAIA 205.044(5); CNSOPRAIA 210.044(5)

²⁶ C-NLAAIA 205.044(3); CNSOPRAIA 210.044(3)

Meeting Minutes of Workplace Committees

To aid the operator in its overall coordination role and to help demonstrate the effective functioning of the workplace committee (for programs greater than six months) to the *Regulator*, it is recommended that the minutes of workplace committee meetings be submitted directly to the operator and to the *Regulator* as soon as possible after each meeting, including any “emergency” or “ad hoc” meetings. As appropriate, meeting minutes should be emailed to either information@cnlopb.ca or info@cnsopb.ns.ca. The CSO may, if necessary, request distribution of minutes to these (or other) persons²⁷.

Meeting minutes should contain:

- a list of all attendees, including management representatives, employee representatives and any observers;
- the status of relevant workplace committee training of all attendees;
- the signature of the chair and co-chair (additional pages should include the initials of these individuals on each page);
- a list of all activities that the workplace committee participated in since its last meeting should be summarized including:
 - review of OHSMS, associated programs and procedures, incident investigations, hazard reports and behavioral-based observations;
 - engagement in any workplace inspections or audits; and
 - investigation of any incidents, complaints or work refusals;
- a list of all items that were raised along with the date raised, action taken to date and the date resolved (NB: Items to address should be kept on the minutes until resolved); and
- any items raised should be reviewed and accepted by the workplace committee (including committees that are rotational based) before they are removed from the minutes.

An effort should be made to keep discussions during committee meetings limited to health and safety issues or any item to be covered under the committee mandate according to their rules of procedure. As an example, any issues raised related to labour relations should be directed to those responsible for managing those inquiries.

The CSO may also request that meeting minutes include the above (or additional) information, if necessary²⁸. With respect to workplace committees or coordinators for programs less than six months, the CSO may also request meeting minutes or a summary of activities completed²⁹.

Workplace Committee Engagement in Investigations

Workplace committee members and coordinators have the authority to be involved in OHS-related incident investigations, including those which occur on a passenger craft while passengers

²⁷ C-NLAAIA 205.043(4)(d); CNSOPRAIA 210.043(4)(d)

²⁸ C-NLAAIA 205.043(4)(d); CNSOPRAIA 210.043(4)(d)

²⁹ C-NLAAIA 205.045(2)(c); CNSOPRAIA 210.045(2)(c)

are being transported to or from or between workplaces in the *Offshore Area*.³⁰ With respect to workplace committees:

- Procedures should provide clarity on how and when the workplace committee will decide to participate in OHS-related incident investigations and specifically which member(s) will be involved.
- Workplace committee member(s) selected should not have been involved with or contributed directly or indirectly to the incident.

The CSO may also assign the above (or additional) duties to a workplace committee or coordinator³¹.

Section 8 – Record Keeping

8 All records that are required under the Act to be kept must be maintained in a manner that ensures their accessibility.

No guidance required at this time.

Section 9 – Posting of Documents

9 (1) The period for which an operator or employer, as the case may be, must ensure that a document is posted under paragraph 205.097(4)(a) (or 210.098(4)(a)) of the Act is at least 45 days.

(2) If a decision or order is appealed under subsection 205.1(1) (or 210.101(1)) of the Act, the operator or employer, as the case may be, must ensure that all related documents referred to in paragraphs 205.097(1)(a) to (d) (or 210.098(1)(a) to (d)) of the Act remain posted until the 45th day after the day on which the decision or order is revoked, confirmed or varied under subsection 205.1(6) (or 210.101(9)) of the Act.

No guidance required at this time.

³⁰ C-NLAAIA 205.043(5), 205.045(2)(a); CNSOPRAIA 210.043(5), 210.045(2)(a)

³¹ C-NLAAIA 205.043(4)(e), 205.045(2)(d); CNSOPRAIA 210.043(4)(e), 210.045(2)(d)

PART 3: REPORTING AND INVESTIGATION (Sections 10 – 14)

Report to supervisor or employer

10 An employee who becomes aware of an occupational disease or an accident, incident or other hazardous occurrence at the workplace must, without delay, report it to their supervisor or their employer, orally or in writing.

Report to employer with control

11 A supervisor to whom or employer to which – if that employer does not have control over the workplace - an occupational disease, accident, incident or other hazardous occurrence is reported under section 10 must, without delay, report it to the employer with control over the workplace, orally or in writing.

Employer Obligations

12 An employer that becomes aware of an occupational disease or an accident, incident or other hazardous occurrence at a workplace under its control must, without delay,
(a) take all necessary measures to ensure the health and safety of all persons at the workplace;
and
(b) provide to the operator, in writing, a brief description of the occupational disease, accident, incident or other hazardous occurrence, including the name of any affected persons and, if applicable, the date on which and the time and location at which it occurred.

Notification of Chief Safety Officer

13 An operator that is required under subsection 205.017(1) (or 210.017(1)) of the Act to notify the Chief Safety Officer of an occupational disease, accident, incident or other hazardous occurrence must do so in writing.

Investigation

14 (1) An operator that is required, under subsection 205.017(2) (or 210.017(2)) of the Act, to investigate an occupational disease, accident, incident or other hazardous occurrence must obtain, within 14 days after the day on which it becomes known to the operator, a report, prepared by a competent person and accompanied by supporting documentation, that sets out, in respect of the disease, accident, incident or other occurrence and to a level of detail that is proportional to its actual or potential severity,
(a) in the case of an accident, incident or other hazardous occurrence, the date on which and the time and location at which it occurred;
(b) the name of the affected employee, if any;
(c) a description of it and of any resulting symptoms or injury;

- (d) a description of the treatment provided, if any;**
- (e) its causal factors and root causes;**
- (f) other information relevant to its nature or impact; and**
- (g) corrective and preventative measures that could be taken to prevent a similar situation from reoccurring.**

Report

- (2) The operator must submit a copy of the report and supporting documentation without delay to**
 - (a) the workplace committee or the coordinator, as the case may be; and**
 - (b) the Chief Safety Officer.**

Material change

- (3) If the operator becomes aware of new information that may result in a material change to the report, the operator must obtain an updated report and supporting documentation and submit a copy without delay to the persons referred to in paragraphs (2)(a) and (b).**

Records

- (4) For the purpose of subsection 205.017(2) (or 210.017(2)) of the Act,**
 - (a) the records that every operator must keep include all reports obtained under subsection (1) or (3) and their supporting documentation; and**
 - (b) the period for which each record must be retained is**
 - (i) 40 years from the day on which it is made, if it relates to an occupational disease or exposure or potential exposure to a hazardous substance in excess of the threshold limit value or biological exposure index for that substance,**
 - (ii) 10 years from the day on which it is made, if it relates to an incident other than the exposure or potential exposure referred to in subparagraph (i), or**
 - (iii) five years from the day on which it is made, if it relates to any other accident or hazardous occurrence.**

-
- The definition of “serious injury”, requirements for notification to the CSO and requirements for the identification, reporting, investigation and management of hazards, occupational diseases, incidents, accidents and hazard occurrences are provided in the *Accord Acts*³². Requirements with respect to not disturbing the scene of incidents that result in serious injury or death at a workplace or involving a passenger craft are provided in the *Accord Acts*³³.
 - Refer to the definition of “incident” in the *OHS Regulations*.
 - Refer to the *Incident Reporting and Investigation Guideline*.

³² C-NLAAIA 205.015, 205.017 and 205.02; CNSOPRAIA 210.015, 210.017 and 210.02

³³ C-NLAAIA 205.082; CNSOPRAIA 205.083

PART 4: TRAINING – GENERAL (Sections 15 – 17)

Provision of general training

- 15 The training that every employer must provide to each of its employees includes,**
- (a) before the employee is first transported to a workplace and then as necessary to ensure the training remains valid for the duration of the employee’s employment at the workplace,**
 - (i) an offshore survival training program appropriate to the workplace location and to the means of transportation to be used to transport the employee to and from the workplace,**
 - (ii) training on the legislation applicable to occupational health and safety, including the rights of employees and the duties of operators, employers, supervisors and employees, and**
 - (iii) training on hydrogen sulfide safety, if hydrogen sulfide may be present at the workplace; and**
 - (b) without delay on the employee’s arrival at the workplace at which they have not been present in the previous six months and before they perform any work there,**
 - (i) an orientation to the hazards and emergency procedures at the workplace,**
 - (ii) training in respect of any emergency duties that may be assigned to them at that workplace, and**
 - (iii) if the workplace is a marine installation or structure that is equipped with lifeboats, practice in boarding a lifeboat and securing themselves on a seat.**

Competent Person

- 16 Every employer must ensure that all instruction and training that it is required to provide under the Act is developed by and, if applicable, delivered by a competent person.**

Records

- 17 Every employer must retain records of all instruction and training provided under the Act for**
- (a) at least five years after the day on which the person to whom the instruction or training is provided ceases to be employed at any of the employer’s workplaces; or**
 - (b) if the person to whom the instruction or training is provided is not an employee of the employer, at least five years after the instruction or training is provided.**
-

General

- Refer to requirements for instruction, training, qualifications and competency in the *Accord Acts*³⁴ for marine installations or structures and passenger craft, as applicable.
- Refer to the definition of “competent person” in the *OHS Regulations*.
- With respect to section 16 of the *OHS Regulations*, while a “competent person” should provide instruction and training, the required instruction and training to be delivered should consider the requirements of the *Accord Acts* and the *OHS Regulations* and any requirements for experience, qualifications, training, competency or instruction as stated in standards that are referenced within the *OHS Regulations*. If training is delivered using computer-based methods, it must still be developed by a competent person and employees should have access to a competent person for questions.
- Additional guidance on knowledge, qualifications, experience, training and competency for employees and other persons is provided in the COP TQOP.
- With respect to subparagraph 15(a)(iii) of the *OHS Regulations*, while H₂S is a “hazardous substance” normally present on drilling or production facilities, it can be found in other locations. If H₂S is not regularly present in the workplace, but there is a potential for it, informal training should be provided to employees and its presence should always be verified during gas testing. If H₂S is regularly present in the workplace, refer to the COP TQOP for guidance. Refer also to associated requirements and guidance under Part 31: Hazardous Substances of the *OHS Regulations*.
- For vessels and floating platforms, the requirements of the ILO MLC, the STCW and flag state should be considered for orientations and training.

Competency Assurance Program

While training courses will provide employees with a basic understanding in a certain area, operators and employers should ensure that a competency assurance program is implemented at the workplace such that employees are also competent in the specific equipment and procedures in use. One of the hazard control measures to manage risks to health and safety can be the competency assurance program that an operator or employer develops. Employees should be assessed as competent before being assigned unsupervised work tasks.

PART 5: EMERGENCY RESPONSE AND PREPAREDNESS

Section 18 – Emergency Response Plan

18 (1) Every employer must, for each workplace under its control that is a marine installation or structure and having regard to the risk assessment carried out by it for the purpose of the occupational health and safety program, develop, implement and maintain a written

³⁴ C-NLAAIA 205.013(j), (k) and (o), 205.015(2)(d), 205.014(3)(b), 205.019(1)(j) and (o), 205.019(2) and 205.02(2)(b); CNSOPRAIA 210.013(j), (k) and (o), 210.015(2)(d), 210.014(3)(b), 210.019(1)(j) and (o), 210.019(2) and 210.02(2)(b)

emergency response plan in preparation for any reasonably foreseeable emergency that might compromise the health and safety of persons at that workplace or at any other workplace under its control that is a workboat or dive site associated with the marine installation or structure.

Contents of plan

(2) The emergency response plan must

- (a) indicate the maximum number of persons who can safely occupy the workplace;**
- (b) indicate the minimum number of persons needed at the workplace to be able to maintain safe operations in the event of an emergency;**
- (c) set out procedures for ensuring that the personnel on board list, which sets out the total number of persons at the workplace each day and the name, position, employer and, if applicable, cabin number of each, is kept up to date;**
- (d) set out the name and contact information of the operator, if the operator is not the employer with control over the workplace;**
- (e) provide for the establishment of emergency response teams;**
- (f) set out the name, position and contact information, including the usual location, of each person responsible for overseeing the emergency response teams and the implementation of emergency response procedures, as well as the name, position and contact information of those persons' delegates;**
- (g) set out the duties of employees, including members of the emergency response teams, and the procedures to be followed by all persons during an emergency;**
- (h) indicate the muster station or other location where each employee is required to report during an emergency;**
- (i) identify the system to be used for counting employees at each muster station and determining which employees, if any, are missing;**
- (j) include a description of all emergency alarm signals that may be used, including how the order to abandon is to be given;**
- (k) set out contact information for obtaining a means of transportation to be used to evacuate the workplace;**
- (l) identify and set out contact information for all emergency response entities — and other entities operating nearby — that could render assistance in the event of an emergency;**
- (m) include verified drawings of the layout of the workplace that clearly identify the person who verified them, indicate the scale of the drawings and show
 - (i) the location of all exits, fire escapes, stairways, elevators, corridors and other exit routes,**
 - (ii) the location of all muster stations, temporary refuge areas, evacuation stations and other locations where lifeboats and life rafts are stored,**
 - (iii) the location, quantity and type of all equipment that may be used or worn in implementing emergency response procedures,**
 - (iv) the location of manual emergency shutdown and activation devices for all safety critical systems,**
 - (v) the location, quantity and type of all emergency communications equipment,**
 - (vi) the location of all first aid stations, medical rooms and casualty clearing areas, and****

**(vii) the location of all designated hazardous substance storage areas; and
(n) identify all resources necessary for the plan's implementation.**

Availability of plan

(3) The employer must ensure that a copy of the emergency response plan is made readily available to all employees at the workplace.

Multiple employers

(4) If an employer has employees at a workplace not under its control, it must ensure that those employees comply with

(a) the duties and procedures set out in the emergency response plan developed by the employer with control over the workplace; or

(b) emergency duties and procedures that the employer has ensured are aligned with those referred to in paragraph (a).

Emergency Response Plan

- Pursuant to subsection 18(1) of the *OHS Regulations*, the emergency response plan(s) for all marine installations or structures must include plans for addressing all reasonably foreseeable emergency scenarios. Refer to additional guidance on the different types of events provided in the *Contingency Plan Guideline*.
- Emergency response plans and associated procedures should:
 - be clear, concise and easy to use;
 - show the chain of command and lines of communication during any emergency;
 - show the emergency notification protocol (e.g., diagram) between the marine installation or structure, the operator, the *Regulator* and other authorities, as required;
 - be distributed to all relevant persons or organizations that may have a role in the emergency, including support craft or response organizations;
 - have processes in place to ensure contact information is verified and maintained up-to-date; and
 - have processes in place to communicate updates to plans and procedures to all relevant persons or organizations.

Emergency Response Teams

With respect to paragraph 18(2)(e) of the *OHS Regulations*, guidance for emergency response teams is provided in the COP TQOP.

Emergency Response Drawings

With respect to paragraph 18(2)(m) of the *OHS Regulations*, refer to the following:

- Depending on the size of the marine installation or structure, it is acceptable for this information to be provided in separate drawings that cover specific areas or topics (e.g., escape and evacuation vs. fire protection).
- If any additional equipment has been placed onboard for the work or activity, or there have been other changes made (such as movement of equipment or adjusting the capacity or quantity of lifesaving equipment), drawings should be updated.
- Drawings should be stamped and signed by a competent person (e.g., professional engineer) and verified by flag state, classification society and certifying authority, as applicable.

Resources

With respect to paragraph 18(2)(n) of the *OHS Regulations*, refer to the guidance provided in section 8 of the *Contingency Plan Guideline*.

Other Considerations

- Pursuant to section 8 of the *Framework Regulations*, any application for authorization with respect to any work or activity must be accompanied by the associated contingency plan(s), which includes emergency response plan(s). Refer to the guidance provided in the *Contingency Plan Guideline*.
- For a dive project, also refer to the requirements and associated guidance under section 169 of the *OHS Regulations*.
- Reference should also be made to the *Public Health Protection and Promotion Act*³⁵ in NL and the *Health Protection Act*³⁶ in NS, along with any orders that have been issued with respect to the protection of public health, as applicable. (e.g., pandemic/epidemic).

Section 19 – Posting of Information

19 Every employer must ensure that the following items are posted in the specified locations, separately from the emergency response plan, at each workplace under its control that is a marine installation or structure:

(a) a station bill containing the information referred to in subsection 7(1) of the Fire and Boat Drills Regulations as well as a description of any additional alarm signals, the membership of all emergency response teams and the location of all evacuation stations

(i) in conspicuous places on every deck, and

(ii) on the bridge, if the workplace is a vessel, or at the location where the installation manager referred to in section 193.2 (or 198.2) of the Act is expected to be during an emergency, if the workplace is not a vessel;

³⁵ Referred to as the *Communicable Disease Act* under the definition of NL social legislation in section 205.001 of the C-NLAAIA. Refer also to provision for application under section 205.007 of the C-NLAAIA.

³⁶ CNSOPRAIA 210.001 and the provision for application under section 210.007 of the CNSOPRAIA.

- (b) the personnel on board list referred to in paragraph 18(2)(c), at the applicable location referred to in subparagraph (a)(ii); and***
 - (c) a drawing identifying all emergency escape routes from the location at which it is posted***
 - (i) at conspicuous locations around the workplace, and***
 - (ii) in every person's sleeping quarters.***
-

Additional guidance for station bills is provided in the following:

- SOLAS and other associated IMO requirements (e.g., conventions, resolutions and circulars).
- *ISO 15544 Petroleum and natural gas industries - Offshore production installations - Requirements and guidelines for emergency response.*
- Refer also to subsection 7(2) of the Transport Canada *Fire and Boat Drills Regulations*.
- Drilling installations should also consider *IADC HSE Case Guidelines for Mobile Offshore Drilling Units*.

Section 20 – Instruction and Training

20 The instruction and training that every employer must provide to each of its employees includes

- (a) training in the procedures to be followed by the employee in the event of an emergency; and***
 - (b) instruction on the location of any emergency and fire protection equipment that the employee may be reasonably expected to use and training in the use of that equipment.***
-

All Marine Installations or Structures

- Refer to requirements for instruction, training, qualifications and competency in the *Accord Acts*³⁷.
- Requirements and associated guidance for instruction and training, including for emergency response, are provided in Part 4: Training - General of the *OHS Regulations*.
- If it is determined based on risk that other employees (e.g., technical crew, contractors, providers of services) require emergency response training, then appropriate training should be provided.
- Emergency response training should be in accordance with the COP TQOP.
- Additional guidance is provided in the following:
 - SOLAS
 - STCW
 - Any associated requirements of flag state

³⁷ C-NLAAIA 205.013(k), 205.015(2)(d), 205.019(1)(j), 205.019(2) and 205.02(2)(b); CNSOPRAIA 210.013(k), 210.015(2)(d), 210.019(1)(j), 210.019(2) and 210.02(2)(b)

Drilling, Production and Accommodations Installations

- With respect to lifeboat coxswains:
 - Either at the installation or at a shore based facility, they should participate in at least one lifeboat launch each year. In lieu of an annual lifeboat launch, a lifeboat simulator fitted with equipment the same as, or substantially similar to that which is fitted on the installation, and which meets industry guidelines, may be used.
 - They should also receive initial and refresher training for the specific evacuation systems used on the marine installation or structure (davit-launched or free-fall).

Section 21 – Means of Evacuation

21 Every employer must ensure, with respect to each workplace under its control that is a marine installation or structure, that

(a) all muster stations, escape routes, exits, stairways and any other means of evacuation are maintained in serviceable condition and, to the extent feasible, are accessible and ready for use at all times;

(b) all exits to the exterior, muster stations and evacuation stations are clearly identified by illuminated signs or otherwise clearly visible in all conditions; and

(c) all escape routes are clearly identified with light-reflecting or illuminated markings.

- With respect to paragraph 21(a) of the *OHS Regulations*, this includes good housekeeping and ensuring that equipment and escape routes do not become impaired by snow and ice (in winter months) or other conditions. In addition, if activities are planned for winter months, additional measures may be needed to ensure that all means of evacuation (e.g., life-saving appliances) remain in operation.
- SOLAS applies to equipment associated with marine operations; therefore, if additional equipment is placed onboard a marine installation or structure to do a specific work or activity for which that marine installation or structure is not designed or classed (e.g., offshore supply vessel used for geophysical operations), it should be ensured that appropriate escape routes and means of evacuation are provided in compliance with the regulation.
- Pursuant to the *Accord Acts*³⁸, all life-saving appliances must be safe for their intended use. Most life-saving appliances are designed to the LSA Code using an average per passenger weight of 75 kg or 82.5 kg. The lifting capacity, seaworthiness and space provided in life-saving appliances (including lifeboats, life rafts, etc.) should be evaluated and the associated lifting capacity of launching appliances based on an average individual weight of 100 kg (including the immersion suit) or on the actual average individual weight of a person, plus the weight of an average immersion suit. The equipment should be used accordingly and associated evacuation procedures and life-saving plans should be updated based on the results.

³⁸ C-NLAAIA 205.013(g), 205.019(1)(m); CNSOPRAIA 210.013(g), 210.019(1)(m)

Section 22 – Emergency Equipment

22 (1) Every employer must ensure that the location of all equipment to be used or worn in implementing emergency response procedures at each workplace under its control is clearly identified with light-reflecting or illuminated signs.

Grab bags

(2) Every employer must provide, in all sleeping quarters at a workplace under its control, a readily available grab bag for each person assigned to the sleeping quarters containing a smoke hood, heat-resistant gloves and a portable light source to enable the person to reach muster stations, temporary refuge areas and evacuation stations in conditions of fire, intense heat or smoke.

Emergency escape breathing devices or respirators

(3) Every employer must ensure that the emergency escape breathing devices or respirators that it provides in accordance with paragraph 46(a) are provided in appropriate quantities and at appropriate locations at the workplace to facilitate escape, having regard to

(a) the maximum number of persons who may be at the workplace;

(b) how those persons are generally distributed among various areas at the workplace; and

(c) the configuration of the workplace and the potential for a person's ability to move within it to be impeded by hazards arising from the situation that requires escape or from the escape itself.

Immersion suits

(4) Every employer must ensure that the immersion suits that it provides in accordance with paragraph 46(b) are provided in appropriate quantities and sizes and at appropriate locations at the workplace to facilitate abandonment, having regard to

(a) the maximum number of persons who may be at the workplace;

(b) how those persons are generally distributed among various areas at the workplace;

(c) those persons' sizes; and

(d) the configuration of the workplace and the potential for a person's ability to move within it to be impeded by hazards arising from the situation that requires abandonment or from the abandonment itself.

Minimum number required

(5) Despite subsection (4), the employer must provide the following minimum number of immersion suits:

(a) in the case of a workplace that is a marine installation or structure used for drilling or production or as a living accommodation,

- (i) if it is normally attended, two immersion suits for each person at the workplace, including one in the person's sleeping quarters, and*
 - (ii) if it is normally unattended, one immersion suit for each person at the workplace;*
 - (b) in the case of a workplace that is a marine installation or structure used for construction, diving or geotechnical or seismic work, one immersion suit for each person at the workplace, plus two additional suits in each of the bridge and the engine control room; and*
 - (c) in the case of any other workplace, one immersion suit for each person at the workplace.*
-

- Sections 44 – 45 and 49 of the *OHS Regulations* contain general requirements which apply to all personal protective equipment (PPE). Refer also to the definition of “personal protective equipment” and requirements for PPE in the *Accord Acts*³⁹.
- With respect to subsection 22(1) of the *OHS Regulations*, additional guidance on signs can be found in SOLAS and associated IMO resolutions or circulars.
- With respect to subsections 22(4) and (5) of the *OHS Regulations*:
 - Where different sizes are required, immersion suits should be stowed such that they are grouped together by size and the storage locations should be clearly marked with the number of each and their size. One practice is to use color coded bags to identify the different sizes of immersion suits. With respect to paragraph 18(2)(m) of the *OHS Regulations*, the different sizes of immersion suits should also be marked on associated emergency response drawings.
 - Where additional stowage locations are required because of the location of alternate muster areas and evacuation stations, consideration should be given to stowing immersion suits proportionally at these locations.
 - If there is a set of immersion suits to be used only for demonstration or drill purposes, they should be clearly marked for that purpose.
- Requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* also apply to PPE, particularly those requirements for competency, use, inspection, testing and maintenance.

Section 23 – Emergency Alert System

23 Every employer must ensure that each workplace under its control that is a marine installation or structure is equipped with a public address and alarm system that is audible or visible, as the case may be, in all areas of the workplace where a person may be present and is to be used to warn persons if

- (a) the workplace has to be evacuated;***
- (b) a fire is detected;***

³⁹ C-NLAAIA 205.013(i) and (j), 205.019(1)(i), 205.027(b) and (c) and 205.043(5)(c); CNSOPRAIA 210.013(i) and (j), 210.019(1)(i), 210.027(b) and (c) and 210.043(5)(c)

- (c) there is a malfunction of a mechanical ventilation system provided for an area where toxic or combustible gases may accumulate to hazardous levels;**
 - (d) there is a person overboard; or**
 - (e) there is any other threat to the health or safety of persons at the workplace.**
-

- For drilling, production and accommodations installations, refer to the additional requirements for communication systems, general alarm systems and fire and gas detection systems in sections 129, 130 and 132 of the *Framework Regulations*.
- Refer to SOLAS, LSA Code, *International Code for Fire Safety Systems (FSS Code)*, *IMO Resolution A.1021(26) Code on Alerts and Indicators* for guidance on the selection, design, installation, operation and maintenance of fire detection and alarm systems, general alarm systems and public address systems. The following should be noted:
 - SOLAS applies to equipment associated with marine operations; therefore, if additional equipment is placed onboard a marine installation or structure to do a specific work or activity for which that marine installation or structure is not designed or classed (e.g., offshore supply vessel used for geophysical operations), it should be ensured that appropriate fire and gas detection, visual and audible alarms and public address systems are provided.
 - SOLAS does not contain guidance for gas and other hazardous substances (e.g., H₂S), so a risk assessment must be performed pursuant to the *Accord Acts*⁴⁰ to identify if additional measures are necessary.
- Requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to equipment associated with emergency alert systems, particularly those requirements for competency, use, inspection, testing and maintenance.

Section 24 – Emergency Power Source

24 Every employer must ensure that each workplace under its control that is a marine installation or structure is equipped with an emergency power source that is sufficient to operate the following to the degree necessary to allow for safe occupancy of or egress from the workplace in the case of a failure of the main power system:

- (a) the public address and alarm system;**
 - (b) the emergency lighting system;**
 - (c) internal and external communications systems; and**
 - (d) light and sound signals marking the location of the workplace.**
-

- For drilling, production and accommodations installations, refer to requirements for emergency electrical systems in section 126 of the *Framework Regulations*.

⁴⁰ C-NLAAIA 205.009, 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009, 210.015(2)(a) and 210.02(2)(a)

- Requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to equipment associated with emergency electrical power systems, particularly those requirements for competency, use, inspection, testing and maintenance.
- Requirements and associated guidance for lighting and electrical systems are also provided under Part 14: Lighting and Part 27: Hazardous Energy of the *OHS Regulations*, respectively.

Section 25 – Emergency Descent Control

25 (1) Every employer must provide, on each derrick or other elevated part of a workplace under its control that is a marine installation or structure, if there is only one usual means of escape from that location, a device that would allow a person to descend from the location by another means at a controlled speed in an emergency.

Loss of Power

(2) The device must be capable of being operated despite the loss of the main source of power.

Instructions

(3) The employer must ensure that written instructions for operating the device are kept in a conspicuous place near the location where the device is stored.

General

- Sections 44 – 45 and 49 of the *OHS Regulations* contain general requirements which apply to all PPE. Refer also to the definition of “personal protective equipment” and requirements for PPE in the *Accord Acts*⁴¹.
- Pursuant to the *Accord Acts*⁴², all employees and other individuals expected to use the device (i.e., emergency descent control) must be instructed and trained in its use. Employees should also practice its donning and use periodically in a safe location under the supervision of a competent person.
- With respect to other elevated parts of a workplace, a review should be undertaken to identify any locations in the workplace where only one means of access has been provided. This could include offshore pedestal cranes, flare towers or other locations at height.
- Additional guidance is provided in the following:
 - *CAN/CSA-Z259.2.3 Descent Devices*
 - *ISO 22159 Personal equipment for protection against falls — Descending devices*

⁴¹ C-NLAAIA 205.013(i) and (j), 205.019(1)(i), 205.027(b) and (c) and 205.043(5)(c); CNSOPRAIA 210.013(i) and (j), 210.019(1)(i), 210.027(b) and (c) and 210.043(5)(c)

⁴² C-NLAAIA 205.013(j), 205.019(1)(i); CNSOPRAIA 210.013(j), 210.019(1)(i)

- *NFPA 1983 Standard on Life Safety Rope and Equipment for Emergency Services (elements of NFPA 2500 Standard for Operations and Training for Technical Search and Rescue Incidents and Life Safety Rope and Equipment for Emergency Services constitute the 2022 edition of NFPA 1983)*
- Requirements for anchorages are provided in Part 22: Fall Protection and Rope Access of the *OHS Regulations*.
- Requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to emergency descent control devices, particularly those requirements for competency, use, inspection, testing and maintenance.

Selection

Pursuant to the *Accord Acts*⁴³, devices must be safe for their intended use (i.e., suitable for deployment in an emergency situation) and should be selected based on criteria which includes the following:

- Simple to use and able to be installed and donned quickly.
- Suitable for the environment in which they are to be installed and used (e.g., cold temperature or very cold temperature).
- If there is a potential to be exposed to fires, have fire endurance equivalent to the potential exposure.
- If there is a potential to be used in a hazardous gas environment area, are designed such that they do not pose a risk of ignition.

Performance

Once devices are installed, function tests should be undertaken to ensure that the device works appropriately and to confirm that there are no obstructions in its path in accordance with manufacturer's recommendations and adopted standards.

Section 26 – Fire and Explosion

26 (1) Fire and explosion are prescribed risks for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and every employer must ensure that each workplace under its control is designed, constructed, arranged and maintained to minimize those risks.

Hazardous areas

(2) The occupational health and safety program in respect of a workplace that is a marine installation or structure must identify

⁴³ C-NLAAIA 205.013(g), 205.019(1)(m); CNSOPRAIA 210.013(g), 210.019(1)(m)

- (a) all areas at the workplace, as classified according to a comprehensive and documented classification system, in which flammable, explosive or combustible substances are or are likely to be present in sufficient quantities and for sufficient periods of time to require special precautions to be taken in the selection, installation or use of machinery and electrical equipment to prevent a fire or explosion; and**
- (b) the precautions applicable to those areas.**

Signage

- (3) The employer with control over the workplace must ensure that signs are posted in conspicuous places at each of the areas referred to in subsection (2), identifying them as areas in which there is a risk of fire or explosion.**

Prohibition

- (4) The employer must ensure that no person uses an open flame or other source of ignition in an area referred to in subsection (2) unless they are carrying out hot work in accordance with Part 26.**

Temporary or portable heating equipment

- (5) Every employer must ensure that any temporary or portable heating equipment that is used at a workplace under its control is located, protected and used in a manner that prevents the equipment from being overturned or damaged and any combustible materials in the vicinity from igniting.**

Risk Assessment for Fire and Explosion

With respect to subsections 26(1) and 26(5) of the *OHS Regulations*, additional guidance is provided in the following:

- Classification society rules.
- *NFPA 1 – Fire Code*.
- *NFPA 101 - Life Safety Code*.

Production, drilling and accommodations installations should also refer to the requirements for fire and explosion risk assessments provided for section 107 of the *Framework Regulations* and the associated guidance.

Specific Risks

A risk assessment must be undertaken to identify additional measures to be implemented to reduce the risks⁴⁴. Some specific risks to be considered include:

- Food preparation areas (e.g., galleys) and laundry rooms pose an overall fire risk to the marine installation or structure if not managed appropriately. Notes are as follows:
 - Appropriate fire protection equipment must be in place pursuant to section 27 of the *OHS Regulations*.
 - Pursuant to Part 18: Equipment, Machines and Devices of the *OHS Regulations*, equipment, machines and devices must be maintained and consider manufacturer's instructions.
 - To minimize the risk of fire:
 - in food preparation areas, grease, fat, oil, etc. should be cleaned from surfaces, traps and filters often; and
 - in the laundry room, instructions should be in place for:
 - washing and drying oil-contaminated clothing;
 - cleaning lint traps of dryers before each use to remove material that can ignite; and
 - checking drain seals regularly to ensure the fire and smoke integrity of the accommodations area is maintained.
 - In addition, pursuant to paragraphs 87(1)(a)(b) and (c) of the *OHS Regulations*, persons must be competent in the safe operation of equipment. As an example in food preparation areas, this should include competency in the use and monitoring of passive (e.g., doors and shutters) and active fire protection systems.

Classification of Hazardous Areas

With respect to subsection 26(2) of the *OHS Regulations*, additional guidance on the classification of hazardous areas is provided in the following:

- For flammable liquid, gas or vapour hazards, refer to *IEC 60079-10-1 Explosive Atmospheres – Part 10-1: Classification of areas – Explosive gas atmospheres* (which includes flammable mists) or other similar standards.
- For combustible dust, ignitable fibres or flyings, refer to *IEC 60079-10-2 Explosive atmospheres – Part 10-2: Classification of areas - Explosive dust atmospheres* or other similar standards.
- Classification society rules.
- For drilling, production and accommodations installations, refer also to requirements for classification of hazardous and non-hazardous areas found in section 113 of the *Framework Regulations*.

⁴⁴ C-NLAAIA 205.009, 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009, 210.015(2)(a) and 210.02(2)(a)

Section 27 – Firefighting Equipment

27 Every employer must equip each workplace under its control with the firefighting equipment that is appropriate for that type of workplace and all classes of fire that may occur there.

General

- SOLAS and the *International Code for Fire Safety Systems (FSS Code)* contain guidance for the selection, design, installation, operation and maintenance of firefighting equipment. The following should be noted:
 - SOLAS applies to equipment associated with marine operations; therefore, if additional equipment is placed onboard a marine installation or structure to do a specific work or activity for which that marine installation or structure is not designed or classed (e.g., offshore supply vessel used for geophysical operations), it should be ensured that appropriate fire protection is provided.
 - Additional guidance for firefighting equipment and related preventive measures in engine rooms, cargo pump rooms, boilers, fired units and hydraulic systems is also provided in *IMO Circular MSC.1/Circ.1321 Guidelines for Measures to Prevent Fire in Engine Rooms and Cargo Pump Rooms*.
- Guidance on other measures for the installation, operation, maintenance, inspection and testing of selected equipment to reduce the risk of fires and explosions can be found in *NFPA 1 – Fire Code* and its normative references (e.g., this includes practices for storage of combustibles, cooking equipment, batteries, laboratories, laundry). Reference can also be made to NFPA standards that have been developed for specific pieces of fire protection equipment (e.g., NFPA 12 for CO₂ extinguishing systems, NFPA 1961 for fire hoses). These standards contain guidance for the selection, design, installation, operation and maintenance of these systems. Some of these standards also contain guidance for marine system applications, which should be considered.
- Requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to firefighting equipment, particularly those requirements for competency, use, inspection, testing and maintenance.

Drilling, Production and Accommodations Installations

Refer also to requirements for active and manual fire protection systems in section 134 of the *Framework Regulations*.

Extinguishing Media

The appropriate type of extinguishing media must be selected (e.g., with respect to classes of fire in accordance with NFPA, metal fires require Class D, polar solvents require alcohol-resistant aqueous film forming foam (AR-AFFF) and grease fires require class K, etc.) based upon the particular types of fire that may need to be extinguished.

Inspection and Maintenance

- In addition to the requirements of the manufacturer or adopted standards, weekly inspections should ensure that access to fire protection equipment is clear.
- If activities are planned for winter months, additional measures may be needed to ensure that fire protection equipment does not freeze.

Section 28 – Fire Team Equipment

28 (1) The personal protective equipment that every employer with control over a workplace that is a marine installation or structure must provide to each of its employees, and any other individual at the workplace, who is tasked with fighting fires includes

(a) a self-contained breathing apparatus with two full spare cylinders that

(i) is selected and maintained in accordance with CSA Group standard Z94.4, Selection, use, and care of respirators,

(ii) conforms to the design and performance requirements in National Fire Protection Association Standard NFPA 1981, Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services, and

(iii) is equipped with a personal distress alarm device;

(b) life safety ropes, belts and harnesses that conform to the design and performance requirements in National Fire Protection Association Standard NFPA 1983, Standard on Life Safety Rope and Equipment for Emergency Services, with the provisions of that standard pertaining to flame resistance being read as mandatory; and

(c) personal protective clothing — including boots, gloves, helmet and visor, coat and trousers — that conforms to the design and performance requirements in National Fire Protection Association Standard NFPA 1971, Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting.

Other equipment

(2) The employer must also provide,

(a) to each employee referred to in subsection (1),

(i) a portable electric safety lamp that can be easily attached to the employee's clothing and will operate safely in anticipated conditions for at least three hours, and

(ii) an axe with an insulated handle and carrying belt; and

(b) to the fire team as a whole, at least two two-way portable radiotelephone apparatus that are designed not to produce any spark or other source of ignition.

Alternative equipment

(3) Despite subsection (1) and paragraph (2)(a), if a workplace is a ship used for construction or diving or for geotechnical or seismic work, the employer may instead provide fire-fighter's

outfits that conform to the International Maritime Organization’s International Code for Fire Safety Systems.

Quantity

(4) The number of sets of equipment referred to in subsections (1) and (2) or fire-fighter’s outfits referred to in subsection (3), as the case may be, that the employer must provide at the workplace — and their sizing, if applicable — is to be determined having regard to the risk assessment carried out by the employer for the purpose of the occupational health and safety program.

Minimums

(5) Despite subsection (4), the number of sets of equipment or outfits, as the case may be, that the employer must provide is at least

(a) four, if the workplace is a ship used for construction or diving or for geotechnical or seismic work; or

(b) ten, in any other case.

Equipment accessibility

(6) The employer must ensure that the equipment provided in accordance with this section is kept ready for use and stored in a place that is easily accessible, with at least two sets of equipment or two outfits, as the case may be, being easily accessible from the helicopter deck, if any, of the marine installation or structure.

General

- Sections 44 – 45 and 49 of the *OHS Regulations* contain general requirements which apply to all PPE. Refer also to the definition of “personal protective equipment” and requirements for PPE in the *Accord Acts*⁴⁵.
- With respect to subparagraph 28(1)(a)(ii) of the *OHS Regulations*, the “design and performance requirements” means Chapters 6 and 7 of the *NFPA 1981, Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services*.
- With respect to paragraph 28(1)(b) of the *OHS Regulations*, the “design and performance requirements” means Chapters 26 and 27 of the *NFPA 2500 Standard for Operations and Training for Technical Search and Rescue Incidents and Life Safety Rope and Equipment for Emergency Services which constitute the 2022 edition of NFPA 1983, Standard on Life Safety Rope and Equipment for Emergency Services*

⁴⁵ C-NLAAIA 205.013(i) and (j), 205.019(1)(i), 205.027(b) and (c) and 205.043(5)(c); CNSOPRAIA 210.013(i) and (j), 210.019(1)(i), 210.027(b) and (c) and 210.043(5)(c)

- With respect to paragraph 28(1)(c) of the *OHS Regulations*, the “design and performance requirements” means Chapters 6 and 7 of the *NFPA 1971, Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*.
- Additional guidance is provided in the following:
 - *NFPA 1 – Fire Code* and *NFPA 101 Life Safety Code*.
 - *NFPA 1851, Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*.
- Requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to fire team equipment, particularly those requirements for competency, use, inspection, testing and maintenance.
- Drilling installations should also refer to requirements of the *IMO Code for the Construction and Equipment of Mobile Offshore Drilling Units (IMO MODU Code)*.

Additional Considerations for Equipment

- When responding to an emergency involving either a flammable or toxic gas environment (including benzenes, carbon monoxide (CO), etc.) or an oxygen-deficient environment, responders must be provided with a personal gas monitoring device pursuant to paragraph 46(i) of the *OHS Regulations* (e.g., four head personal gas monitors). Refer to the requirements and associated guidance under Part 8: Personal Protective Equipment of the *OHS Regulations*. In particular, with respect to section 48 of the *OHS Regulations*, bump testing of personal gas monitors must be done before emergency use.
- With respect to subparagraph 28(1)(a)(ii) of the *OHS Regulations*, the quality of breathing air must consider both the requirements under *CSA Z180.1, Compressed breathing air and systems* referenced in section 47 of the *OHS Regulations* and the normative standard referenced in the NFPA standard. Note that if there is a conflict, pursuant to section 3 of the *OHS Regulations*, the most stringent requirements apply.
- With respect to the paragraph 28(1)(c) of the *OHS Regulations*, PPE should be designed and meet the performance requirements for “structural firefighting” and not for “proximity firefighting” as defined by *NFPA 1971, Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*.
- With respect to the subparagraph 28(2)(a)(i) and paragraph 28(2)(b) of the *OHS Regulations*, if there is a potential hazardous gas environment, both the portable electric safety lamps and portable radios worn by firefighters should be intrinsically safe in accordance with paragraph 91(1)(j) of the *OHS Regulations*.
- With respect to subparagraph 28(2)(a)(ii) of the *OHS Regulations*, the insulated handle of the axe should be rated for high voltage.
- With respect to subsection 28(6) of the *OHS Regulations*, sufficient space should also be provided adjacent to the storage space to allow for donning of the PPE.

Section 29 – Falls into Ocean

29 The risk of a person at a workplace falling into the ocean is a prescribed risk for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and the employer with control over that workplace must

(a) provide appropriate life-saving appliances and ensure they are held in readiness;

(b) ensure that a competent person is readily available at all times to operate the life-saving appliances; and

(c) ensure that a fast rescue boat that meets the requirements of Chapter V of the LSA Code is provided — or available from a standby vessel that is no more than 500 m away — and held in readiness.

General

- For drilling, production and accommodations installations, also refer to requirements for life-saving appliances in section 119 of the *Framework Regulations*.
- With respect to paragraph 29(c) of the *OHS Regulations*, a standby vessel is only required for drilling and production installations. Requirements and associated guidance for standby vessels are provided in section 171 of the *Framework Regulations*.
- Requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to life saving equipment, particularly those requirements for competency, use, inspection, testing and maintenance.

At-Risk Activities

Activities which present a risk of a person at a workplace falling into the ocean include work over the side, personnel transfers, use of an elevated work platform over the side, use of gangways, deployment of subsea or surface equipment where barriers are removed, etc.

Training

- Fast rescue boat crews should be properly trained and hold certificates of competence according to STCW. When there is a risk of a person falling into the ocean, the rescue boat crew and the launching team should be dedicated to that role and not double-tasked.
- For training of emergency response teams, refer to Part 4: Training - General and section 20 of the *OHS Regulations*.

Life-saving Appliances

SOLAS, the LSA Code and associated IMO resolutions and circulars contain guidance for the selection, design, installation, operation and maintenance of life-saving appliances. The following should be noted:

- SOLAS and the LSA Code do not address the lower temperature requirements for operation in the respective *Offshore Area*. If activities are planned for winter months, additional measures may be needed to ensure that life-saving appliances remain operational.
- SOLAS applies to equipment associated with marine operations; therefore, if additional equipment is placed onboard a marine installation or structure to do a specific work or activity for which that marine installation or structure is not designed or classed (e.g., offshore supply vessel used for geophysical operations), it should be ensured that any necessary additional life-saving appliances (e.g., lifebuoys) are provided, appropriate procedures are developed, and training and drills are completed.

Section 30 – Emergency Drills and Exercises

30 (1) Every employer must establish, for each workplace under its control that is a marine installation or structure and having regard to the risk assessment carried out by it for the purpose of the occupational health and safety program, a plan that describes the emergency drills and exercises that must be conducted at the workplace in relation to various scenarios and sets out the frequency with which they must be conducted.

Minimum frequency

(2) Despite subsection (1), the employer must ensure that

- (a) a drill to practice mustering is conducted at least once a week;***
- (b) a fire drill is conducted at least once a month;***
- (c) a drill to practise escape to the location of lifeboats or life rafts in preparation for abandonment of the workplace is conducted at least once a month;***
- (d) if the workplace is equipped with lifeboats,***
 - (i) each employee participates, at least once every six months, in a drill that requires them to board a lifeboat while wearing an immersion suit and to secure themselves on a seat, and***
 - (ii) if feasible, a lifeboat launching drill is conducted annually to test the integrity and operation of the lifeboats and launching equipment; and***
- (e) all drills and exercises are repeated as soon as practicable after any significant change to the emergency plan or to the work or activities carried out at the workplace with respect to which an authorization has been issued.***

Alternative to launching drill

(3) If compliance with subparagraph (2)(d)(ii) is not feasible, the employer must ensure that additional inspections and testing of all components that would otherwise be tested by the launching drill are carried out in consultation with the lifeboat manufacturer and with the prior approval of the Chief Safety Officer.

Equitable scheduling

(4) The employer must schedule drills and exercises to ensure the equitable participation of all employees, regardless of their shift or rotation.

Visitors

(5) The employer must ensure that any person visiting the workplace who has not participated in the emergency drills or exercises is accompanied throughout the visit by someone who has done so.

Records

(6) The employer must keep a record of all emergency drills and exercises conducted that contains

(a) the date on which and the time at which the drill or exercise was conducted;

(b) a description of the drill or exercise scenario;

(c) a list of all persons who participated in the drill or exercise;

(d) the length of time taken to complete the drill or exercise, including the length of time to achieve a full muster; and

(e) observations regarding the execution of the drill or exercise and opportunities for improvement.

Record retention

(7) The employer must retain the records referred to in subsection (6) for at least three years after the day on which the drill or exercise is carried out.

General

Plans for emergency drills and exercises should routinely seek to involve all persons at the workplace, as well as any other support services or other emergency response entities - and other entities operating nearby - that may provide support for an emergency.

Drills and Exercises following Significant Changes

“Significant changes” under paragraph 30(2)(e) of the *OHS Regulations* should be interpreted to include the following:

- changes among different stages of a program (e.g., as applicable, before start of drilling or production, before drilling out a formation where shallow gas or petroleum may be encountered, before formation flow testing of an exploration well, before the start of a maintenance turnaround);
- changes to employees, other individuals or organizations (including changes to key positions, contractors or additional persons brought onboard to complete an activity);

- changes to process (such as formation of H₂S in the reservoir); or
- significant changes to emergency response equipment (e.g., new lifeboats, fire suppression systems).

The extent and types of drills and exercises done should be commensurate with the changes being made.

Alternative to Launching Drill

With respect to subsection 30(3) of the *OHS Regulations*, refer to guidance provided for section 119 of the *Framework Regulations*.

Visitors

With respect to subsection 30(5) of the *OHS Regulations*, when a person is inside the accommodations or office areas, they need not be accompanied by another person as long as they are provided with instruction on the actions to take for muster and evacuation.

Performance Requirements

With respect to paragraph 30(6)(d) of the *OHS Regulations*, the length of time to don immersion suits, to achieve a muster and to evacuate should be consistent with the requirements specified in SOLAS and for drilling, production or accommodations installations, it should be commensurate with the times recommended in any formal escape, evacuation and rescue analysis that was completed.

Other Considerations

- For additional guidance on emergency drills and exercises, refer also to the COP TQOP and the *Contingency Plan Guideline*.
- For a dive project, refer also to section 170 of the *OHS Regulations*.
- For requirements on confined space drills, refer also to paragraphs 131(i) and 133(1)(k) of the *OHS Regulations*.

PART 6: FIRST AID AND MEDICAL CARE

Section 31 – Medical Services

31 Every operator must ensure that

(a) a physician who has specialized knowledge in the treatment of illnesses and injuries that may arise at the workplace is readily available at all times to provide medical advice, remotely from a location in Newfoundland and Labrador (or Nova Scotia) to any medic or first aider at the

workplace and to be transported to the workplace, if necessary, to provide medical care, unless the workplace has a medic who is a physician with that knowledge;
(b) an emergency medical evacuation service is available at all times for transporting an injured or ill person from the workplace to a hospital onshore using a means of transportation that
(i) is equipped with appropriate first aid and medical supplies,
(ii) is capable of accommodating and securing an occupied stretcher, and
(iii) has one or more competent persons available on board to provide first aid or medical care to the injured or ill person during transportation; and
(c) persons at the workplace have a means of quickly summoning the emergency medical evacuation service.

With respect to paragraph 31(a) of the *OHS Regulations*:

- Physicians should have knowledge of the specific health and safety hazards that may be encountered in the industry.
- As physicians may have to travel offshore, they must maintain current certification in offshore survival training appropriate to the mode of transportation as referenced in subparagraph 15(a)(i) of the *OHS Regulations* and associated guidance.
- For drilling, production and accommodations installations, physicians should also have MEDEVAC team training as described in the COP TQOP.

With respect to paragraph 31(b) of the *OHS Regulations*:

- This should consider the requirements and associated guidance for risk assessments provided under paragraph 32(1)(a) of the *OHS Regulations*. The provision of emergency medical evacuation services should consider the types of activities being undertaken, the types of medical evacuations that could be required and the availability of emergency medical evacuation services because of location, physical and environmental conditions or the types of activities being undertaken (e.g., for an injury to a diver in saturation, this will normally involve the dive vessel transiting to shore).
- For all emergency medical evacuation services, including any externally-provided services, the operator should confirm the range, associated limitations and the equipment and level of care provided from that particular service. These details should be described in associated emergency response procedures under section 18 of the *OHS Regulations*.
- If nearby, consideration should be given to making arrangements with other installations.
- Additional measures should be considered to meet the requirements of paragraph 31(b) of the *OHS Regulations*, such as provision of an additional medic onboard for transport purposes.
- Additional measures should also be put in place to address limitations with availability of emergency services, such as provision of additional medical equipment or materials onboard (e.g., resuscitation equipment, oxygen).

Section 32 – Medical Response Plans

32 (1) Every employer with control over a workplace must

(a) when assessing the risk of illness or injury at the workplace for the purpose of the occupational health and safety program, consult with a medic, if one is required at the workplace, and take into account

(i) the location of the workplace and the expected delay in obtaining emergency medical services,

(ii) the layout of the workplace, and

(iii) environmental factors, including thermal considerations;

(b) develop, in consultation with a medic if one is required at the workplace – and with a specialized dive physician, if a dive project is to be carried out from the workplace – a written medical emergency response plan that addresses all reasonably foreseeable emergencies at the workplace and takes into account the location of the workplace, the time of year in which the work is to be carried out, the expected number of persons at the workplace during normal operations and the workplace’s maximum capacity;

(c) determine, in consultation with a medic, if one is required at the workplace – and with a specialized dive physician, if a dive project is to be carried out from the workplace – the type and quantity of first aid and medical supplies and equipment, medication and facilities needed to respond to all reasonably foreseeable injuries and illnesses at the workplace and ensure that those supplies, that equipment, those medications and those facilities are provided, maintained, replenished and replaced as necessary;

(d) establish and make readily available to all persons at the workplace written procedures for promptly obtaining first aid or medical care for any injury or illness, including procedures to follow while awaiting that care;

e) keep a diagram indicating the location of all first aid kits and medical rooms conspicuously posted at the workplace;

(f) keep an up-to-date list of telephone numbers for use in emergencies conspicuously posted near every fixed telephone at the workplace;

(g) keep a list of all medics and first aiders who are present at the workplace, as well as information on how and when they may be contacted and where they may be located, conspicuously posted in every medical room at the workplace;

(h) keep a list of all medics who are present at the workplace — or, if no medic is required, of the first aiders who hold the highest level of first aid certificate held by any first aider at the workplace — as well as information on how and when they may be contacted and where they may be located conspicuously posted

(i) on the bridge, if the workplace is a vessel, or

(ii) at the location where the installation manager referred to in section 193.2 (or 198.2) of the Act is expected to be during an emergency, if the workplace is not a vessel; and

(i) ensure that the number of first aiders and medics set out in columns 2 to 4 of the following table that correspond to the number of persons at the workplace set out in column 1 are present at the workplace and readily available to provide prompt and appropriate first aid or medical care to persons at the workplace:

First aid kits

- (2) The first aid supplies referred to in paragraph (1)(c) must include first aid kits that***
- (a) conform to CSA Group standard Z1220, First aid kits for the workplace;***
 - (b) contain only the supplies necessary for rendering first aid, which are maintained in a clean, dry and serviceable condition;***
 - (c) are inspected at least monthly; and***
 - (d) are clearly identified by conspicuous signs and readily accessible at various locations throughout the workplace.***

Automated external defibrillators

- (3) If the workplace is a marine installation or structure, the first aid equipment referred to in paragraph (1)(c) must include***
- (a) at least one automated external defibrillator in a common area accessible to all persons at the workplace; and***
 - (b) additional automated external defibrillators in the quantities and locations that are necessary, having regard to the risk assessment carried out by the employer for the purpose of the occupational health and safety program.***

Medical rooms

- (4) If the workplace is a marine installation or structure, the facilities referred to in paragraph (1)(c) must include a medical room***
- (a) whose location is clearly identified by conspicuous signs;***
 - (b) that is supervised by a medic or, if no medic is required at the workplace, a first aider who holds the highest level of first aid certificate held by any first aider at the workplace;***
 - (c) whose location and design allow patients on stretchers to be easily transported to it from other locations at the workplace and from it to any deck from which patients may be transported from the workplace;***
 - (d) that allows for optimum ease of access to persons carrying a patient on a stretcher;***
 - (e) that is maintained in an orderly and sanitary condition and in which all surfaces are easily cleaned and disinfected;***
 - (f) that contains or is located adjacent to a washroom;***
 - (g) that contains***
 - (i) a rectangular treatment table that is accessible from both long sides and at least one short side,***
 - (ii) a medical lamp with an adjustable arm,***
 - (iii) a means of securing a stretcher in place when it is occupied by a patient,***
 - (iv) a handwashing facility supplied with running hot and cold water,***
 - (v) a hand-held shower head that can easily reach the patient,***
 - (vi) a storage cupboard and counter,***

- (vii) a separate cubicle or curtained-off area with a cot or bed equipped with a moisture-protected mattress and two moisture-protected pillows,*
 - (viii) a table and at least two chairs,*
 - (ix) a lockable medical chest or cabinet,*
 - (x) a waste receptacle and a means of safely disposing of biohazards and sharp objects,*
 - (xi) sufficient electrical outlets of the appropriate voltage for the equipment to be used in the room, and*
 - (xii) all other medical supplies and equipment that are determined to be necessary under paragraph (1)(c);*
- (h) in which information is accessible regarding*
- (i) first aid procedures in respect of any reasonably foreseeable injury or illness at the workplace,*
 - (ii) all hazardous substances at the workplace, including the procedures for treating exposure to them and, in the case of hazardous products, their safety data sheets, if any, or other documents containing hazard information in respect of them, and*
 - (iii) procedures for transporting injured or ill persons within and from the workplace; and*
- (i) that contains an effective means of hands-free electronic communication with the physician referred to in paragraph 31(a) and other emergency contacts, as well as an up-to-date list of the names and contact information of those persons for use in emergencies.*
-

Risk Assessment for Medical Response

With respect to paragraph 32(1)(a) of the *OHS Regulations*, the risk assessment should consider:

- Provision of additional medical supplies or equipment may be required for the following:
 - Specific illnesses or conditions of individual(s).
 - Specific hazardous substances or hazardous products.
 - Nature of the activities being undertaken (e.g., diving).
 - Nature of the working environment (e.g., cold air and sea temperatures).
 - Mass casualty events.
 - Epidemics (e.g., food poisoning, influenza).
 - Pandemic, including requirements for quarantine or isolation.
- This should include consideration of additional medicines; PPE; emergency showers; eye-wash stations; stretchers; resuscitation equipment; dressing material; suturing equipment; instruments; examination and monitoring equipment; equipment for injection, infusion catheterization, immobilization and transportation. All additional materials and equipment should be available and immediately accessible. This should also consider the availability and methods of emergency medical evacuation services available.
- The level of training and competency required for both offshore emergency response teams and onshore support teams, including onshore physicians.
- With respect to paragraphs 32(1)(g) and (h) of the *OHS Regulations*, if the marine installation or structure has a dedicated first aid team, the members of this team should be posted in the medical room and in any associated emergency response management locations.

- Additional guidance on risk assessments is provided in the following:
 - *ISO 15544 Petroleum and natural gas industries - Offshore production installations - Requirements and guidelines for emergency response*;
 - *ISO 35101 petroleum and natural gas industries – Arctic operations – Working Environment*; and
 - *CSA Z1220 First aid kits for the workplace*.
- Additional guidance is provided in the following:
 - *WHO International Medical Guide for Ships*;
 - *UKOOA Industry Guidelines for First-Aid and Medical Equipment on Offshore Installations*; and
 - *IMO/WHO/ILO Medical First Aid Guide for Use in Accidents Involving Dangerous Goods*.

Numbers of First Aiders and Medics

With respect to paragraph 32(1)(i) of the *OHS Regulations*, refer to table in the *OHS Regulations*.

First Aid Kits

- With respect to subsection 32(2) of the *OHS Regulations*, reference should also be made to the risk assessment undertaken in paragraph 32(1)(a) of the *OHS Regulations* to determine the contents of first aid kits. Depending on specific illnesses or conditions of individuals, or the nature of the activities being undertaken, additional supplies may need to be added to first aid kits in certain work areas.
- First aid kits should be marked by photo-luminescent markings to make them more visible in low-lighting conditions.

AEDs

With respect to subsection 32(3) of the *OHS Regulations*, AEDs should be marked by photo-luminescent markings to make them more visible in low-lighting conditions. The placement of AEDs should consider the areas where they are most likely to be used and associated response times.

Medical Rooms

With respect to subsection 32(4) of the *OHS Regulations*, reference should also be made to the risk assessment undertaken in paragraph 32(1)(a) of the *OHS Regulations* and the associated guidance that is referenced to determine equipment to be maintained. Additional considerations are as follows:

Design

The design of the medical room and associated areas should consider:

- Design of the ventilation system and location of exhausts to limit or prevent exposures to airborne infectious diseases.
- Connection of all equipment required for a medical emergency to a source of emergency power.
- The capability of being locked while not in use.
- If medical grade oxygen cylinders are in use, appropriate storage and protection should be provided. Cylinders should be installed in an appropriate cabinet that is vented to a safe location if there is a leak.
- Additional areas should be designated and equipped for use as an emergency treatment area for handling a large number of casualties, if it is determined that this might be required.

Medications, Supplies and Equipment

- Prescription drugs or other medications dispensed by the medic should be stored in a locked cabinet under the control of the medic or first aider referenced in paragraph 32(4)(b) of the *OHS Regulations*. An additional key should be kept in the possession of the OIM or other designate if the medic cannot access the cabinet in an emergency situation.
- The medic or first aider should administer and monitor the use of these medications.
- A list of medicines, medical supplies and equipment should be developed and maintained by the medic or first aider referenced in paragraph 32(4)(b) of the *OHS Regulations*. Details such as quantity, expiry dates and storage conditions should be included.
- Any medical reference books and documentation required by *International Labour Organization (ILO) Maritime Labour Convention (MLC)*, flag state or as recommended by a physician or medic should be maintained.

Medical Waste

With respect to subparagraph 32(4)(g)(x) of the *OHS Regulations*, refer to the guidance on disposal of biohazards in the *Canadian Biosafety Handbook*.

Section 33 – Medics

33 (1) An employer may designate a person as a medic if that person

(a) has experience with helicopter or fixed-wing aircraft evacuation for medical purposes;

(b) holds an advanced cardiac life support certificate or basic cardiac life support instructor's certificate issued by an entity that bases its training on International Liaison Committee on Resuscitation guidelines; and

(c) meets one of the following requirements:

(i) they hold a licence to practise medicine in Canada and have at least two years' clinical experience in intensive care or emergency practice,

- (ii) they hold a registered nursing certificate recognized by a provincial regulatory body and have at least two years' clinical experience in intensive care or emergency practice, or*
- (iii) they hold an advanced care paramedic certificate or critical care paramedic certificate issued by a college in Canada and have at least three years' experience as an advanced life support provider.*

Designation in writing

- (2) The designation under subsection (1) must be made in writing.*

No other duties

- (3) The employer must not assign to the medic any other duties that will interfere with the prompt and adequate provision of first aid and medical care.*

Responsibility

- (4) When providing first aid or medical care to an injured or ill person, a medic*
 - (a) must not be overruled by anyone other than the physician referred to in paragraph 31(a); and*
 - (b) must follow any directions given by the physician referred to in paragraph 31(a).*
-

No guidance required at this time.

Section 34 – First Aiders

- 34 (1) Every employer must allow any first aider — and any other employee that the first aider needs for assistance — to provide prompt and adequate first aid to an injured or ill person and ensure that they have adequate time to do so, with no loss of pay or benefits.*

Responsibility

- (2) When providing first aid to an injured or ill person, a first aider*
 - (a) must not be overruled by anyone other than a physician, a medic or, if they hold a standard first aid certificate, a first aider with an advanced first aid certificate; and*
 - (b) must remain in charge of the person's care until the first aid is complete or the person is under the care of a physician, a medic or, if they hold a standard first aid certificate, a first aider with an advanced first aid certificate.*
-

With respect to section 34 of the *OHS Regulations*, refer to the definitions of “advanced first aid certificate”, “first aider” and “standard first aid certificate” in the *OHS Regulations*. Refer to the COP TQOP for additional details with respect to first aid training and first aid teams.

Section 35 – Treatment Records

35 (1) Every first aider or medic who provides care to an injured or ill person or from whom treatment is sought must make and sign a record containing the following information:

(a) the full name of the injured or ill person;

(b) a brief description of the injury or illness — and of the occurrence that gave rise to it, if any — including, as applicable, the date on which and the time and location at which the injury or occurrence occurred or the date on which and the time at which symptoms of the illness were first experienced;

(c) a brief description of any treatment provided by the first aider or medic, including the date on which and time at which it was provided; and

(d) a brief description of any arrangements made for the treatment or transportation of the injured or ill person.

Retention

(2) The employer with control over the workplace at which the record is made must retain it, from the day on which the injury or illness is first documented, for:

(a) 40 years, in the case of treatment for an occupational disease or exposure to a hazardous substance;

(b) 10 years, in the case of treatment for an injury resulting from an incident, other than exposure to a hazardous substance, or for a musculoskeletal injury, as defined in subsection 41(3); and

(c) five years in any other case.

No guidance required at this time.

PART 7: EMPLOYEE WELL-BEING

Section 36 – Occupational health and safety program

36 Every occupational health and safety program must set out measures for promoting mental health and healthy lifestyles and must address substance abuse, the effects on mental health of working in a remote location and the management of mental illness.

- Resources on mental health, substance abuse and healthy lifestyles at the workplace are provided on the CCOHS website (www.ccohs.ca).
- Additional guidance on mental health is provided in the following:
 - CSA Z1002 *Occupational health and safety – Hazard identification and elimination and risk assessment* and in particular, Annex B.8 with respect to psychosocial hazards.
 - CSA Z1003 *Psychological health and safety in the workplace – prevention, promotion and guidance to staged implementation*.

Sections 37 – 39 - Impairment

37 (1) Impairment, including as a result of fatigue, stress, injury, illness, another physical or psychological condition, alcohol or drugs, is a prescribed risk for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and every occupational health and safety program must

(a) set out the roles and duties of all workplace parties in identifying and preventing the consequences of impairment on the health and safety of employees;

(b) identify factors that may contribute to impairment or its causes, such as work and workplace conditions, work scheduling and task type and length;

(c) require that the factors referred to in paragraph (b) be regularly monitored at the workplace and taken into account, in conjunction with incident reports, employee complaints, workplace committee reports and records of excess work hours kept under paragraph (e) or subsection 39(3), to identify any potential impairment;

(d) require the development, maintenance and implementation of an appropriate work shift design that allows adequate rest periods;

(e) require records to be kept of hours worked by an employee beyond their usual shift or rotation; and

(f) require that the risk of fatigue be taken into account in developing all workplace procedures.

Working while impaired

(2) Every employer must ensure that no employee at a workplace under its control is permitted to work if their ability to do so is impaired in a manner that is likely to be hazardous to their health or safety or that of any other person at the workplace.

Investigation of incidents

(3) Impairment must be considered as a potential causal factor in the investigation of all incidents at the workplace.

Fatigue training

38 The instruction and training that every employer must provide to its employees includes instruction and training on the factors that contribute to fatigue, procedures for identifying and reporting fatigue and the role and duties of employees in managing fatigue.

Rest periods

39 (1) Every employer must ensure that no employee works at a workplace under its control unless they have been provided with a period of at least 11 consecutive hours of rest in the previous 24 hours.

Exception

(2) An employer may, in extenuating circumstances, allow an employee to work without having had that rest period if the employer has assessed the risk associated with the employee working the extra hours and determined, in consultation with the employee, that the work can be carried out without increased risk to their health or safety.

Documentation

(3) If an employer allows an employee to work without having had that rest period, the employer must ensure that a description of the work, the name of the employee, the hours worked, the reason for the exception and the result of the risk assessment referred to in subsection (2) are recorded.

Non-application in emergency

(4) Subsection (1) does not apply in the event of an emergency at the workplace that may be hazardous to the health or safety of employees.

Alternative

(5) Despite subsections (1) and (2), the employer with control over a workplace for which an authorization has been issued for a period of less than six months may alternatively comply, in respect of the marine crew, with the daily hours of work and minimum rest requirements outlined in the International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), 1978.

-
- For drilling, production and accommodations installations, employees, including contractors, providers of services, etc., should receive comprehensive and appropriate medical examinations in accordance with the COP TQOP and the *Canadian Association of Petroleum Producers (CAPP) Atlantic Canada Medical Assessment for Fitness to Work Offshore*. These

examinations should be developed in accordance with appropriate hazard and work assessments to protect the individual and others.

- For all other types of marine installations or structures, all employees (including non-marine crew) should receive a medical certificate in accordance with the ILO MLC and the STCW.
- Employees should have access to appropriate medical and other assistance programs, and supervisors should be trained and directed to recognize and act upon common forms of impairment.
- Additional resources for impairment, substance abuse and fatigue at the workplace are provided on the CCOHS website (www.ccohs.ca).

With respect to sections 37 - 39 of the *OHS Regulations*, refer to the following:

- The *Accord Acts*⁴⁶ provide reference to provincial social legislation which applies to and in respect of workplaces in the *Offshore Area* and in particular, reference is made to provincial labour standards.
- The materials referenced in section 36 of this Guideline are useful resources for different types of impairment (e.g., psychological health and safety).
- In NL, refer to the *COP Fatigue Management in the Canada-Newfoundland and Labrador Offshore Petroleum Industry*.

Section 40 – Thermal Stress

40 Thermal stress is a prescribed risk for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and every employer must ensure, in respect of all persons at each workplace under its control who may be exposed to heat or cold, that

(a) their exposure is kept below the applicable threshold limit value or action limit established by the American Conference of Governmental Industrial Hygienists in its publication TLVs and BEIs: Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices, as the case may be;

(b) they are informed of the risk and advised of measures to be taken to minimize their exposure to it;

(c) they are regularly monitored for signs of thermal stress;

(d) they are provided with clothing and equipment that offers protection against thermal stress;

(e) screens or shelters are provided to protect them against the elements, if applicable;

(f) measures are taken to acclimatize them to temperatures at the workplace;

(g) hot or cold beverages, as the case may be, are made available to them; and

(h) work schedules, including rest periods, are established having regard to thermal stress.

⁴⁶ C-NLAAIA 205.001 and 205.007; CNSOPRAIA 210.001 and 210.007

- Additional guidance for working in a cold, remote, offshore working environment is provided in *ISO 35101:2017 Petroleum and natural gas industries. Arctic operations. Working environment*.
- Additional guidance for thermal stress is provided on the CCOHS website (www.ccohs.ca).

Section 41 – Musculoskeletal Injury

41 (1) Musculoskeletal injury is a prescribed risk for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and the procedures referred to in that paragraph must include an assessment, in consultation with the following persons, of the extent to which that risk is associated with each type of work carried out at the workplace:

- (a) a representative sample of employees who are required to carry out that type of work; and
(b) employees who have signs or symptoms of musculoskeletal injury***

Hazard control measures

(2) The employer must ensure that interim hazard control measures are implemented without delay after the risks of musculoskeletal injury are assessed and permanent measures, determined with regard to the parameters established by the American Conference of Governmental Industrial Hygienists in its publication TLVs and BEIs: Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices, are implemented as soon as practicable.

Definition of musculoskeletal injury

(3) In this section, musculoskeletal injury means an injury to or disorder of the muscles, tendons, ligaments, joints, nerves, blood vessels or related soft tissue, including a sprain, strain or inflammation.

- While the ACGIH contains guidance and requirements for hand activity, lifting, hand-arm vibration, upper limb localized fatigue and whole body vibration, there may be other activities or individual factors that should be considered which may present a risk of developing a musculoskeletal injury (MSI). Advice should be obtained from a subject matter expert such as an ergonomist.
- A risk assessment must be performed⁴⁷ and it should consider the guidance provided in the following:
 - *CSA Z1002 Occupational health and safety – Hazard identification and elimination and risk assessment.*

⁴⁷ C-NLAAIA 205.009, 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009, 210.015(2)(a) and 210.02(2)(a)

- *ISO 17776 Petroleum and natural gas industries - Offshore production installations - Major accident hazard management during the design of new installations* and its normative and informative references.
- *ILO Code of Practice: Ambient Factors in the Workplace.*
- Additional guidance is also provided in the following:
 - For hand-transmitted vibration, refer to *ISO 5349-1 Mechanical vibration -- Measurement and evaluation of human exposure to hand-transmitted vibration -- Part 1: General requirements* and *ISO 5349-2 Mechanical vibration - Measurement and evaluation of human exposure to hand-transmitted vibration - Part 2: Practical guidance for measurement at the workplace for hand-transmitted vibration.*
 - For whole body vibration, refer to *ISO 2631 Mechanical vibration and shock - Evaluation of human exposure to whole-body vibration.*
 - As ACGIH does not address whole body vibration for offshore structures or large ships, refer also to *ISO 20283-5 Mechanical vibration - Guidelines for the measurement, reporting and evaluation of vibration with regard to habitability on passenger and merchant ships.*
 - With respect to ergonomic considerations for bridges, refer to Appendix 3 of *IMO Circular MSC.1/Circ.982 Guidelines on Ergonomic Criteria for Bridge Equipment and Layout* and its normative references.
- Additional guidance for MSIs and ergonomics is provided on the CCOHS website (www.ccohs.ca).

Section 42 – Workplace Violence and Harassment

42 (1) Workplace violence and harassment is a prescribed risk for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and every employer must develop and post at a place accessible to all employees a policy setting out the employer’s commitment to

- (a) provide a safe, healthy and violence and harassment-free workplace;**
- (b) dedicate sufficient attention, resources and time to address factors that contribute to workplace violence and harassment;**
- (c) communicate to its employees information in its possession about the factors referred to in paragraph (b); and**
- (d) assist employees who have been exposed to workplace violence and harassment.**

Occupational health and safety program

(2) Every occupational health and safety program must

- (a) require that the assessment of the risk of violence and harassment at the workplace take into account the nature of the work carried out at the workplace, the conditions under which that work is carried out and previous experiences at the workplace and other similar workplaces; and**
- (b) include procedures for**

- (i) summoning immediate assistance in response to violence that poses an immediate risk of physical injury,*
- (ii) reporting incidents of workplace violence and harassment to the employer or a supervisor, and*
- (iii) investigating and addressing reports of workplace violence and harassment.*

Training

(3) The training that every employer must provide to each of its employees includes training on the factors that contribute to workplace violence and harassment.

Definition of workplace violence and harassment

(4) In this section, workplace violence and harassment means any action, conduct or comment, including of a sexual nature, that can reasonably be expected to cause offence, humiliation or other physical or psychological injury or illness to an employee.

Additional guidance is provided in the following:

- Annex B.8 of *CSA Z1002 Occupational health and safety – Hazard identification and elimination and risk assessment* has guidance on psychosocial hazards.
- ILO MLC provides guidance for prevention of harassment and bullying.
- *International Chamber of Shipping and International Transport Workers Federation “Guidance on Eliminating Shipboard Harassment and Bullying”*.
- CCOHS website (www.ccohs.ca).⁴⁸
- In NL and NS, reference should also be made to the *Human Rights Act*.⁴⁹
- The *Workplace NL Harassment Prevention Guide* provides useful information for consideration in harassment prevention programs.

Section 43 – Disruptive Behaviour

43 Every employer must instruct all employees at each workplace under its control to refrain from engaging in disruptive behaviour at the workplace that may be hazardous to themselves or any other person.

No guidance required at this time.

⁴⁸ For NL, also reference to the *Workplace NL Harassment Prevention Guide*.

⁴⁹ C-NLAAIA 205.001, 205.007; CNSOPRAIA 210.001, 210.007

PART 8: PERSONAL PROTECTIVE EQUIPMENT

Sections 44 - 45 – General

44 (1) The personal protective equipment that every employee must use or wear for the purpose of paragraph 205.027(b) (or 210.027(b)) of the Act includes, in respect of any hazard to which they are exposed, all personal protective equipment that the employer or operator provides to them for the purpose of preventing or reducing injury from that hazard.

Compatibility with clothing

(2) Every employee must ensure that any clothing worn by them does not interfere with the proper functioning of any personal protective equipment used or worn by them.

Requirements

45 Every employer must ensure that all personal protective equipment that it provides to its employees, or to other individuals at a workplace under its control,

(a) is designed to effectively protect the user or wearer from the hazard for which it is provided;

(b) is selected having regard to any other hazards in the work area in which it is intended to be used or worn;

(c) does not create a hazard when used or worn for the purpose for which it is provided;

(d) is compatible with all other personal protective equipment that the employer provides to be used or worn at the same time, so that one item of equipment does not make another item ineffective; and

(e) is maintained in good working order and in a clean and sanitary condition.

- Sections 44 – 45 and 49 of the *OHS Regulations* contain general requirements which apply to all PPE. Refer also to the definition of “personal protective equipment” and requirements for PPE in the *Accord Acts*⁵⁰.
- Before it is considered for use and before the PPE is used for the first time in the workplace, pursuant to sections 44 and 45 of the *OHS Regulations*, a risk assessment must be performed and consider the *Accord Acts*⁵¹ and the associated hierarchy of controls.
- Requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to PPE, particularly those requirements for competency, use, inspection, testing and maintenance.

⁵⁰ C-NLAAIA 205.013(i) and (j), 205.019(1)(i), 205.027(b) and (c) and 205.043(5)(c); CNSOPRAIA 210.013(i) and (j), 210.019(1)(i), 210.027(b) and (c) and 210.043(5)(c)

⁵¹ C-NLAAIA 205.009(2), 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009(2), 210.015(2)(a) and 210.02(2)(a)

Sections 46 - 48 – Requirements

46 The personal protective equipment that every employer must provide to its employees and other individuals at a workplace under its control includes:

(a) if the workplace is a marine installation or structure,

(i) emergency escape breathing devices that conform to the International Maritime Organization’s International Code for Fire Safety Systems and that, if they are to be used for escape from an atmosphere that is immediately dangerous to life and health,

(A) have a rated service time in excess of the anticipated time needed to reach the nearest temporary safe refuge or muster station, and

(B) if they are multifunctional self-contained breathing apparatuses or airline respirators, have an auxiliary self-contained air supply with a rated service time in excess of the anticipated time needed to allow for escape by way of the planned escape route and, in any event, of not less than 15 minutes, or

(ii) respirators for the purpose of escape that are selected in accordance with CSA Group Standard Z94.4, Selection, use, and care of respirators;

(b) if the workplace is a marine installation or structure, immersion suits that

(i) conform to

(A) Chapter II of the LSA Code and IMO Resolution MSC.81(70), with the provisions of that Resolution being read as mandatory, or

(B) Underwriters Laboratories standard ANSI/CAN/UL 15027-2, Standard for Immersion Suits – Part 2: Abandonment Suits, Requirements Including Safety, and

(ii) are appropriate for all expected environmental conditions in the vicinity of the workplace, all situations that may require emergency evacuation and the time it would take for rescue operations to reach the area and complete a rescue;

(c) if the workplace is a workboat, an anti-exposure suit for each employee or individual that

(i) conforms to Chapter II of the LSA Code and IMO Resolution MSC.81(70), with the provisions of that Resolution being read as mandatory, and

(ii) is appropriate for all expected environmental conditions in the vicinity of the workplace;

(d) if the employee or individual is in the vicinity of moving equipment or loads, personal protective clothing that conforms to CSA Group standard Z96, High-visibility safety apparel, other than the provisions of that standard that pertain to marking, and that is selected in accordance with that standard’s annex on selection, which is to be read as mandatory;

(e) if the employee or individual may be exposed to a risk of head injury, protective headwear that conforms to CSA Group standard Z94.1, Industrial protective headwear — Performance, selection, care, and use, other than the provisions of that standard that pertain to marking;

(f) if the employee or individual may be exposed to a risk of injury to the eyes, face, ears or front of the neck, eye or face protectors that conform to CSA Group standard Z94.3, Eye and face protectors, other than the provisions of that standard that pertain to marking, and that are compatible with any corrective lenses worn by the employee or individual;

(g) if the employee or individual may be exposed to a risk of foot injury or electric shock through footwear, protective footwear that conforms to

(i) CSA Group standard Z195, Protective footwear, other than the provisions of that standard that pertain to marking,

(ii) ASTM International standard F2413, Standard Specification for Performance Requirements for Protective (Safety) Toe Cap Footwear, other than the provisions of that standard that pertain to marking, or

(iii) International Organization for Standardization standard ISO 20345, Personal protective equipment — Safety footwear, other than the provisions of that standard that pertain to marking;

(h) if the employee or individual may be exposed to noise levels exceeding the threshold limit value for sound, other than while diving, personal protective equipment that conforms to and is selected and maintained in accordance with CSA Group standard Z94.2, Hearing protection devices - Performance, selection, care, and use;

(i) if the employee or individual may be exposed to a hazard from a type of gas that can be monitored with a personal gas monitoring device, a device of that type that is explosion-proof and has been calibrated in accordance with the manufacturer's instructions;

(j) if the employee or individual may be exposed to fire or radiated heat from fire, personal protective clothing that conforms to the design and performance requirements set out in Canadian General Standards Board standard CAN/CGSB 155.20, Workwear for protection against hydrocarbon flash fire and optionally steam and hot fluids, or in chapter 7 of National Fire Protection Association standard NFPA 2112, Standard on Flame-Resistant Clothing for Protection of Industrial Personnel Against Short-Duration Thermal Exposures from Fire;

(k) if the employee or individual may be exposed to respiratory hazards, respiratory protective equipment that is

(i) selected and maintained in accordance with CSA Group standard Z94.4, Selection, use, and care of respirators, and

(ii) in the case of a pressure-demand self-contained breathing apparatus that is to be used in atmospheres that are immediately dangerous to life and health, equipped with an audible alarm that sounds when the air supply has diminished to 33% of its capacity;

(l) if the employee or individual may be exposed to a risk of injury to or through the skin, an effective shield, screen, cream, lotion or body covering; and

(m) if the employee or individual is exposed to a risk of falling into the water,

- (i) a life jacket that is appropriate for all expected environmental conditions and conforms to Chapter II of the LSA Code and IMO Resolution MSC.81(70), with the provisions of that Resolution being read as mandatory,*
- (ii) a personal flotation device that is appropriate for all expected environmental conditions and*
 - (A) has been approved by the Minister of Transport, the Canadian Coast Guard or the United States Coast Guard,*
 - (B) is appropriate for the weight of the person who will wear it,*
 - (C) has sufficient buoyancy to keep the person's head afloat, and*
 - (D) is capable of being inflated manually, regardless of whether it is also equipped with automated inflation technology, or*
- (iii) a fall-arrest system as described in paragraph 109(1)(d).*

Respiratory protective equipment

47 (1) Every employer must ensure that any respiratory protective equipment that they provide to employees or other individuals at a workplace under its control is used in accordance with CSA Group standard Z94.4, Selection, use, and care of respirators.

Air supply

- (2) The employer must ensure that any respiratory protective equipment that supplies air is used only if***
 - (a) that air conforms to either CSA Group standard Z180.1, Compressed breathing air and systems or European Committee for Standardization (CEN) standard EN 12021, Respiratory equipment — Compressed gases for breathing apparatus; and***
 - (b) the system that supplies the air is tested, operated and maintained in accordance with CSA Group standard Z180.1, Compressed breathing air and systems.***

Personal gas monitoring device

48 Every employer must ensure that each personal gas monitoring device used at a workplace under its control is bump tested before each use.

General requirements on PPE under sections 44 – 45 and 49 of the *OHS Regulations*.

Specific guidance on each type of PPE is provided below:

EEBDs

With respect to paragraph 46(a) of the *OHS Regulations*, refer also to subsection 22(3) of the *OHS Regulations*. Pursuant to paragraph 46(k) of the *OHS Regulations*, for escape from IDLH atmospheres (e.g., H₂S), EEBD's must be either an SCBA or escape SCBA as described in CSA Z94.4 *Selection, use, and care of respirators*.

Immersion Suits

With respect to paragraph 46(b) of the *OHS Regulations*, refer also to subsection 22(4) of the *OHS Regulations* and the following:

- With respect to section 45 of the *OHS Regulations*, an immersion suit should be:
 - tested to confirm that it performs effectively over a varying range of sizes of individuals. (refer also to subsection 22(4) of the *OHS Regulations*);
 - equipped with a sprayhood, safety harnesses or safety lines, whistles, lights and buddy lines (as defined by *ANSI/CAN/UL 15027 – 2: Immersion suits - Part 2: Abandonment suits, Requirements Including Safety*) and where equipped with such equipment, tested to verify that any attachments do not affect the performance of the suit;
 - selected such that its design considers heat stress and comfort;
 - selected such that its design prevents tripping and snagging hazards;
 - selected such that its materials do not adversely affect the health and hygiene of the user; and
 - selected such that its color and retro-reflectivity is highly visible in low light or foggy conditions.

Additional guidance for the hazards to be considered and the selection of appropriate equipment is provided in *ISO 12402-10 Personnel flotation devices – Part 10: Selection and application of personal flotation devices and other relevant devices*.

- With respect to subparagraph 46(b)(ii) of the *OHS Regulations*, an immersion suit should be:
 - approved as an insulated immersion suit;
 - approved for use without a separate life jacket;
 - selected such that it provides a tight fit around the face, wrist and ankles; and
 - marked with its design temperature.
- Consideration should be given to using the immersion suit with a personal locator beacon which automatically activates upon contact with water if there is an escape directly to sea. While most personal locator beacons operate on a 121.5 MHz analog frequency which is suitable for homing in on location, consideration should be given to selecting beacons that also provide a 406 MHz digital signal that is capable of being picked up on satellite.
- Immersion suits meeting *ISO 15027 – 2: Immersion suits - Part 2: Abandonment suits, requirements including safety* are equivalent to *ANSI/CAN/UL 15027 – 2*, as long as they meet any noted deviations within the Canadian version of the ISO standard.

Anti-Exposure Suits

With respect to paragraph 46(c) of the *OHS Regulations*, refer to the following:

- Consideration should be given to using a personal locator beacon if there is a fall into the sea and rescue is required.
- Additional guidance is provided in *ISO 15027 – 1: Immersion suits - Part 1: Constant wear suits, requirements including safety*.

Personal Protective Clothing

With respect to paragraphs 46(d) and (j) of the *OHS Regulations*:

- CAN/CGSB 155.20 was withdrawn as of December 2022 due to its limited use and support for a revision. Therefore, operators must conform to Chapter 7 of the *NFPA 2112 Standard on Flame-Resistant Clothing for protection of Industrial Personnel Against Short-Duration Thermal Exposures from Fire*.
- Consideration should be given to the following:
 - providing insulation under the personal protective clothing that does not increase risks to individuals (e.g., wearing undergarments made of cotton as opposed to a material that can melt – such as nylon, polypropylene);
 - providing outer layers that are water resistant; and
 - if there is a potential for exposure to an arc flash, providing personal protective clothing that offers protection.
- Additional guidance on the selection of PPE for arc flash is provided in *CSA Z462 Workplace Electrical Safety*.
- Additional guidance on the selection, care, use and maintenance of appropriate personal protective clothing for potential for exposure to fire or radiated heat emitting from a fire is provided in *NFPA (Fire) 2113 Standard on Selection, Care, Use, and Maintenance of Flame-Resistant Garments for Protection of Industrial Personnel Against Short-Duration Thermal Exposures from Fire*.

Protective Headwear

With respect to paragraph 46(e) of the *OHS Regulations*, refer to the following:

- The type of protective headwear used should be:
 - equivalent to a Type 2 as described in *CSA Z94.1 Industrial protective headwear – Performance, selection, care, and use* to provide impact and penetration protection for the crown and the sides;
 - equivalent to either Class E or Class G as described in *CSA Z94.1 Industrial protective headwear – Performance, selection, care, and use* to provide for the highest level of dielectric protection based on a hazard assessment; and
 - if a hazard assessment has not been completed, Type 2, Class E headwear or equivalent should be selected.
- In low-lighting conditions, at night, and where visibility is required, consideration should be given to providing high-visibility headwear or headwear with retroreflective tape. Refer to *CSA Z96, High visibility safety apparel*.
- For protective headwear worn by rope access technicians, refer to subsection 110(4) of the *OHS Regulations*.

Eye and Face Protection

With respect to paragraph 46(f) of the *OHS Regulations*, refer to the following:

- Recommendations from any standards referenced in the *OHS Regulations* or that have been adopted for the activity being performed (e.g., welding, grinding).
- Manufacturer's recommendations for the PPE.
- Recommendations from safety data sheets for the hazardous substances involved.
- Additional guidance is provided in *CSA Z94.3.1 Guideline for selection, use, and care of eye and face protectors*.

Protective Footwear

With respect to paragraph 46(g) of the *OHS Regulations*, refer to the following:

- Protective footwear should at least have an integrated protective toecap and protective sole, and be slip-resistant.
- With respect to paragraph 45(a) of the *OHS Regulations*, examples of hazards to be considered should include hazardous substances, electrical hazards, static electricity hazards, temperatures and wet environments. If being used outside, should consider providing footwear that is insulated and water resistant.
- If the possibility exists that static discharge might cause ignition in a hazardous environment, then consider requiring conductive soles. Additional guidance is provided in *ISO 20345 Personal protective equipment — Safety footwear* for conductive soles and the inspection and tests that need to be undertaken.

Hearing Protection

With respect to paragraph 46(h) of the *OHS Regulations*, hearing protection should also be selected to ensure that communication and audibility needs are met, that protection is adequate for exposure levels, that user comfort is considered and that it is compatible with other PPE. Temperature and humidity levels in the work environment should also be considered. Refer also to the requirements and associated guidance provided in Part 15: Sound Levels of the *OHS Regulations*. It is important to note that CSA Z94.2 requires users to select the octave band approach for noise levels greater than 105 dBA.

Personal Gas Monitoring

With respect to paragraph 46(i) and section 48 of the *OHS Regulations*, refer to the following:

- Guidance on the selection, installation, safe use and maintenance of personal gas monitors and training of operations and maintenance persons is provided in *IEC 60079-29-2 Part 29-2: Explosive Atmospheres - Gas detectors — Selection, installation, use and maintenance of detectors for flammable gases and oxygen*.
- Where atmospheric hazards could be expected in normal operations and in emergencies, personal gas monitors appropriate for detecting hazard(s) must be provided. Employees or other individuals must wear personal gas monitors appropriate to detecting hazard(s) that could be expected⁵².

⁵² C-NLAAIA 205.027(b); CNSOPRAIA 210.027(b)

- A risk assessment must be undertaken by a competent person to identify all areas where gases may accumulate and the associated types of personal gas monitors that must be used⁵³. Refer also to the requirements and associated guidance in Part 31: Hazardous Substances of the *OHS Regulations*. Examples of areas where gases can accumulate and personal gas monitors may be required include confined spaces, machinery spaces in situations where ventilation has stopped working or other upsets have occurred and lifeboats during the running of engines during testing. Consideration should always be given to wearing a personal gas monitor in areas where toxic gases (e.g., H₂S, CO, CO₂, benzene) may accumulate (including areas that have fixed gas detection systems in place). Fixed gas detectors are typically set at higher levels and are intended for monitoring workplace areas for hazards such as fire and explosion or upset conditions. Personal gas monitors are necessary to determine employee exposure levels.
- Properties of personal gas monitors and their limitations must be considered when selecting the appropriate device. Many four head personal gas monitors contain detection capabilities of LELs using a combustible type sensor. Generally, with these types of gas monitors, the larger the molecule, the lower the relative response. Another factor to consideration is the calibration gas used and the potential need for a correction factor. Therefore, they may not be adequate for gas detection of saturated hydrocarbons larger than nonane. For this reason, using a combustible gas detector to detect diesel may not provide an accurate result.
- The detection of hydrocarbons by a personal gas monitor only includes the detection of LELs and is not intended to detect the TLVs of individual components of a hydrocarbon (e.g., benzene). In addition to the more common four head personal gas monitors, additional gas monitors may need to be used that are suitable for detecting the TLVs of individual components (i.e., benzene). This must be determined by the risk assessment undertaken by a competent person as mentioned above⁵⁴.

Respiratory Protective Equipment

With respect to paragraph 46(k) and section 47 of the *OHS Regulations, CSA Z94.4, Selection, use, and care of respirators* provides requirements for establishing a respiratory protection program at the workplace considering factors present at that particular workplace.

In particular, it requires change-out schedules to be developed for air purifying filters or cartridges before the end of their useful service life. In addition to the requirements of that standard, the following should be considered when developing these schedules:

- The results of the investigation and assessment of potential exposures to the hazardous substance of concern as required under section 156 of the *OHS Regulations*.
- Guidance on the characteristics and limitations of respirators in informative Annex G of *CSA Z94.4, Selection, use, and care of respirators*. In particular, breakthrough warning properties (such as sense of smell, taste or irritation) should not be relied upon to determine the change-out schedule for gas/vapour cartridges for the following reasons:

⁵³ C-NLAAIA 205.009(2), 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009(2), 210.015(2)(a) and 210.02(2)(a)

⁵⁴ C-NLAAIA 205.009(2), 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009(2), 210.015(2)(a) and 210.02(2)(a)

- Where a hazardous substance has a TLV that is lower than its odour threshold, it is possible for workers to be overexposed without detecting any odour (e.g., odour threshold for benzene is 1.5 ppm and the TLV is 0.5 ppm).
- Factors such as genetics, olfactory fatigue and smoking may affect an individual's ability to detect breakthrough warning properties.
- Change out schedules should be easy to follow and remember.
- Most respirator manufacturers publish guidelines for establishing change out schedules for their respirators. In addition, the Center for Disease Control and Prevention (CDC), the National Personal Protective Technology Laboratory (NPPTL) and NIOSH have published an application called MultiVapor™ which is a tool for estimating breakthrough times and service life of air-purifying respirator cartridges. Any of these tools should only be used by a competent person (e.g., industrial hygienist).

Skin Protection

With respect to paragraph 46(l) of the *OHS Regulations*, refer to the following:

- Pursuant to section 45 of the *OHS Regulations*, appropriate protective handwear must be selected and worn with consideration given to the hazards in the work area. Hazards considered in selecting appropriate handwear should include:
 - use around hazardous substances or body fluids;
 - cut and abrasion resistance to materials or equipment;
 - impact protection;
 - protection in the winter;
 - protection in wet environments;
 - breakthrough;
 - permeation;
 - grip;
 - dexterity;
 - pinch hazards;
 - snag hazards;
 - fire protection; and
 - other hazards introduced by the nature of the work activities being performed (e.g., galley, cutting, welding, electrical work).
- Recommendations from any standards referenced in the *OHS Regulations* or that have been adopted for the activity being performed (e.g., painting, welding).
- Manufacturer's recommendations for the PPE or materials.
- Safety data sheets which provide information on chemicals that are present in the workplace and recommendations regarding the PPE to be used.
- Appropriate standards should be used for the selection of any handwear and should be demonstrated via testing to be suitable for the application it is intended for.
- Any gloves used for protection against dermal chemical exposure should meet recognized international standards with respect to permeation of liquid or gaseous chemicals.

- Individuals' particular medical conditions (e.g., sensitivities, allergies) may need to be considered when selecting skin protection.
- Any gloves used for medical purposes should be licensed by Health Canada.
- For personal protective clothing, refer to paragraphs 46(d) and (j) of the *OHS Regulations*.

Life Jackets and Personal Flotation Devices

With respect to paragraph 46(m) of the *OHS Regulations*, refer to the following:

- Life jackets and personal flotation devices must be selected based on the physical and environmental conditions at the workplace and should consider the type of work activity being undertaken. Guidance for the hazards to be considered and the selection of appropriate equipment is provided in *ISO 12402-10 Personnel flotation devices – Part 10: Selection and application of personal flotation devices and other relevant devices*.
- Consideration should be given to using the life jacket or personal flotation device with a personal locator beacon in the event that there is an escape directly to sea or a fall into the sea while doing work activities.
- Life jackets and personal flotation devices should meet the equivalent of the following:
 - *ISO 12402-2 Personal floatation devices – Part 2: Lifejackets, performance level 275 – Safety requirements; or*
 - *ISO 12402-3 Personal floatation devices – Part 3: Lifejackets, performance level 150 – Safety requirements.*
- With respect to a life jacket or personal flotation device being used for evacuation, the following should be noted:
 - If the work or activity is planned to occur during periods of severe physical and environmental conditions (e.g., winter, hurricanes), the device should at least meet the requirements of performance level 275.
 - Where additional stowage locations are required because of the location of alternate muster areas and evacuation stations, consideration should be given to stowing life jackets proportionally at these locations.

Personal Protective Electrical Equipment

With respect to subsection 44(1) of the *OHS Regulations*, appropriate PPE should be selected, provided and worn when working on or near electrical equipment that poses a hazard. Guidance on the selection, use, inspection, testing and maintenance of personal protective electrical equipment is also provided in *CSA Z462 Workplace Electrical Safety*.

Section 49 – Records

49 Despite subsection 87(2), every employer must retain the records referred to in paragraph 87(1)(f) in respect of all personal protection equipment that they provide for as long as the equipment is in service.

No guidance required at this time.

PART 9: PASSENGERS IN TRANSIT

Section 50 – Transit by Helicopter

50 (1) The information and instruction that every operator must, for the purpose of paragraph 205.014(1)(a) (or 210.014(1)(a)) of the Act, ensure is provided to each of the employees and other passengers being transported on a helicopter to or from any of its workplaces includes

- (a) an overview of the helicopter's layout and features, including the location of emergency exits and equipment, including life rafts;***
- (b) instruction on precautionary measures to be taken when embarking and disembarking and while en route;***
- (c) the role of passengers during emergencies, including the means by which passengers may communicate directly with the pilot to alert them of an emergency;***
- (d) a demonstration of the donning and doffing of the helicopter passenger transportation suit systems provided in accordance with subsection (3) and instruction on the use of the emergency underwater breathing apparatus provided in accordance with that subsection; and***
- (e) instruction on escape and abandonment procedures, including the use of the life rafts referred to in paragraph (2)(b).***

Equipment

(2) The equipment and devices with which every operator must, for the purpose of paragraph 205.014(2)(b) (or 210.014(2)(b)) of the Act, ensure that any helicopter going to or from any of its workplaces is equipped includes

- (a) equipment that permits the helicopter's flight path to be tracked at all times; and***
- (b) life rafts, each of which is equipped with two position indicating devices, in sufficient numbers to accommodate all passengers on board, having regard to the passengers' space requirements and weight while wearing helicopter passenger transportation suit systems.***

Personal protective equipment

(3) The personal protective equipment that every operator must, for the purpose of paragraph 205.014(3)(a) (or 210.014(3)(a)) of the Act, ensure is provided to each of the employees and other passengers on a helicopter going to or from any of its workplaces includes

(a) a helicopter passenger transportation suit system and life preserver that conform to the Airworthiness Manual published by the Department of Transport; and

(b) an emergency underwater breathing apparatus (EUBA) that conforms to the Canadian Aviation Regulations.

Training

(4) The training that every operator must, for the purpose of paragraph 205.014(3)(b) (or 210.014(3)(b)) of the Act, ensure is provided to each of the employees and other passengers on a helicopter going to or from any of its workplaces includes

(a) practice in donning and doffing the helicopter passenger transportation suit system that is provided to them; and

(b) the training referred to in paragraph 602.66(1)(c) of the Canadian Aviation Regulations in respect of the emergency underwater breathing apparatus that is provided to them.

Exception

(5) The requirements to provide or wear a helicopter passenger transportation suit system or emergency underwater breathing apparatus or to provide training in their use do not apply in respect of any passenger in respect of whom there is an exemption, under subsection 5.9(2) of the Aeronautics Act, from the requirements under the Canadian Aviation Regulations respecting the wearing of a helicopter passenger transportation suit system or the use of an emergency underwater breathing apparatus.

General

- With respect to this section, refer also to the definition of “passenger craft” and associated requirements in the *Accord Acts*.
- In particular, passenger craft must meet the requirements of any Act or other law (e.g., *Canadian Aviation Regulations*) that relates to the health or safety of the employees and other passengers⁵⁵.

Training

- With respect to subsection 50(1) and 50(4) of the *OHS Regulations*, refer to the training requirements and associated guidance under Part 4: Training - General of the *OHS Regulations*.
- With respect to subsection 50(1) of the *OHS Regulations*, the information and instruction should include the requirements for a “Transit by Helicopter Safety Briefing” under section 3.5

⁵⁵ C-NLAAIA 205.014(2)(a); CNSOPRAIA 210.014(2)(a)

of the COP TQOP and section 6 of the *Code of Practice for Transportation of Employees by Helicopter to or from a Workplace*.

- With respect to paragraph 50(2)(b) of the *OHS Regulations*, consideration should also be given to human factors issues regarding deployment of life rafts (e.g., installing externally mounted life rafts) and ease of evacuation (e.g., design of seats to aid in evacuation in a capsized).

Position Indicating Devices

With respect to paragraph 50(2)(b) of the *OHS Regulations*, position indicating devices refers to search and rescue transponders, emergency position indicating radio beacons or equivalent technology which permits search and rescue resources in locating the position of any life rafts deployed on the surface.

Helicopter Passenger Transportation Suit System

- With respect to subsection 50(3) of the *OHS Regulations*, refer to the guidance on these suits provided in section 6.4 of the *Code of Practice for Transportation of Employees by Helicopter to or from a Workplace*.
- With respect to subsection 50(5) of the *OHS Regulations*, Transport Canada Aviation has issued an exemption to helicopter service providers and their flight crew members to transport passengers without helicopter passenger transportation suit systems or helicopter underwater escape breathing apparatuses (e.g., EUBAs) for medical emergencies (e.g., MEDEVAC):
 - [NCR-010-2020](#) – *Exemption from paragraph 602.63(7)(a)(c) and section 602.66 of the Canadian Aviation Regulations* – While every effort should be made to provide a suitable helicopter passenger transportation suit or helicopter underwater escape breathing apparatus (e.g., EUBA) for passengers, there may be insufficient time before the flight to acquire one or a medical reason which prevents a passenger from wearing this equipment. This exemption enables the transport of passengers without this equipment subject to conditions.

Section 51 – Transit by Vessel

51 (1) The information and instruction that every operator must, for the purpose of paragraph 205.014(1)(a) (or 210.014(1)(a)) of the Act, ensure is provided to each of the employees and other passengers being transported on a vessel to or from any of its workplaces includes

(a) an overview of the vessel’s layout and features, including the location of muster stations and emergency exits and equipment, including lifeboats and life rafts;

(b) the meaning of alarms;

(c) instruction on precautionary measures to be taken when embarking and disembarking and while en route;

(d) the role of passengers during emergencies;

(e) a demonstration of the donning and doffing of the immersion suits provided in accordance with subsection (3); and

(f) instruction on escape and abandonment procedures, including the use of the lifeboats and life rafts referred to in paragraph (2)(b).

Equipment

(2) The equipment and devices with which every operator must, for the purpose of paragraph 205.014(2)(b) (or 210.014(2)(b)) of the Act, ensure that any vessel going to or from any of its workplaces is equipped includes

(a) equipment that permits the vessel's path to be tracked at all times; and

(b) lifeboats or life rafts, each of which is equipped with two position indicating devices, in sufficient numbers to accommodate all passengers on board, having regard to the passengers' space requirements and weight while wearing immersion suits and the maximum weight capacity of the boats' or rafts' launching appliances.

Personal protective equipment

(3) The personal protective equipment that every operator must, for the purpose of paragraph 205.014(3)(a) (or 210.014(3)(a)) of the Act, ensure is provided to each of the employees and other passengers on a vessel going to or from any of its workplaces includes a properly fitted immersion suit that conforms to paragraph 46(b).

Training

(4) The training that every operator must, for the purpose of paragraph 205.014(3)(b) (or 210.014(3)(b)) of the Act, ensure is provided to each of the employees and other passengers on a vessel going to or from any of its workplaces includes practice in donning and doffing the immersion suit that is provided to them.

General

- With respect to this section, refer also to the definition of “passenger craft” and associated requirements in the *Accord Acts*.
- In particular, passenger craft must meet the requirements of any Act or other law (e.g., *Canada Shipping Act* for Canadian-flagged marine installations or structures, laws of flag state for foreign-flagged marine installations or structures) that relates to the health or safety of the employees and other passengers⁵⁶.

⁵⁶ C-NLAAIA 205.014(2)(a); CNSOPRAIA 210.014(2)(a)

Training

- With respect to subsections 51(1) and 51(4) of the *OHS Regulations*, refer to the training requirements and associated guidance under Part 4: Training - General of the *OHS Regulations*.
- With respect to subsection 51(1) of the *OHS Regulations*, the information and instruction should include the requirements for a “Transit by Vessel Safety Briefing” under SOLAS and section 3.6 of the COP TQOP. In NL, refer also to section 4 of the *Code of Practice for Transportation of Employees via Vessel to or from a Workplace*.

Position Indicating Devices

With respect to paragraph 51(2)(b) of the *OHS Regulations*, position indicating devices refers to search and rescue transponders, emergency position indicating radio beacons or equivalent technology which helps search and rescue resources to locate the position of any life rafts deployed on the surface. This requirement may be satisfied by providing equipment that can be transported into the life rafts, such as personnel locator beacons, portable GMDSS radios or EPIRBs. For supplemental position indicating devices that must be activated or used by personnel, responsibility for their provision should be identified and associated instruction or training provided in their use.

Capacity

With respect to paragraph 51(2)(b) of the *OHS Regulations*, most life-saving appliances are designed to the LSA Code using an average per passenger weight of 75 kg or 82.5 kg. The lifting capacity, seaworthiness and space provided in life-saving appliances (including lifeboats, life rafts, etc.) should be evaluated and the associated lifting capacity of launching appliances based upon an average individual weight of 100 kg (including the immersion suit) or on the actual average individual weight of a person plus the weight of an average immersion suit. The equipment should be used accordingly and associated evacuation procedures and lifesaving plans should be updated based on the results.

Fatigue

Measures should be applied to allow persons to have adequate sleep before starting their work shifts. Refer to the COP *Fatigue Management in the Canada – Newfoundland and Labrador Offshore Petroleum Industry* (which has been adopted in NS via Safety Directive entitled Fatigue Management COP, File 20, 100.29, December 2018) and in NL, refer also to section 4 of the *Code of Practice for Transportation of Employees via Vessel to or from a Workplace*.

Section 52 – Safe Entry and Exit

52(1) Every operator must establish procedures for safe entry to and exit from each of its workplaces that is a marine installation or structure, including procedures respecting the use of gangways and fast rescue boats to transfer persons between marine installations and structures.

Swing rope not permitted

(2) The procedures must not permit the use of swing ropes for entering to or exiting from a marine installation or structure.

General

- A risk assessment must be completed before the use of alternative means of entry and exit from the workplace to review the equipment, procedures and training measures that should be in place to do this activity safely⁵⁷.
- Appropriate equipment and PPE should be provided, as applicable (e.g., immersion suits, life jackets, head protection, personnel locator beacons, radio communication, safety nets, fast rescue boat, rescue equipment, requirements for secondary retention)
- Procedures should be in place for each type of transfer planned to be undertaken which have been approved by the operator, employer and owner of the passenger craft. These procedures should include:
 - The transfer should only be undertaken in suitable environmental conditions and visibility (e.g., should be undertaken in daylight with low sea states, light winds, light currents and clear visibility and with sufficient time to do a rescue during daylight hours).
 - Associated processes for work refusal.
 - Consideration of the physical and mental condition of persons being transferred (e.g., fatigue, stress, illness).
 - Communication requirements among all personnel involved in carrying out the transfer at the point of disembarkation and embarkation and in between (e.g., fast rescue boat).
 - The requirement to have a passenger manifest for each transfer.
- All transfers should be done under a work permit. Refer to requirements for work permits under Part 10: Work Permits of the *OHS Regulations*.
- Guidance for gangways, vessel to vessel transfers and transport by vessel is also provided under the *Code of Practice for Transportation of Employees via Vessel to or from a Workplace*.
- Requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to any equipment provided for safe entry and exit to marine installations or structures, particularly those requirements for competency, use, inspection, testing and maintenance and requirements for operation and maintenance instructions.

⁵⁷ C-NLAAIA 205.009, 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009, 210.015(2)(a) and 210.02(2)(a)

Gangways

- The use of gangways is interpreted to include fixed gangways (e.g., bridges) and motion compensated gangways (e.g., walk-to-work system) that are used in conjunction with suitable disembarkation and embarkation points.
- Gangways and any associated equipment used (e.g., safety nets) must be appropriately designed and demonstrated to be suitable for the intended area of operation⁵⁸. The design and testing of equipment should be approved by a competent person who is independent of the operator and employer (e.g., classification society, manufacturer, certifying authority) and any limitations with respect to its use must⁵⁹ be clearly identified.
- Following installation of the gangway, it should be appropriately tested and commissioned before use to verify proper configuration and any limitations. This should be witnessed by a competent person who is independent of the operator and employer (e.g., classification society, manufacturer, certifying authority).
- All employees or other individuals involved in using gangways should receive appropriate instruction and training⁶⁰.
- Each time it is deployed for use, the gangway and any associated equipment used should be subject to a pre-use inspection by a person appropriately trained on that specific system against a checklist that has been approved by a competent person who is independent of the operator and employer.
- Only one person at a time should transfer across the gangway.
- Pursuant to subsection 18(1) of the *OHS Regulations*, emergency response plans must include plans for addressing gangway failure during use.
- Pursuant to section 29 of the *OHS Regulations*, a fast rescue boat and crew must be ready for deployment while the gangway is being used.

Fast Rescue Boat Transfer

- The use of this method involves the use of a fast rescue boat to transfer persons between the marine installation or structure and a passenger craft using davit to davit or other approved launching device (i.e., personnel embark and disembark the fast rescue boat without the usage of ladders or pilot ladders).
- Limitations on the number of personnel that can be transferred concurrently should consider any associated weight limitations of the davit and limitations of rescue equipment.
- Pursuant to subsection 18(1) of the *OHS Regulations*, emergency response plans must include plans for addressing the event the fast rescue boat capsizes during use.
- Pursuant to section 29 of the *OHS Regulations*, an additional fast rescue boat and crew must be ready for deployment while the transfer is taking place.

⁵⁸ C-NLAAIA 205.013(g), 205.019(1)(m); CNSOPRAIA 210.013(g), 210.019(1)(m)

⁵⁹ Paragraph 87(1)(c) of the *OHS Regulations*

⁶⁰ C-NLAAIA 205.013(k), 205.019(1)(j); CNSOPRAIA 210.013(j), 210.019(1)(j)

Other Methods

The use of any other method of transfer (other than personnel transfers under section 126 of the *OHS Regulations*) should be discussed with the CSO.

PART 10: WORK PERMITS (Sections 53 – 55)

Contents

53 (1) A work permit that is required by these Regulations must be issued, in either paper or electronic form, by a competent person designated by the employer with control over the workplace at which the activity to which the work permit relates is carried out, must be approved by a second competent person designated by that employer and must set out

(a) the name of the person who issued it and the person who approved it;

(b) the name of each person to whom it is issued;

(c) the periods during which the permit is valid;

(d) the activity to which the permit relates, the location at which the activity is to be carried out and any restrictions to which it is subject;

(e) any circumstances under which the activity is to be carried out that may have an effect on the health and safety risks associated with it, including

(i) environmental conditions,

(ii) impediments to the proper use of any equipment or other thing, and

(iii) other activities being carried out in the area, with reference to any permit or certificate associated with those activities;

(f) work procedures — including those that apply to a specific space, task, material, type of equipment or system – that are developed having regard to the circumstances referred to in paragraph (e) and are to be followed to minimize the health and safety risks associated with the activity, including

(i) any equipment, machine, device or system that must be locked out,

(ii) any tests that must be performed before, during and after the activity,

(iii) the particulars of any tags or signs to be used,

(iv) any protective equipment to be used,

(v) the procedures to be followed in the case of an emergency or any other change in the conditions in which the activity is carried out, the persons involved or the equipment being used, and

(vi) procedures for addressing any impediment to the proper use of any equipment or other thing;

(g) any other engineering and administrative control measures in relation to the activity that are necessary for the health and safety of persons at the workplace;

(h) the identification number of any lock used in a lockout referred to in subparagraph (f)(i);

(i) the results of any tests referred to in subparagraph (f)(ii), the date on which and time at which they were performed and the signature of the person who performed them; and

(j) any other information or documentation that is necessary to ensure that all persons involved in the activity are informed of the health and safety risks associated with it.

Signatures

(2) The work permit must be signed by the person who issued it, the person who approved it and every person involved in the activity to which it relates, to certify that they have read and understood its contents.

Occupational health and safety program

54 Every occupational health and safety program must address the issuance and use of work permits, including

- (a) activities that require a work permit;***
- (b) the work permit issuance process, including roles and responsibilities in obtaining or issuing a work permit, having regard to the nature of the activity to which the permit relates;***
- (c) methods of assessing hazards;***
- (d) methods of communicating information about work permits to affected employees;***
- (e) the instruction and training to be given to employees with respect to work permits; and***
- (f) record-keeping requirements in relation to work permits.***

Employer obligations

55 (1) Every employer must ensure that

- (a) every activity that requires a work permit and is carried out at a workplace under its control is carried out in accordance with a work permit; and***
- (b) every work permit issued at a workplace under its control is made readily available to employees for the duration of the activity to which it relates.***

Retention of copy

(2) Every employer must retain a copy of each work permit issued at a workplace under its control for at least three years after the day on which the activity to which it relates is completed.

Coordination and Control

The operator must coordinate all work and activities for which an authorization has been issued⁶¹. The permit to work process should therefore identify how the coordination and control of the issuance and return of work permits is managed such that there is an overview of all operations, both underway and planned, to ensure potential hazards are not compounded. There should only

⁶¹ C-NLAAIA 205.013(a); CNSOPRAIA 210.013(a)

be one work permit system in use onboard a marine installation or structure. For production, drilling or accommodations installations, refer to the requirements and associated guidance under sections 101 and 102 of the *Framework Regulations*.

Authorization

With respect to subsection 53(1) of the *OHS Regulations*, all work permit activities should be authorized by the person in charge of the marine installation or structure or their delegate.

Concurrent Activities

With respect to paragraph 53(1)(f) of the *OHS Regulations*, the procedures should also identify which work or activities should not be carried out concurrently with other activities.

Activities under a Work Permit

With respect to paragraph 54(a) of the *OHS Regulations*, activities that may present a potential hazard and require a work permit include, but are not limited to:

- Work over the side (refer to requirements and any associated guidance under section 29 of the *OHS Regulations*).
- Transfers via gangway or fast rescue boat (refer to requirements and associated guidance under section 52 of the *OHS Regulations*).
- Work at height (refer to requirements and any associated guidance under Part 22 of the *OHS Regulations*).
- Lifts other than low risk routine (e.g., heavy lifts, complex lifts, lifts over the side) (refer to requirements and any associated guidance under Part 24 of the *OHS Regulations*).
- Personnel transfers (refer to requirements and any associated guidance under Part 24 of the *OHS Regulations*).
- Confined space entry (refer to requirements and associated guidance under Part 25 of the *OHS Regulations*).
- Hot work (refer to requirements and associated guidance under Part 26 of the *OHS Regulations*).
- Use of equipment (e.g., camera) or activity that is a potential source of ignition (refer to requirements and associated guidance under Part 26 of the *OHS Regulations*).
- Work on equipment with hazardous energy, including electrical, mechanical, pressure, etc. (refer to requirements and any associated guidance under Part 27 of the *OHS Regulations*).
- Use of explosives (refer to requirements and any associated guidance under Part 30 of the *OHS Regulations*).
- Diving activities (refer to requirements and any associated guidance under Part 32 of the *OHS Regulations*).
- Inhibit or override of monitoring and control systems or the isolation or de-isolation of safety or environmentally critical devices (refer to subparagraph 53(1)(e)(ii) of the *OHS Regulations*).

Job Safety Analysis (JSA)

- With respect to paragraph 54(c) of the *OHS Regulations*, the methods of assessing hazards should include:
 - A review of control measures, including in associated operating and maintenance procedures and associated hazard identification documentation (e.g., JSAs).
 - Identification of any additional hazards associated with the work being undertaken at the work site or from ongoing operations, both by persons preparing, issuing and authorizing the permit and by those performing the work.
 - The process for continual update and improvement of operating and maintenance procedures and associated hazard identification documentation (e.g., JSAs).

Toolbox Talks

With respect to paragraph 54(d) of the *OHS Regulations*, methods of communication refers to toolbox talks or equivalent.

Supplementary Information

With respect to paragraph 54(f) of the *OHS Regulations*, it is interpreted that the work permit includes any supplementary information associated with the work (e.g., isolation certificates, gas testing certificates, drawings, safety data sheets).

Posting

With respect to paragraph 55(1)(b) of the *OHS Regulations*, a copy of the work permit documentation should be available in the immediate work area for reference and if applicable, barriers and signs should be posted.

Records

With respect to subsection 55(2) of the *OHS Regulations*, any supplementary information associated with the permit (e.g., isolation certificates, gas testing certificates, drawings, safety data sheets) should also be maintained as a record with the associated work permit, whether it is in paper or electronic form.

PART 11: FACILITIES

Section 56 – Application

56 This Part applies in respect of a workplace that is a marine installation or structure.

No guidance required at this time.

Section 57 – Accommodations Area

57 (1) Every employer must ensure that the accommodations area at each workplace under its control

(a) is constructed in a manner that allows it to be easily cleaned and disinfected;

(b) is constructed so that sleeping quarters are not exposed to sound levels in excess of 70 dB;

(c) is equipped with adequate water and sewage systems;

(d) is equipped with adequate heating, air-conditioning and ventilation systems that ensure that

(i) its thermal conditions conform to ANSI/American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) standard 55, Thermal Environmental Conditions for Human Occupancy, and

(ii) its ventilation rate conforms to ANSI/ASHRAE standard 62.1, Ventilation for Acceptable Indoor Air Quality; and

(e) is maintained in a clean and sanitary condition and in good repair.

Storage of equipment

(2) The employer must ensure that no equipment is stored in an accommodations area unless the equipment

(a) is intended to be used in the accommodations area; and

(b) is stored in a closet that is provided for that purpose and fitted with a door.

General

- Refer to the definition of “accommodations area” in section 1 of the *OHS Regulations*.
- With respect to paragraph 57(1)(b) of the *OHS Regulations*, the referenced 70 dB is the level the ACGIH TLV refers to as “effective quiet”. This is the level at which temporary shifts in a person’s hearing threshold would recover based upon the TLV. While this may be acceptable from a hearing loss and health perspective, it may not be adequate for prevention of fatigue. Ideally, sleeping quarters should be constructed such that sound levels are in the range of 40 – 60 dB in accordance with other accepted industry standards (e.g., *NORSOK S-002: Working Environment*, SOLAS, ILO MLC) and classification society rules.
- A risk assessment must be undertaken to identify additional measures to be implemented to reduce the risks⁶². This should include consideration of the following:
 - Installation of non-skid floor surfaces, gratings or mats in areas such as galleys, showers, washrooms, laundry rooms or other areas where surfaces may become wet and slippery.

⁶² C-NLAAIA 205.009, 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009, 210.015(2)(a) and 210.02(2)(a)

- Instructions for checking and removing items from the pockets of clothes that may pose a risk of injury to persons working in the laundry room.
- Refer to requirements of Part 18: Equipment, Machines and Devices and Part 27: Hazardous Energy of the *OHS Regulations*, which apply to any equipment, particularly those requirements for design, guarding, competency, use, inspection, testing and maintenance of the equipment. In particular, operations and maintenance instructions must be developed and consider manufacturer's instructions and any hazards. Additional guidance on machinery used in food preparation areas (e.g., galleys, kitchens) is provided in the *European Union Directive 2006/42/EC on machinery*.
- Guidance on the design, operation and maintenance of plumbing and associated fixtures is provided in classification society rules.

Sections 58 – 62 - Requirements

Washrooms

58 (1) Every employer must make available a sufficient number of washrooms for use by persons of all gender identities at each workplace under its control, in locations conveniently accessible from all work areas.

Multiple toilets

(2) If there are multiple toilets within a washroom, the employer must ensure that
(a) each toilet is partitioned in a separate stall with a solid, properly closing door and fastener to ensure privacy; and
(b) if the washroom is for use by persons of more than one gender identity, the partitions and doors extend from floor to ceiling.

Requirements

(3) The employer must ensure that all washrooms
(a) contain handwashing facilities as described in subsection 60(2);
(b) are, on their floors and the lower 15 cm of their walls and partitions, watertight, except for drains, and impervious to moisture;
(c) are adequately heated;
(d) are adequately ventilated;
(e) are maintained in a clean and sanitary condition and in good repair;
(f) are provided with a sufficient supply of toilet paper; and
(g) are provided with a waste receptacle with a lid.

Portable Toilet Units

59 (1) If the number of washrooms at a workplace is not sufficient to accommodate the number of persons at that workplace during its commissioning or decommissioning, the employer with control over the workplace may satisfy its obligations under subsection 58(1) by supplementing the available washrooms with portable toilet units.

Requirements

(2) The employer must ensure that all portable toilet units

(a) are supplied with

(i) soap in a dispenser, clean water and disposable towels, or

(ii) hand sanitizer;

(b) are emptied and serviced at regular intervals in accordance with good hygiene practice; and

(c) satisfy the requirements set out in paragraphs 58(3)(d) to (g).

Handwashing Facilities

60 (1) Every employer must make available a sufficient number of handwashing facilities for use by persons at each workplace under its control, in locations conveniently accessible from all work areas.

Requirements

(2) The employer must ensure that all handwashing facilities

(a) have a supply of either clean hot and cold or clean warm water;

(b) are supplied with soap in a dispenser;

(c) are supplied with individual clean and sanitary towels or another suitable means of drying hands; and

(d) are maintained in a clean and sanitary condition and in good repair.

Showers

61 (1) Every employer must make available a sufficient number of showers for use by persons at each workplace under its control.

Requirements

(2) The employer must ensure that all showers

(a) are designed for use by one person at a time, with walls, partitions or curtains in place as necessary to ensure privacy;

(b) have floors and walls that are watertight, except for drains, and impervious to moisture;

(c) have a supply of clean hot and cold water;

(d) are supplied with individual clean and sanitary towels; and

(e) are maintained in a clean and sanitary condition and in good repair.

Changing Facilities

62 Every employer must provide, at each workplace under its control, a changing facility that

(a) is located adjacent to a washroom;

(b) is of sufficient size to allow employees to change in and out of work clothing;

(c) has, for each employee at the workplace who is on rotation, a locker with sufficient capacity to store the employee's personal clothing while they are working and their work clothing and equipment while they are not working;

(d) has sufficient capacity to allow for storage of personal protective equipment belonging to off-rotation employees, if there is insufficient storage available to those employees in their sleeping quarters; and

(e) contains a means of drying wet clothing.

No guidance required at this time.

Section 63 – Sleeping Quarters

63 (1) Every employer must ensure that the sleeping quarters at each workplace under its control contain, for each person assigned to those quarters,

(a) a standalone bed or bunk

(i) that has inner dimensions of at least 1.98 m by 80 cm,

(ii) that is not part of a unit that is more than double-tiered,

(iii) whose bottom is at least 30 cm off the floor, if it is a standalone bed or the lower bunk in a double tiered unit, or approximately midway between the bottom of the lower bunk and the ceiling, if it is the upper bunk in a double tiered unit,

(iv) that is equipped with an access ladder and a suitable barrier to protect against falls, if it is the upper bunk in a double-tiered unit,

(v) that can be easily cleaned and disinfected, and

(vi) that is supplied with clean and sanitary bedding;

(b) a storage area fitted with a locking device to hold the employee's personal belongings; and

(c) a reading lamp.

Private room and washroom

(2) Every employer must, to the extent feasible, assign each person at a workplace under its control their own sleeping quarters with direct access to their own washroom containing a shower.

Alternative

(3) If compliance with subsection (2) is not feasible, the employer must

(a) assign no more than two persons to sleep in the same sleeping quarters at the same time, unless a greater number is approved in advance by the Chief Safety Officer on a short-term basis; and

(b) if the workplace is a marine installation or structure used for drilling or production or as a living accommodation, ensure that all persons have direct access from their sleeping quarters to a washroom containing a shower and that no more than two sleeping quarters have direct access to the same washroom.

Quality of Sleep

With respect to subsection 63(1) of the *OHS Regulations*, the following should be considered to provide for better quality of sleep:

- Providing lightproof blinds or blackout curtains on windows to ensure complete darkness.
- Installing curtains on each bed in sleeping quarters with multiple persons.

Private Room and Washroom

With respect to subsection 63(2) of the *OHS Regulations*, the intent of this requirement is to provide personnel with their own sleeping quarters for privacy and for sleep without disruption. As such:

- New purpose-built marine installations or structures should be designed such that this requirement is met (i.e., no shared sleeping quarters or shared washrooms, even between shifts).
- For existing marine installations or structures that do not strictly meet this requirement, the following is expected by operators and employers:
 - Primarily, dedicated (one-person) sleeping quarters must be provided as much as possible by using available capacity and careful planning.
 - If this is not possible, alternate arrangements, such as sharing sleeping quarters between one person on day shift and one person on night shift, are acceptable.
 - If this is also not possible, two persons can sleep in the sleeping quarters concurrently.
 - No more than two persons can occupy the same sleeping quarters concurrently according to the *OHS Regulations*.
 - Hot bunking (i.e., assigning two different persons the same bed to sleep in on opposite shifts) should not be permitted.
 - With respect to achieving the “extent feasible” requirement of subsection 63(2) of the *OHS Regulations*, this may be accomplished by following the above and should include consideration of the following:
 - the required persons needed on each shift to maintain safe operations;
 - managing persons split between day-shift and night-shift in an attempt to meet the intent of the regulation; and
 - workforce feedback with respect to sleeping quarters assignment/planning and shift preference (day or night).

Pursuant to paragraph 63(3)(a) of the *OHS Regulations*, if operators and employers are able to demonstrate that compliance with subsection 63(2) of the *OHS Regulations* is not feasible, CSO approval is not required to have two persons sleeping in a sleeping quarter concurrently, provided that the requirements of subsection 63(1) of the *OHS Regulations* are met.

Requests to exceed two persons in Sleeping Quarters

With respect to subsection 63(3) of the *OHS Regulations*, CSO approval is required to exceed two persons sleeping in sleeping quarters concurrently. In all circumstances, it must be demonstrated:

- It will be for a short-term basis and subsection 63(2) of the *OHS Regulations* will be complied with as much as possible in assigning rooms.
- Fatigue should be reduced to as low as practicable.
- Hygiene should not be compromised in any way.

When a request is made to the CSO for drilling and production installations, the following should be considered when making a request:

- A short-term basis should be interpreted to be limited to construction and maintenance turnarounds or other periods during which normal operations are not taking place.
- There are other requirements of the *OHS Regulations* and the *Framework Regulations* to be considered when making these requests, such as additional PPE or life-saving appliance capacity.
- A risk assessment must be done pursuant to the *Accord Acts*⁶³ and should address:
 - identification of hazards associated with the volume and location of hydrocarbon inventory;
 - additional weight considerations;
 - space allocation;
 - distribution of persons;
 - supervision of persons;
 - increased level of work permit activity and any system requiring isolation;
 - affect on accommodations support staff;
 - issues associated with fire protection, escape, evacuation and rescue; and
 - any other foreseeable hazard(s).
- The measures to be implemented should include any associated changes to processes, procedures, organization, training and equipment. A summary of the risk assessment and associated measures should be described in the Safety Plan.
- Any impacts associated with compliance with existing regulatory requirements may require an RQ to be submitted for approval in accordance with the *Accord Acts*.

⁶³ C-NLAAIA 205.009, 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009, 210.015(2)(a) and 210.02(2)(a)

Section 64 – Dining Area

64 Every employer must ensure the provision, at each workplace under its control, of a dining area that is

- (a) of sufficient size to allow individual seating and table space for each employee expected to be using the area at one time;**
 - (b) separated from any place containing a hazardous substance that may contaminate food, dishes or utensils;**
 - (c) provided with waste receptacles; and**
 - (d) maintained in a clean and sanitary condition and in good repair.**
-

No guidance required at this time.

Section 65 – Smoking Areas

65 (1) It is prohibited to smoke or use a vaping device at a workplace other than in an area designated for that purpose by the employer with control over the workplace.

Designation of areas

(2) An employer must select any area that it designates as an area in which smoking or the use of a vaping device is permitted having regard to

- (a) the area's proximity to fire and explosion hazards; and**
- (b) the need to prevent exposure of other persons at the workplace to emissions — both directly from the product and as exhaled by the user — from smoking or the use of a vaping device.**

Prohibition in vicinity of drilling or production

(3) It is prohibited to smoke or use a vaping device — even within a designated area — on the deck of a marine installation or structure if drilling or production activities are being carried out in the vicinity.

Indoor areas

(4) The employer must ensure, with respect to any indoor area that it designates as an area in which smoking or the use of a vaping device is permitted, that

- (a) the designated area is maintained under negative pressure with respect to the adjacent area;**
- (b) the designated area is separated from the adjacent area by solid walls, floors and ceilings and solid doors equipped with an automatic closing mechanism; and**

(c) air transfer into the designated area is maintained at a rate of at least 24 L/s per occupant, regardless of whether the doors are open or closed, and air is not recirculated.

Signage

(5) Every employer must ensure that signage is posted outside each entrance to an area in which smoking or the use of a vaping device is permitted, indicating

(a) that persons entering the area may be exposed to emissions from smoking or the use of a vaping device; and

(b) the area's maximum occupancy level, as determined with regard to its air transfer rate, if the area is indoors.

Designation removed

(6) If an employer removes the designation of an area as an area in which smoking or the use of a vaping device is permitted, it must ensure that the signage referred to in paragraph (5)(a) remains posted outside each entrance to the area until the area contains no residual contaminants from the smoking or vaping activity.

- With respect to subsection 65(3) of the *OHS Regulations*, in addition to the prohibition of smoking during drilling or production activities, smoking in outdoor areas should also not be permitted on support craft or other vessels operating close to marine installations or structures that are actively engaged in drilling and production activities.
- Because matches and lighters are a potential source of ignition, they should not be permitted to be used onboard a marine installation or structure. Appropriate wall mounted CSA or equivalent approved ignition devices should be installed in smoking areas.
- If an indoor smoking area is used, preventative maintenance programs should regularly evaluate the effectiveness of the ventilation to prevent smoke and odours from escaping.
- Guidance for the design of smoking areas is provided in *ANSI/ASHRAE Standard 62.1 Ventilation for Acceptable Indoor Air Quality*.
- Part 16: Ventilation of the *OHS Regulations* provides requirements and associated guidance for an indoor smoking area.

PART 12: SANITATION AND HOUSEKEEPING

Section 66 – Waste Material

66 The risks associated with the accumulation of and exposure to waste material, including garbage, recyclable refuse, food waste and debris, are prescribed risks for the purpose of

paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and every employer must ensure, at each workplace under its control, that

(a) waste material is collected, handled, segregated and removed in a safe and hygienic manner;

(b) waste receptacles and other facilities for disposing of and storing waste material are provided to prevent its hazardous accumulation; and

(c) all waste receptacles that are provided in dining and food preparation areas or that are intended to hold waste material that could give rise to a hazard, including waste material that is flammable or combustible, are

(i) made of fire-rated material,

(ii) leakproof,

(iii) fitted with a tight-fitting lid, and

(iv) maintained in good working order and in a clean and sanitary condition.

- The amount of combustible material such as wood, paper and synthetic material onboard should be minimized and it should only be stowed in areas that have been designed to detect, contain and extinguish a fire if one should occur. Refer to the guidance on fire hazards provided under section 26 of this Guideline.
- Guidance on waste management and disposal is also provided in the *WHO Ship Sanitization Guidance*.

Section 67 – Pests

67 (1) The risks associated with the presence of pests are prescribed risks for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and every employer must ensure that the enclosed parts of each workplace under its control are constructed, equipped and maintained in manner that prevents, to the extent feasible, the entry of pests.

Elimination of pests

(2) If pests have entered an enclosed part of the workplace, the employer must immediately take all steps necessary to eliminate the pests and prevent their re-entry.

Records

(3) The occupational health and safety program must provide for the keeping of pest control inspection and pesticide application records.

Guidance on pest control is provided in the *WHO Ship Sanitization Guidance*. The types of pests that should be addressed by the program include rats, mice, cockroaches, mites, bed bugs, etc.

Section 68 – Cleanliness and Orderliness

68 The hazard control measures set out in every occupational health and safety program must include procedures for

(a) maintaining the workplace in a clean and orderly state;

(b) ensuring that all surfaces at the workplace on which a person may stand are kept free of slipping and tripping hazards; and

(c) ensuring that all cleaning of the workplace is carried out in a manner that does not allow dust or any other substance that may be harmful to employees' health or safety to contaminate the air.

General

- Requirements for monthly workplace inspections are provided in the *Accord Acts*⁶⁴. Operators and employers should ensure that all areas are inspected with the aid of a checklist.
- Additional guidance on the hazards to be included, the equipment to be verified and the conditions that should be observed are provided generally on the CCOHS website (www.ccohs.ca). Checklists should also consider any requirements of the regulations, standards, industry best practices or manufacturer recommendations.
- Pursuant to the *Accord Acts*⁶⁵, records of inspections must be maintained and made available for review upon request and this should include any records of cleaning and hygiene inspections.

Hygiene

- Common areas of the accommodations area and any other area outside the accommodations area, such as washrooms, showers, changing facilities, offices, local control rooms, should be cleaned at least once every day.
- Personal rooms, such as sleeping quarters, showers and washrooms should be cleaned and linens changed as often as necessary to ensure that health and hygiene standards are met. Cleaning should be carried out whenever there is a change in room assignments, upon request by an occupant and at least twice a week.
- Hygiene inspections should be carried out weekly in the living accommodations area and the above-noted areas by competent persons, including a review of conditions and practices for food safety, the condition of the potable water system, the cleanliness of personal rooms and common areas and any other aspects. The cleanliness of PPE and eye-wash stations should also be confirmed.

⁶⁴ C-NLAAIA 205.013(q); CNSOPRAIA 210.013(q)

⁶⁵ C-NLAAIA 205.013(r); CNSOPRAIA 210.013(q)

Section 69 – Storage

69 Every employer must ensure that all things at each workplace under its control are stored or placed in a manner that does not present a hazard to the health or safety of any person, including by

- (a) impeding the safe movement of persons, equipment or things through corridors, entrances or exits;**
 - (b) impeding access to or the use of firefighting, first aid or other emergency equipment;**
 - (c) interfering with the operation of fixed fire protection equipment;**
 - (d) impeding access to electrical panels, equipment control panels or emergency disconnect switches or devices;**
 - (e) obstructing ventilation or illumination;**
 - (f) exceeding the maximum load-carrying capacity of the thing on which they are stored or placed; or**
 - (g) being stacked in a manner that makes them unstable.**
-

- Consideration should also be given to any hazards presented by the things being stored, such as physical (e.g., capable of tipping over) or chemical properties (e.g., flammable or toxic) and to the detection and protection methods that may be required.
- On facilities subject to motion, consider installing bars across shelving and attaching securing devices to chairs or other equipment that may move.
- Interfering with the operation of fixed fire protection equipment under paragraph 69(c) of the *OHS Regulations* should be interpreted to include both fixed fire and gas detection equipment and fire protection systems.

PART 13: FOOD AND POTABLE WATER

Section 70 – Food Safety

70 The risks arising from the consumption of unsafe food are, in respect of every workplace at which food is served, prescribed risks for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and the employer with control over the workplace must ensure that

- (a) all preparation, storage, handling or serving of food is done in accordance with the Codex Alimentarius Commission’s “Recommended International Code of Practice: General Principles of Food Hygiene”, as set out in its publication *Food Hygiene (Basic Texts)*, with the recommendations in the Code being read as mandatory;**
- (b) foods that require refrigeration to prevent them from becoming hazardous to health are maintained at a temperature of 4°C or lower;**
- (c) foods that require freezing to prevent them from becoming hazardous to health are maintained at a temperature of -18°C or lower; and**

(d) temperature logs are maintained for hot and cold holding units, including refrigerators and freezers.

- In addition to the referenced standard, some additional considerations for food safety are also provided in the *WHO Ship Sanitization Guidance*.
- All employees working with food must be trained in safe handling practices in accordance with the referenced international code of practice. Additional guidance for a chief steward working on a drilling or production installation is provided in the COP TQOP.
- Additional resources for food safety are provided on the CCOHS website (www.ccohs.ca).
- In NL, reference should also be made to the *Food Premises Act*⁶⁶ and any requirements with respect to food handling equipment that are not addressed by the regulations and standards noted above.

Section 71 – Potable Water

71 (1) Every employer must provide, to all persons at each workplace under its control, potable water for drinking and food preparation and must ensure that clean and sanitary cups are provided for drinking water that is not provided from a drinking fountain.

Occupational health and safety program

(2) The risks associated with the consumption of non-potable water are prescribed risks for the purpose of paragraph 205.02(2)(a) of the Act and every occupational health and safety program must

(a) provide for on-site oversight by a competent person of the daily operation of the system by which potable water is provided;

(b) require notification of the workplace committee or coordinator, as the case may be, of any samples taken from that system that fail to meet the requirements for potable water;

(c) set out procedures for addressing any failures of the system to provide water that meets the requirements for potable water; and

(d) address the keeping of records relating to the system, its oversight and its performance.

Definition of potable water

(3) In this section, potable water means water that conforms to the Department of Health's Guidelines for Canadian Drinking Water Quality.

⁶⁶ Referred to as the Food and Drug Act under the definition of NL social legislation in section 205.001 of the C-NLAAIA. Refer also to provision for application under section 205.007 of the C-NLAAIA.

- A minimum volume of potable water must be maintained onboard the marine installation or structure at all times. The determination of the minimum amount should consider the availability and suitability of water-making equipment, the remoteness of the area of operations and environmental conditions that may affect supply and the maximum expected consumption levels.
- To facilitate conformance to the *Guidelines for Canadian Drinking Water Quality* for a short-term program, arrangements should be made to test the water before the start of the program.
- As there may be other contaminants present in offshore systems that would not be present in a typical land-based water supply system, operators should do an evaluation and implement measures to reduce the exposure of workers to any contaminants that pose a threat. Refer to Part 31: Hazardous Substances of the *OHS Regulations*.
- Additional guidance on potable water is provided in the following:
 - *Norwegian Institute of Public Health - Safe, Sufficient and Good Potable Water Offshore: A guideline to design and operation of offshore potable water systems*. It should be noted that this guideline contains several considerations for offshore petroleum operations, such as measures to be put in place to prevent contamination of the water supply and considerations for potable water transferred from a support craft.
 - *WHO Ship Sanitization Guidance*.

PART 14: LIGHTING

Section 72 – Non-application

72 This Part does not apply to the lighting of the bridge of a mobile offshore drilling unit or the bridge of any ship used for construction, production or diving or for geotechnical or seismic work.

- Particular attention should be paid to the illumination provided in control rooms and other areas where display screens are used regularly or where the work requires good visibility (e.g., day/night, various physical and environmental conditions).
- Any issues associated with reflection or interference with other lighting should be prevented.
- Consideration should also be given to lighting levels on exterior decks that may create a hazard to navigation for the marine installation or structure or to other vessels or aircraft that may be present in the area.
- Additional guidance is provided in *IMO Circular MSC.1/Circ. 982 Guidelines on Ergonomic Criteria for Bridge Equipment and Layout*.

Section 73 – Minimum Levels of Lighting

73 Every employer must, in respect of each workplace under its control, ensure that

(a) all persons at the workplace have sufficient lighting — in terms of both quantity and quality — to perform all of their tasks safely; and

(b) if the workplace is a marine installation or structure, the average level of lighting at a work position or in an area referred to in column 1 of the following table is not less than that set out in column 2 when the workplace’s primary lighting system is operational.

General

- With respect to paragraph 73(a) of the *OHS Regulations*, where a minimum level of lighting for a certain area has not been prescribed by the table referenced in paragraph 73(b) of the *OHS Regulations*, refer to additional guidance provided in the following:
 - Section 9 of *API RP 14F Recommended Practice for Design, Installation, and Maintenance of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class 1, Division 1 and Division 2 Locations* or *API RP 14FZ Recommended Practice for Design, Installation, and Maintenance of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class I, Zone 0, Zone 1 and Zone 2 Locations*
 - *DNV-OS-A301 Human Comfort*
 - *ANSI/IES RP-7-21 Recommended Practice: Lighting Industrial Facilities*
- Additional resources for lighting are provided on the CCOHS website (www.ccohs.ca).
- Requirements of Part 18: Equipment, Machines and Devices and Part 27: Hazardous Energy of the *OHS Regulations* apply to lighting systems, particularly those requirements for design, competency, use, inspection, testing and maintenance.

Periodic Surveys

Periodic measurements of lighting levels should be performed to confirm that minimum lighting levels are maintained. In areas where new equipment has been installed, a re-assessment of that area should be considered.

Section 74 – Emergency Lighting

74 (1) Every employer must ensure that each workplace under its control that is a marine installation or structure is equipped with an emergency lighting system that

(a) turns on automatically if the primary lighting system fails; and

(b) provides sufficient dependable illumination to enable all emergency measures to be carried out, including emergency shutdown procedures and evacuation of persons from the workplace.

Verification

(2) The employer must ensure that the emergency lighting system is verified to be in working order at least once a month.

General

- For drilling, production and accommodations installations, refer to requirements and associated guidance for placement of emergency lighting in certain areas according to section 126 of the *Framework Regulations*.
- With respect to section 74(1), additional guidance on the minimum levels of lighting for emergency egress on all marine installations or structures is also provided in *API RP 14F Recommended Practice for Design, Installation, and Maintenance of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class 1, Division 1 and Division 2 Locations* or *API RP 14FZ Recommended Practice for Design, Installation, and Maintenance of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class I, Zone 0, Zone 1 and Zone 2 Locations*.
- Requirements of Part 18: Equipment, Machines and Devices and Part 27: Hazardous Energy of the *OHS Regulations* apply to emergency lighting systems, particularly those requirements for competency, use, inspection, testing and maintenance.

Periodic Surveys

Periodic measurements of emergency lighting levels should be performed to confirm that minimum lighting levels are maintained for emergency egress.

Section 75 – Handling, Storage and Disposal

75 Every employer must ensure that lighting components and bulbs at each workplace under its control are handled, stored and disposed of in accordance with the manufacturer's instructions and in a manner that does not pose a risk to any person.

No guidance required at this time.

PART 15: SOUND LEVELS

Section 76 – Unimpeded Communication

76 Every employer must ensure that sound levels at each workplace under its control do not impede communication during normal or emergency operations.

This refers to background noise that may be generated from equipment or other operations ongoing in the area.

Section 77 – Noise

77 (1) Excessive noise is a prescribed risk for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and every employer must ensure, with respect to each workplace under its control, other than an underwater area, that

(a) noise surveys are carried out in accordance with CSA Group standard Z107.56, Measurement of noise exposure;

(b) to the extent feasible, the threshold limit value for sound is not exceeded; and

(c) if it is not feasible to reduce sound levels at the workplace to within the threshold limit value,

(i) signs are posted at the entrances to or on the periphery of areas where employees may be exposed to excessive sound levels that clearly indicate the presence of a noise hazard and identify the personal protective equipment that is required in that area, and

(ii) every employee at the workplace undergoes an audiometric test every two years, or more frequently as recommended by an audiologist or occupational physician.

Survey results

(2) The employer must retain the results of all noise surveys for at least 10 years after the day on which they were carried out.

Instruction and training

(3) The instruction and training that every employer must provide to its employees includes instruction and training on the risks posed by excessive noise.

General

- Refer to the definition of “threshold limit value” in Part 1 of the *OHS Regulations*.

- Good practice to meet the requirements under this section of the *OHS Regulations*, would be addressed through the implementation of a hearing loss prevention program as described in section 8.2.3 of *CSA Z94.2, Hearing protection devices - Performance, selection, care, and use* and the referenced *CSA Z1007 Hearing loss prevention program (HLPP) management standard*.
- *CSA Z107.56, Measurement of noise exposure* also provides references to other standards which should be consulted for the development of a hearing loss prevention program, audiometric testing, noise emissions from machinery, etc.
- Requirements for extended work shifts are also provided in *CSA Z94.2, Hearing protection devices - Performance, selection, care, and use* and ACGIH.
- The following should be considered if the noise cannot be eliminated:
 - Effective engineering controls for consideration could include:
 - sound barriers, such as walls or curtains;
 - enclosing or isolating the source; and
 - low noise tools and machinery, where possible.
 - Administrative controls should consider:
 - limiting time in certain areas or performing tasks;
 - limiting workers in an area to only those necessary when noise generating activities are being performed; and
 - increasing the distance of the workers from the source.
- Additional resources for noise are provided on the CCOHS website (www.ccohs.ca).

Noise Exposure Assessments

As part of the risk assessment required under subsection 77(1) and the noise survey required under paragraph 77(1)(a), noise exposure assessments should:

- Be completed on passenger craft (e.g., helicopters, vessels) to determine the appropriate measures required as studies have shown that helicopter transportation is a significant source of noise exposure to individuals.
- Consider the requirements of ACGIH and how exposures to certain chemicals may also exacerbate the effects of noise on hearing loss. Where there may be exposure to noise and chemicals such as CO, hydrogen cyanide, lead, ethylbenzene, styrene, toluene and xylene, periodic audiometric testing is recommended and should be carefully reviewed with the compounding effect of noise in mind.

While initial noise exposure assessments are undertaken to assist in the selection of appropriate hearing protection, exposure monitoring should still be undertaken as this may vary depending on the amount of time working in a given area and the type of work tasks being performed.

Hearing Protection

- Hearing protection should be selected to ensure the following:
 - communication is not impaired;

- user comfort, including temperature and humidity; and
- compatibility with other PPE.
- The signs referred to in subparagraph 77(1)(c)(i) of the *OHS Regulations* should also specify if double hearing protection is required.
- Refer also to requirements for hearing protection in paragraph 46(h) of the *OHS Regulations*.

Periodic Surveys

Noise surveys should be done periodically (as noise generated may change over time) or because of a change in equipment or the operating environment. Additional guidance is provided in Annex D of CSA Z107.56, *Measurement of noise exposure*.

Audiometric Testing

With respect to subparagraph 77(1)(c)(ii) of the *OHS Regulations*, periodic audiometric testing provides for comparison of hearing loss over time and assists in the identification and implementation of measures to prevent significant long-term hearing loss. Audiometric testing should also consider the results of any initial or ongoing noise exposure assessments and periodic surveys to determine the effectiveness of measures. Operators and employers should develop a means to trend the results and make improvements to the program.

PART 16: VENTILATION (Sections 78 – 80)

Air quality

78 (1) Poor air quality is a prescribed risk for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and every employer must ensure that all contaminants in the air at each workplace under its control are kept below the applicable threshold limit values, including — if the workplace is a marine installation or structure — through the installation, use, maintenance and testing of appropriate ventilation systems and other engineering controls.

Local exhaust ventilation

(2) The ventilation systems must, if feasible, include local exhaust ventilation systems where necessary to prevent contaminants from entering an employee's breathing zone while the employee is working.

Ventilation system

79 Every employer must ensure, with respect to any ventilation system installed at a workplace under its control, that
(a) it is equipped with a device that provides a warning if the system is not working properly;

(b) all contaminants that it removes are exhausted clear of the area from which they are drawn and prevented from entering any work area or accommodations area;

(c) it and any humidification equipment that forms a part of it

(i) are constructed and maintained in a manner that minimizes the growth and dissemination through the system of micro-organisms, insects and mites, and

(ii) if feasible, are readily accessible for cleaning and inspection; and

(d) unless it is installed in an accommodations area, its minimum ventilation rate conforms to American Conference of Governmental Industrial Hygienists (ACGIH) standard Industrial Ventilation: A Manual of Recommended Practice for Design.

Internal combustion engine

80 If mobile equipment powered by an internal combustion engine is operated indoors or in an enclosed work area, the employer with control over the workplace at which it is operated must ensure that the engine is maintained in a manner that ensures conformity with the requirements of American Conference of Governmental Industrial Hygienists (ACGIH) standard Industrial Ventilation: A Manual of Recommended Practice for Design relating to vehicle exhaust ventilation.

General

- In addition to the requirements of this Part, refer to the ventilation system requirements in paragraph 23(c), paragraph 57(1)(d), subsection 65(4), paragraph 133(1)(h) and paragraph 157(1)(d) of the *OHS Regulations*. Ventilation must be selected based on the most effective means of preventing the accumulation of hazardous substances. This can be accomplished through local exhaust ventilation, dilution ventilation or a combination of both.
- For drilling, production and accommodations installations, refer to requirements for ventilation systems in section 114 of the *Framework Regulations*. As there may be areas where hazardous substances (e.g., diesel exhaust, volatile organic compounds) may accumulate because of poor air flow (e.g., drill floor, production area), it may be necessary to install additional permanent or temporary equipment to provide air movement and reduce worker exposure to below applicable TLVs.
- Requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to equipment associated with ventilation systems, particularly those requirements for competency, use, inspection, testing and maintenance.
- Pursuant to paragraph 91(1)(j) of the *OHS Regulations*, any temporary equipment used for ventilation must be rated for the hazardous area for which it is being used.
- If a specific system is not addressed by the standards, operators and employers may achieve compliance with subsection 78(1) by monitoring worker exposure and ensuring that the rates of airflow are adequate to keep levels below the applicable TLVs and LELs.

Standards for Ventilation Systems

Additional guidance on the design, operation and maintenance of ventilation systems is provided in the following:

- *ACGIH Industrial Ventilation: A Manual of Recommended Practice for Design.*
- *ACGIH Industrial Ventilation: A Manual of Recommended Practice for Operation and Maintenance.*
- ILO (e.g., MLC), IMO (e.g., SOLAS) and classification society rules.
- *NFPA 1 – Fire Code, NFPA 101 Life Safety Code and NFPA 30 Flammable and Combustible Liquids Code.*

Air Quality

Additional guidance on air quality is provided in the following:

- The ACGIH TLVs apply to an industrial environment and were not intended for an office or residential area. Therefore, the use of the recommended values for typical indoor air contaminants and components described in *ANSI/ASHRAE Standard 62.1 Ventilation for Acceptable Indoor Air Quality* may be a more accurate measure of air quality.
- Additional resources for interaction with other potential airborne contaminants (e.g., mold, asbestos) and indoor air quality are provided on the CCOHS website (www.ccohs.ca) and the NIOHS website (www.cdc.gov/niosh/).

PART 17: STRUCTURAL SAFETY (Sections 81 – 86)

Movement within workplace

81 Every employer must ensure, to the extent feasible, that all persons at each workplace under its control that is a marine installation or structure are able to move around the workplace, including through corridors, without bending, sidling or tripping and must ensure that any changes in floor elevation and ceiling height that pose a risk of injury and cannot be eliminated are clearly marked.

Doors

82 Every employer must ensure, at each workplace under its control that is a marine installation or structure, that

(a) any swinging door that opens onto a stairway does so over a floor or landing that extends under the full swing of the door; and

(b) the use of any double-action swinging door that does not permit persons approaching from one side of the door to be aware of persons on the other side is restricted to a single direction.

Guard-rails

83 Any guard-rail that is required under these Regulations must

(a) include

(i) a horizontal rail, cable or chain positioned not less than 90 cm and not more than 1.1 m above the working surface,

(ii) unless the guard-rail is located at the top of a fixed ladder, one or more additional horizontal rails, cables or chains positioned below the one referred to in subparagraph (i) so that the distance between the working surface and the nearest rail, cable or chain or between any two adjacent rails, cables or chains does not exceed half the distance between the working surface and the rail, cable or chain referred to in subparagraph (i), and

(iii) vertical supports spaced not more than 3 m apart at their centres;

(b) be capable of withstanding the greater of

(i) the maximum load that is likely to be imposed on it, and

(ii) a static load of not less than 890 N applied in any direction at any point on the rail, cable or chain referred to in subparagraph (a)(i); and

(c) be capable of withstanding the effects of fire.

Wall and floor openings and open edges

84 Every employer must ensure that, in any area on a marine installation or structure under its control to which a person might have access,

(a) every opening in a wall, partition or bulkhead that measures at least 75 cm high and 30 cm wide and from which there is a drop of more than 1.2 m, or that otherwise poses a hazard to any person, and every opening in a floor, platform or deck whose smallest dimension measures at least 30 cm is

(i) protected by a guard-rail, or

(ii) covered with material that is

(A) securely fastened to a supporting structural member of the marine installation or structure, and

(B) capable of withstanding all loads that are likely to be imposed on it; and

(b) every other open edge from which there is a drop of more than 1.2 m, other than on a helicopter deck, is protected by a guard-rail.

Open-top enclosures

85 (1) Every employer must ensure, at each workplace under its control, that, if an employee has access to the top of a bin, hopper, tank, vat, pit or similar enclosure with an opening at the top that is large enough for a person to fit through,

(a) the enclosure's opening is covered with a grating, screen or other covering; or

(b) there is a walkway over or adjacent to the opening that is not less than 50 cm wide and is fitted with guard-rails.

Support capability

(2) The grating, screen, covering or walkway must be capable of supporting the greater of

(a) the maximum load that is likely to be imposed on it, and

(b) a live load of 6 kN.

Access to inside

(3) If an employee is required to access the inside of an open-top enclosure from its top, the employer must ensure, if feasible, that there is a fixed ladder on the inside wall of the enclosure that permits the employee to safely enter and exit.

Structural openings

86 Every employer must ensure, before any opening is made in the structure of a marine installation or structure under its control, including in any floor or wall, that the locations of all pipes, cable and conduits in the area where the opening is to be made are clearly marked.

- All areas should be constructed such that work areas and passageways to and from work areas are free of slipping and tripping hazards, crush points, sharp edges or other similar defects that would pose a hazard to safety.
- With respect to fixed ladders, refer also to sections 98 and 101 of this Guideline.
- With respect to paragraph 84(b) of the *OHS Regulations*, attention should be given to any openings between the deck and entrances to life-saving appliances.
- With respect to section 86 of the *OHS Regulations*, this type of work may involve contact with hazardous energy as referred to in Part 27: Hazardous Energy of the *OHS Regulations* and as such, work must be done under a work permit according to Part 10: Work Permits of the *OHS Regulations* and in accordance with established management of change processes under Part 2: Occupational Health and Safety Management and Oversight of the *OHS Regulations*.
- All structural components of a marine installation or structure, including primary or secondary structures, guardrails, fixed ladders, etc., should be inspected on a periodic basis to verify that they continue to meet the requirements of the *OHS Regulations*.

PART 18: EQUIPMENT, MACHINES AND DEVICES

Section 87 – Requirements

87 (1) Every operator and employer must ensure, with respect to any equipment, machine or device that that operator or employer provides for use at a workplace, including any part of or accessory used with one of those things, that

- (a) only a competent person installs, assembles, uses, handles, stores, adjusts, modifies, maintains, repairs, inspects, tests, cleans or dismantles it;***
- (b) the activities referred to in paragraph (a) are carried out in accordance with its manufacturer's instructions and, if they are carried out outdoors, having regard to existing environmental conditions;***
- (c) the manufacturer's instructions respecting its operation and maintenance are made readily available to any person carrying out an activity referred to in paragraph (a);***
- (d) adequate space is provided around it to allow the activities referred to in paragraph (a) to be carried out safely;***
- (e) it is subject to***
 - (i) a brief visual inspection before each use by the person using it, and***
 - (ii) a thorough safety inspection at least once each year if***
 - (A) its purpose is to preserve or protect life,***
 - (B) its use would, in the absence of any hazard control measures, pose a risk to the health or safety of persons at the workplace, or***
 - (C) it is subject to degradation over time that could affect its safety;***
- (f) any person who maintains, repairs, modifies, tests or inspects it — other than by carrying out a brief visual inspection — makes and signs a record that clearly identifies the equipment, machine or device, describes the activity carried out and provides the person's name, the date of the activity and, if applicable, the person's observations regarding the safety of the equipment, machine or device;***
- (g) no person uses it in a manner that may compromise the health or safety of a person at the workplace, including by***
 - (i) maintaining, repairing or cleaning any powered equipment, machine or device while it is operational, or***
 - (ii) operating any equipment, machine or device that is equipped with a guard while the guard is not in its proper position; and***
- (h) no person intentionally tampers or interferes with it such that the health and safety of any person at the workplace could be compromised, including, unless done in accordance with these Regulations, by impairing or rendering inoperative a safety device or system that is used with it.***

Records

- (2) The operator or employer that provides the equipment, machine or device must***
 - (a) retain the records referred to in paragraph (1)(f), as well as a record setting out the date that they acquired the equipment, machine or device, until the day that is five years after the day on which the equipment, machine or device is taken out of service at the workplace; and***
 - (b) ensure that those records are made readily available to any person who uses, inspects, tests, maintains, repairs or modifies the equipment, machine or device.***

Exception – maintenance, repair or cleaning

(3) Despite subparagraph (1)(g)(i), a person is permitted to maintain, repair or clean a powered piece of equipment, machine or device while it is operational if

(a) its continued operation is essential to the maintenance, repair or cleaning; and

(b) if feasible, the energy source for any of its parts whose operation is not essential is controlled in accordance with Part 27 or those parts are equipped with guards.

Exception – use without guard

(4) Despite subparagraph (1)(g)(ii), a person is permitted to operate any equipment, machine or device without its guard in the proper position if necessary to

(a) permit the release of any part of a person that is trapped in the equipment, machine or device; or

(b) test, maintain, repair or clean the equipment, machine or device if

(i) its energy source is, if feasible, controlled in accordance with Part 27, and

(ii) the person who performs the work does not leave the equipment, machine or device until the guard has been replaced and verified to be functioning properly.

Alternative procedures

(5) Every employer must establish — and must instruct all employees to follow — procedures for minimizing the risk of injury if equipment, machines or devices at a workplace under the employer's control must be maintained, repaired, cleaned or tested while operational and without a guard in place and it is not feasible to control their energy source as described in paragraph (3)(b) or subparagraph (4)(b)(i).

General

- Equipment, machines and devices must be properly installed, stored, maintained and safe for their intended use⁶⁷.
- Any requirements for inspection, testing and maintenance of that particular equipment as referenced in the *OHS Regulations* or a standard referenced within those regulations must be considered.
- For clarity, this section applies to all equipment, machines or devices that have been prescribed by the *OHS Regulations*, that have been identified as a measure from risk assessments carried out in accordance with the *Accord Acts*, or that are onboard and pose a hazard to health or safety.
- For internal combustion engines installed on equipment, refer to the requirements and associated guidance for emissions and ventilation as provided in Part 16: Ventilation and Part 31: Hazardous Substances of the *OHS Regulations*.

⁶⁷ C-NLAAIA 205.013(g) and 205.019(1)(m); CNSOPRAIA 210.013(g) and 210.019(1)(m)

Competency

- Refer to requirements for instruction, training, qualifications and competency in the *Accord Acts*⁶⁸.
- With respect to paragraph 87(1)(a) of the *OHS Regulations*, refer also to any requirement for competency referenced in the *OHS Regulations* or a standard incorporated by reference within those regulations for any employees or other individuals who are performing activities.

Thorough Safety Inspection

With respect to subparagraph 87(1)(e)(ii) of the *OHS Regulations*, the thorough safety inspection is interpreted to be an inspection carried out by a competent person which verifies that pertinent safety features and equipment are in place and operable. It is not intended to be a comprehensive inspection, unless otherwise recommended by the manufacturer or by a code or standard that has been incorporated by reference or adopted.

Section 88 – Removal from Service

88 Every employer must ensure that any equipment, machine or device at a workplace under its control that it has reason to doubt is safe for use is taken out of service and identified in a manner that ensures it is not inadvertently returned to service until a competent person determines it to be safe for use.

No guidance required at this time.

Section 89 – Hair, Clothing and Accessories

89 Every employer must ensure that all persons at each workplace under its control not wear long hair, loose-fitting clothing, dangling accessories, jewellery or other similar items unless those items are tied, covered or otherwise secured as necessary to prevent them from coming into contact with equipment or machines or otherwise presenting a risk to health or safety.

No guidance required at this time.

⁶⁸ C-NLAAIA 205.013(k), 205.015(2)(d), 205.019(1)(j), 205.019(2) and 205.02(2)(b); CNSOPRAIA 210.013(k), 210.015(2)(d), 210.019(1)(j), 210.019(2) and 210.02(2)(b)

Section 90 – Pedestrian Passage

90 Every employer must ensure, at each workplace under its control, that a path for pedestrian use is clearly identified with floor markings or physical means through any area in which mobile equipment or other equipment that presents a risk of injury to persons passing through is being used.

No guidance required at this time.

Section 91 – Standards

91 (1) Every employer must ensure, in respect of each workplace under its control, that

- (a) all equipment and machines conform to and are used in accordance with all applicable provisions of CSA Group standard Z432, Safeguarding of machinery;**
- (b) the starting and stopping controls of all equipment and machines are located within easy reach of the person operating the equipment or machine;**
- (c) all access doors on equipment or machines that expose moving parts when opened are, if feasible, equipped with interlocks that**
 - (i) prevent the access door from opening while the moving parts are in motion, or**
 - (ii) immediately disconnect the power from the driving mechanism when the door is opened, causing the moving parts to stop and preventing them from restarting until the door is closed;**
- (d) all controls on equipment, machines and devices are**
 - (i) clearly marked with their functions in a manner and location that ensures the markings remain visible to the person operating the equipment, machine or device, and**
 - (ii) designed, positioned or shielded to prevent inadvertent activation;**
- (e) all insulated equipment and devices are protected against damage to their insulating material;**
- (f) all portable hand-held motor-operated electric tools conform to CSA Group standard C22.2 No. 60745, Hand-Held Motor-Operated Electric Tools – Safety or CSA Group standard C22.2 No. 62841, Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety, as applicable;**
- (g) all powder-actuated fastening tools, fasteners and powder loads conform to and are used in accordance with ANSI/American Society of Safety Professionals (ASSP) standard A10.3, Safety Requirements for Powder-Actuated Fastening Systems, except with respect to the required eye protection, which must instead conform to paragraph 46(f);**
- (h) all power presses conform to and are used in accordance with CSA Group standard Z142, Code for power press operation: Health, safety, and safeguarding requirements;**
- (i) all electric tools that plug into an electrical receptacle are grounded, unless they**
 - (i) have a protective system of double insulation, or**

- (ii) are used in a location where reliable grounding cannot be obtained and are supplied from a double-insulated portable ground fault circuit interrupter of the class A type that conforms to CSA Group standard C22.2 No. 144, Ground Fault Circuit Interrupters, on a 125-volt or 15-, 20- or 30-ampere circuit;*
- (j) all equipment, machines and devices that are a potential source of ignition are, if they are used in an area referred to in subsection 26(2), rated by their manufacturer as appropriate for use in such an area and used only with control measures in place to minimize the risk of fire or explosion;*
- (k) all hoses that contain a substance under pressure and that are connected to equipment or to a machine or a device are equipped with restraining devices as necessary to prevent the hoses' hazardous movement, including in the event of accidental disconnection;*
- (l) all abrasive blasting or high-pressure washing machines have operating controls that*
- (i) are located near the nozzle,*
 - (ii) are hand-operated, and*
 - (iii) require continuous pressure by the person operating them to permit the flow of material;*
- (m) all abrasive wheels are*
- (i) inspected by a competent person and determined to be free from defects, cracks or other problems before being installed,*
 - (ii) mounted between flanges,*
 - (iii) used only on machines that are equipped with machine guards, including, in the case of a bench grinder, a wheel guard and a work rest or other device that, without making contact with the abrasive wheel, prevents the work piece from jamming between the abrasive wheel and the wheel guard, and*
 - (iv) used only on machines whose number of revolutions per minute does not exceed the maximum speed rating of the abrasive wheel;*
- (n) all equipment and machines whose operation may cause the ejection of material that may pose a hazard to a person are, if feasible, equipped with a means of safely containing the material;*
- (o) all equipment and machines that have exposed moving, electrically charged or hot parts or that process, transport or handle material that constitutes a hazard are, if feasible, equipped with*
- (i) a guard that is not readily removable without the use of tools and that physically prevents persons from coming into contact with the parts or material or from being exposed to the hazard they present, or*
 - (ii) if rendering the equipment or machine inoperative would minimize the hazard, a device that renders the equipment or machine inoperative if a person or their clothing comes into contact with or comes too close to a part of the equipment or machine that is likely to cause injury;*
- (p) all wire rope in tension, other than on a crane or hoist, is protected by a guard, if feasible; and*
- (q) if the workplace is a marine installation or structure, all temporary or portable heating equipment that is used in an enclosed area*

***(i) provides complete combustion of the fuel used in it or is equipped with an exhaust system that discharges the products of combustion outside the enclosed area, and
(ii) is used only while carbon monoxide levels in the enclosed area are being continuously monitored.***

Alternative safeguards

(2) If it is not feasible for equipment or a machine to be equipped as described in paragraph (1)(c), (n) or (o), or for wire rope in tension to be protected as described in paragraph (1)(p), the employer must ensure that another guard, safety device or awareness barrier is put in place to protect against the hazard.

- With respect to paragraph 91(1)(a) of the *OHS Regulations*, *CSA Z432 Safeguarding of Machinery* includes guidance for the identification of all hazards, the assessment of risk and the identification of risk controls associated with machinery and equipment. It also references other international standards related to the design of equipment.
- With respect to paragraph 91(1)(f) of the *OHS Regulations*, portable tools that meet UL/IEC 60745 or UL/IEC 62841 are considered to be equivalent to the CSA standards noted unless there are Canadian modifications to be considered.
- For drilling, production and accommodations installations, refer also to requirements for mechanical equipment in section 136 of the *Framework Regulations*.

Section 92 – Fuelling

92 (1) Every employer must ensure that no equipment or machine at a workplace under its control is fuelled, and no fuel is transferred between containers,

(a) in the following locations:

- (i) a place where the vapours from the fuel are not readily dissipated, or***
- (ii) the hold of a vessel or any other enclosed space at the workplace; or***

(b) in the following circumstances:

- (i) subject to subparagraph (ii), while there is any source of ignition in the vicinity that presents a risk of fire or explosion, or***
- (ii) in the case of equipment, while the equipment's engine is running, unless it is designed to be fuelled in that manner.***

Exception

(2) Despite subparagraph (1)(a)(ii), equipment may be fuelled in the hold of a vessel or another enclosed space if

(a) an employee who has a suitable fire extinguisher ready for use is in the hold or space;

- (b) no one other than the employee referred to in paragraph (a) and those employees engaged in the fuelling are in the hold or space;***
- (c) the fuelling is carried out by transferring fuel directly into the equipment's fuel tank or, in the case of liquefied gas, by replacing spent cylinders;***
- (d) no more fuel than is necessary to fill the equipment's fuel tank – or, in the case of liquefied gas, no more than the number of cylinders in need of replacement – is taken into the hold or space; and***
- (e) atmospheric gas levels in the space are continuously monitored.***

Procedures

- (3) Every employer must develop procedures to be followed respecting the fuelling of equipment to protect the health and safety of employees.***
-

These provisions do not apply to fixed piping systems that have been purposely designed for fuelling in accordance with industry recognized standards.

PART 19: ELEVATORS AND PERSONNEL LIFTS (Sections 93 – 94)

Standards

93 (1) Every employer must ensure that each elevator at a workplace under its control is designed, maintained, tested, inspected and used in accordance with ASME standard A17.1/CSA Group standard B44, Safety code for elevators and escalators, and that each personnel lift at a workplace under its control is designed, installed, maintained, tested, inspected and used in accordance with CSA Group standard CAN/CSA-B311, Safety Code for Manlifts.

Inspection and testing

- (2) The employer must ensure that every elevator and personnel lift is inspected and tested***
 - (a) before the elevator or personnel lift is placed in or returned to service;***
 - (b) after any alteration to the elevator or personnel lift; and***
 - (c) at least once a year.***

Inspection validity

- (3) An inspection ceases to be valid one year after the day on which it is carried out.***

Record

(4) The employer must ensure that the person who inspects an elevator or personnel lift includes in the record referred to in paragraph 87(1)(f) the date on which the inspection ceases to be valid.

Elevator documentation

94 Every employer must ensure that a document is posted in each elevator at a workplace under its control that identifies the elevator and its location, indicates its capacity and sets out the date on which its most recent inspection ceases to be valid.

General

- With respect to *ASME A17.1/CSA B44 Safety code for elevators and escalators*, the operator and employer must ensure new elevators meet the requirements of this code. Existing elevators must meet the applicable requirements of this code.
- Equipment must be safe for their intended use⁶⁹. On floating marine installations or structures (including fixed installations while being transported and MODUs), equipment must be capable of safe operation within defined limits in the physical and environmental conditions experienced in the respective *Offshore Area*. As such, existing elevators should also meet the requirements for marine elevators in *ASME A17.1/CSA B44 Safety code for elevators and escalators*.
- Requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to equipment associated with elevators and personnel lifts, particularly those requirements for competency, use, inspection, testing and maintenance.

Design, Installation and Maintenance of Elevators

Additional guidance on the design, installation, maintenance and inspection of any elevating device can also be found in the following:

- *ABS Guide for Certification of Lifting Appliances*
- *DNV Rules for Certification of Lifts in Ships, Mobile Offshore Units and Offshore Installations*
- *LR Code for Lifting Appliances in a Marine Environment*
- *EN 81 Safety Rules for the Construction and Installation of Lifts*

If the elevator or personnel lift has been designed and installed in accordance with classification society rules, the marine installation or structure should maintain the associated class notation or certificate to demonstrate that the classification society has certified the elevators.

⁶⁹ C-NLAAIA 205.013(g), 205.019(1)(m); CNSOPRAIA 210.013(g), 210.019(1)(m)

Use and Operation of Elevators

As classification society rules do not address the use and operation of elevators, including qualifications of competent persons that undertake inspection, testing and maintenance activities and the certification of elevators by an authorized inspection agency, the use and operation of elevators should meet or exceed the requirements as described in *ASME A17.1/CSA B44 Safety code for elevators and escalators* and its associated normative references.

PART 20: LADDERS, STAIRS AND RAMPS

Section 95 - Application

95 This Part applies in respect of a workplace that is a marine installation or structure.

No guidance required at this time.

Section 96 – Ship’s Ladder

96 For the purposes of this Part, any reference to stairs includes a permanently installed structure, commonly known as a ship’s ladder, that has a steep pitch, rigid treads supported by rigid side rails and a handrail on each side.

No guidance required at this time.

Section 97 – Requirement to Install

97 If an employee in the course of routine work is required to move between levels that are more than 45 cm apart, the employer with control over the workplace must ensure that a fixed ladder, fixed stairs or a fixed ramp is installed between the levels.

No guidance required at this time.

Section 98 – Stairs, Ramps and Fixed Ladders

98 (1) Every employer must ensure that all stairs, ramps and fixed ladders that are installed at each workplace under its control, as well as all cages, landings and platforms used with the fixed ladders, are designed and maintained to support any load that is likely to be imposed on them and to safely accommodate all persons who are likely to use them and all equipment that is likely to pass over them.

Hazard protection

(2) If stairs, a ramp or a fixed ladder end in direct proximity to anything that would pose a risk of injury to a person were they to inadvertently come into contact with it, the employer must ensure that a barricade is installed to protect persons using the stairs, ramp or ladder from that hazard.

- Refer to Part 17: Structural Safety of the *OHS Regulations* for associated guidance on the inspection of and repairs to structural components.
- Additional guidance for the design of stairs is provided in the *National Building Code of Canada* (for new build installations or replacements) and classification society rules.

Section 99 – Temporary Stairs

99 Every employer must ensure that all temporary stairs installed at a workplace under its control are securely fastened in place and have

(a) uniform steps in the same flight;

(b) a slope of not more than 1.2 to 1; and

(c) a hand rail not less than 90 cm and not more than 1.1 m above the stair level

(i) on at least one side, and every open side, if the stairs are not more than 1.12 m wide, or

(ii) on both sides, if the stairs are more than 1.12 m wide.

No guidance required at this time.

Section 100 – Ramps

100 Every employer must ensure that every ramp installed at a workplace under its control is
(a) securely fastened in place;

- (b) braced if necessary to ensure its stability; and***
 - (c) equipped with cleats or surfaced in a manner that provides a safe footing for users.***
-

No guidance required at this time.

Section 101 – Fixed Ladders

101 (1) Every employer must ensure that any fixed ladder installed at a workplace under its control, other than one installed as part of a scaffold,

(a) is installed with its underside angled not less than 75 degrees and not more than 90 degrees from the ground;

(b) is securely held in place at the top and bottom and at intervals of not more than 3 m;

(c) has rungs that are at least 15 cm from the wall, at uniformly spaced intervals of not more than 30 cm, and do not impede any employee from safely exiting the ladder onto a platform or landing;

(d) has side rails that extend not less than 90 cm above each landing or platform;

(e) is not coated with material that may hide flaws affecting its integrity;

(f) if it is more than 6 m in length, is fitted, if feasible, with a protective cage for the portion of its length that is more than 2.5 m above its bottom; and

(g) if it is more than 9 m in length, is equipped with landings or platforms, at intervals of no more than 6 m, that are

(i) at least 0.36 m² in area, and

(ii) fitted at their outer edges with a guard-rail and toe board.

Use

(2) While ascending or descending a fixed ladder at a workplace, every employee must

(a) face the ladder;

(b) maintain a three-point contact with the ladder; and

(c) carry any tools, equipment or materials in a pouch or holster or in another secure manner.

Prohibition

(3) An employee must not use a metal or wire-bound fixed ladder if there is a risk of it coming into contact with an energized electrical conductor or circuit part or with energized electrical equipment.

- Where ladders with safety cages are installed, consideration should be given to extending the cage structure or raising the guardrail to minimize the likelihood of a person falling.

- Notwithstanding the requirement to install a protective cage under paragraph 101(1)(f) of the *OHS Regulations*, a protective cage is not considered fall protection. On fixed ladders more than 6 m in length, a fall-arrest system must therefore be provided as required by paragraph 109(3)(a) of the *OHS Regulations*.
- If ascending or descending a fixed ladder is difficult because of the nature of the activity being performed, the amount of equipment to be carried or worn (e.g., bulky PPE) or the physical and environmental conditions (e.g., wind, freezing rain), consideration should be given to using a fall-arrest system where not already required by the *OHS Regulations*.
- Guidance on the design of fixed ladders is also provided in *ANSI A14.3 American National Standard for Ladders - Fixed -Safety Requirements*.

Section 102 – Portable Ladders

102 (1) Every employer must ensure that any portable ladder used at a workplace under its control

(a) conforms to CSA Group standard Z11, Portable ladders;

(b) has a minimum load rating of 113.4 kg;

(c) if used, other than as part of a scaffold system, on a marine installation or structure that is used for the drilling for or production of petroleum products, is made of a non-combustible material; and

(d) is not coated with material that may hide flaws affecting its integrity.

Use

(2) An employee who uses a portable ladder at a workplace must do so in accordance with CSA Group standard Z11, Portable ladders, and must ensure that, while the ladder is in use,

(a) it is placed on a firm and stable footing and positioned so that it is not necessary to use the underside;

(b) it is secured in such a manner that it cannot be dislodged accidentally from its position; and

(c) unless it is a self-supporting ladder, the upper portion of its side rails rests on a bearing surface capable of safely withstanding the load imposed on it.

Prohibitions

(3) An employee must not

(a) position a portable ladder in an elevator shaft or hoistway when that space is being used for hoisting;

(b) position a portable ladder near moving equipment that is under a load;

(c) use a portable ladder in a manner that may compromise its stability or the stability of any person on it; or

(d) use a metal or wire-bound portable ladder if there is a risk of it coming into contact with an energized electrical conductor or circuit part or with energized electrical equipment.

- Light or medium duty ladders listed in *CSA Z11 Portable ladders* are not permitted for use in any part of the workplace, including the accommodations area, as these ladders would not meet paragraph 102(1)(b) of the *OHS Regulations*.
- As part of the risk assessment before using a ladder, consideration should be given to the following:
 - The weight of the person, in addition to all PPE (e.g., coveralls, footwear) and other equipment required to be worn or carried, to determine if the ladder can support the load safely without affecting stability of the ladder.
 - The effect of motion on its use onboard a floating marine installation or structure.

PART 21: SCAFFOLDING AND PLATFORMS

Section 103 – Definitions

103 In this Part, elevating work platform means a type of integral chassis aerial platform that has an adjustable position platform that is supported from ground level by an articulating or telescoping boom or by a vertically oriented, telescoping or elevating mast.

No guidance required at this time.

Section 104 – Use - General

104 (1) Every employer must ensure that no employee uses a scaffold, suspended work platform or elevating work platform at a workplace under the employer's control unless
(a) the employer has authorized its use;
(b) the employee has been trained and instructed in its safe and proper use; and
(c) it has been inspected and certified by a competent person as being fit for the use to which the employee intends to put it.

Hazardous conditions

(2) The employer must ensure that no employee uses a scaffold, suspended work platform or elevating work platform in environmental conditions that are likely to increase the risk to the health or safety of the employee unless its use in those conditions is necessary to remove a hazard or rescue a person.

Refer to sections 106 and 107 of this Guideline for scaffolds and elevating work platforms, respectively.

Section 105 – Prevention of Contact

105 The employer must ensure that, if there is a risk of a person or equipment coming into contact with a scaffold, suspended work platform or elevating work platform in a manner that would pose a hazard, a barricade is installed or, if that is not feasible, another means of preventing the contact is provided.

This is intended to both protect individuals working at an elevated work location (e.g., from contact with forklift) and individuals working around that area (e.g., from contact with scaffolding).

Section 106 – Scaffolds

106 (1) Every employer must ensure, with respect to any scaffold used at a workplace under its control, that

(a) its configuration at the workplace is designed by a competent person;

(b) it is erected, used, inspected, dismantled and stored in accordance with CSA Group standard CAN/CSA-Z797, Code of practice for access scaffold;

(c) if used to support a temporary floor or subjected to loads that could cause it to overturn, it is erected and used in accordance with the written instructions approved by a professional engineer;

(d) either it is capable of supporting at least four times the load that is likely to be imposed on it or it has been approved by a professional engineer and consists of components that have been manufactured in accordance with a quality management system;

(e) its footings and supports are capable of supporting all static and dynamic loads that are likely to be imposed on them;

(f) to the extent feasible, it uses only manufactured platforms;

(g) its platforms or planks are adequately secured and installed in a manner that avoids gaps and overlapping;

(h) all of its wooden components are treated with a transparent fire retardant coating and are stored and maintained so that their integrity and fire retardant properties are preserved;

(i) all of its components are compatible with each other;

(j) if it is a continuous run scaffold or a double-pole tube and coupler scaffold, it has internal horizontal cross-bracing installed in the bay immediately adjacent to and at the level of a

building tie, unless equivalent bracing is achieved using manufactured scaffold planks secured by end hooks to provide a fully decked work platform at that level; and
(k) any vertical ladder more than 9 m in length that is used with it has a landing or platform at least every 6 m.

Ladder jack scaffold

(2) Every employer must ensure that no ladder jack scaffold is used at a workplace under its control.

Hazard Identification and Risk Assessment

- Pursuant to section 69 of the *OHS Regulations*, scaffolding must be installed such that it provides safe access and escape and does not
 - block or hinder access to emergency response equipment, escape routes or evacuation routes; or
 - impair the operation of fire and gas detection systems or manual or fixed firefighting equipment.
- Section 4.1 of the *CAN/CSA-Z797 Code of practice for access scaffold* does not consider marine hazards or hazards associated with operating in the offshore petroleum industry. Therefore, a risk assessment must be performed⁷⁰ and should consider:
 - any potentially hazardous areas where hydrocarbons or other significant amounts of flammable substance are present and can accumulate;
 - impairment to natural ventilation or explosion relief paths in areas designed to reduce explosion loads;
 - areas where toxic substances can accumulate;
 - the potential for thermite sparking in potentially hazardous areas (from aluminum alloys and rusted steel);
 - heave, pitch and roll of the platform or vessel on which scaffolding is installed;
 - wind loadings on the platform or vessel on which scaffolding is installed;
 - any other environmental condition that may adversely affect the construction and use of the scaffold; and
 - the location of scaffolding in relation to hot surfaces or hot exhaust.
- Large amounts of combustible material (e.g., large amounts of wooden scaffolding planks) should not be placed in areas that may contain a flammable environment or in areas that are not adequately protected by an automatic fire detection and protection system. Consideration should be given to using only non-sparking metal scaffolding within process operating areas.

Use of Scaffolding

- Scaffold structures in exposed locations will age and deteriorate faster than those that are situated in sheltered locations. Scaffolding left exposed to a marine environment, including

⁷⁰ C-NLAAIA 205.009, 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009, 210.015(2)(a) and 210.02(2)(a)

aluminum, can corrode quickly. Alternatives to scaffolding should be considered for long-term applications.

- If scaffolding members are used for other purposes (e.g., guard rails, equipment supports), these applications should be considered temporary and must meet the requirements of the *OHS Regulations* that pertain to that purpose.

Written Instructions

With respect to paragraph 106(1)(c) of the *OHS Regulations*, the professional engineer should be knowledgeable in marine and offshore petroleum operations, as applicable, to the type of marine installation or structure on which the scaffolding is being installed and should be aware of the hazards and risks as noted above. Refer to the definition of “professional engineer” in section 1 of the *OHS Regulations*.

Certification, Inspection and Maintenance

Equipment, machines and devices must be properly installed, stored, maintained and safe for their intended use⁷¹. The following should be considered:

- A means of identifying, labelling, tracking and inspecting scaffolding (and any other authorized installed scaffolding members) should be in place and any restrictions with respect to use of the scaffolding should be identified on labels that are attached to the scaffolding. Any critical fittings should be monitored and changed out as soon as any deterioration is noted and scaffolding should be dismantled and re-erected if considered necessary by a competent scaffolder.
- Requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to scaffolds, particularly those requirements for competency, use, inspection, testing and maintenance. Operations and maintenance instructions must be developed considering the manufacturer’s instructions and any hazards.

Section 107 – Elevating Work Platforms

107 Every employer must ensure, with respect to any elevating work platform at a workplace under its control, that

- (a) its rated capacity is marked on it in a location that is clearly visible to any person using it;***
- (b) it is equipped with controls of a continuous pressure type that return to the neutral or stop position when released;***
- (c) it is equipped with an emergency stop device that is red in colour and located within easy reach of the person operating it;***
- (d) if its lifting mechanism creates a shear hazard to employees, that mechanism is adequately guarded or identified with signs, decals or similar markings warning of the hazard; and***

⁷¹ C-NLAAIA 205.013(g) and 205.019(1)(m); CNSOPRAIA 210.013(g) and 210.019(1)(m)

(e) if it is self-propelled or mobile, it is used only with the approval of the Chief Safety Officer.

General

- Most standards for elevating work platforms were developed for onshore construction industry applications, and do not consider operation in the offshore petroleum or marine industry. When a fixed or mobile elevating work platform is used, the following should be considered:
 - Unless operated indoors, the minimum design temperature and maximum wind speed should be selected based on the expected physical and environmental conditions it will be operating in.
 - The effects of dynamic loading and stability need to be considered using the maximum loads and extension under which it is expected to operate. Additional measures may need to be applied, including sea-fastening, etc.
 - It should not be used for work on or near electrically energized equipment unless it is designed for that activity.
 - For a marine installation or structure engaged in production or drilling activities, internal combustion engines, electrical equipment or other components that may pose a risk of ignition in a hazardous atmospheric condition should be rated for operation in hazardous area(s).
 - Internal combustion engines installed on this equipment may require monitoring of CO levels and additional ventilation.
 - In addition to meeting recognized industry practices, elevating work platforms must be safe for their intended use pursuant to the *Accord Acts*⁷². They should also meet classification society rules and be certified by the classification society, as applicable.
- Refer also to requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to elevating work platforms, particularly those requirements for competency, use, inspection, testing and maintenance.

Mobile Elevating Work Platforms

The following standards can be used for mobile elevating work platforms; however, it should be noted a mobile elevating work platform meeting these standards does not consider the physical and environmental conditions associated with operating in a marine environment and other factors. Mobile elevating work platforms meeting these standards should not be used on floating marine installations or structures unless additional analysis is undertaken. The standards are as follows:

- *CAN/CSA-B354.6 Mobile elevating work platforms – Design, calculations, safety requirements and test methods;*
- *CAN/CSA B354.7 Mobile elevating work platforms – safety principles, inspection, maintenance and operation;* and

⁷² C-NLAAIA 205.013(g), 205.019(1)(m); CNSOPRAIA 210.013(g), 210.019(1)(m)

- *CAN/CSA B354.8 Mobile elevating work platforms – operator (driver) training*

PART 22: FALL PROTECTION AND ROPE ACCESS

Section 108 – Risk of Falling

108 *The risk of a person falling from any of the following locations is a prescribed risk for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act:*

(a) 3 m or more above the nearest safe surface or above water;

(b) any distance above a surface or thing that could cause injury or illness to the person; or

(c) a portable ladder, if

(i) there are high wind or wave conditions,

(ii) the person is performing a task that does not permit them to maintain their centre of gravity between the ladder's side rails,

(iii) the person is performing a task that is not a light duty task, or

(iv) the person is performing a task for more than a short duration at any one location.

No guidance required at this time.

Section 109 – Means of Fall Protection

109 (1) *Every employer must ensure that whichever of the following means of fall protection is most appropriate in the circumstances is provided whenever a person at a workplace under its control is in a location referred to in section 108:*

(a) a guard-rail;

(b) temporary flooring;

(c) a travel restraint system that conforms to and has been selected in accordance with — and every component of which conforms to and has been selected in accordance with — all applicable CSA Group standards in the Z259 series;

(d) a fall-arrest system that conforms to and has been selected in accordance with — and every component of which conforms to and has been selected in accordance with — all applicable CSA Group standards in the Z259 series; or

(e) a safety net that, unless it is to be used in or around the helicopter landing deck area of a marine installation or structure, conforms to ANSI/American Society of Safety Professionals (ASSP) standard A10.11, Safety Requirements for Personnel Nets and has been installed, inspected and tested in accordance with that standard.

Occupational health and safety program

(2) Every occupational health and safety program must

- (a) set out factors, including efficacy and feasibility, to be considered by the employer in determining the most appropriate means of fall protection for the purpose of subsection (1);**
- (b) address the assembly, maintenance, inspection, use and disassembly, as the case may be, of all means of fall protection provided and their components, including by establishing a schedule for their inspection; and**
- (c) if fall-arrest systems are to be provided at the workplace, address the risks associated with the potential for swing as a result of anchorage placement when a fall-arrest system is being used.**

Fall-arrest system required

(3) Despite subsection (1) and paragraph (2)(a), the employer must ensure that a fall-arrest system described in paragraph (1)(d) is provided to every person

- (a) who is on a fixed ladder more than 6 m in length;**
- (b) who is on an elevating work platform, as defined in section 103; or**
- (c) who uses a work-positioning system.**

Use

(4) The employer must ensure that any means of protection referred to in paragraphs (1)(c) to (e) that it provides is used in accordance with the standards referred to in those paragraphs and, in the case of a fall-arrest system provided to a person referred to in paragraph (3)(b), is secured to an anchorage point that is approved by the platform's manufacturer or a professional engineer.

Safety net

(5) The employer must ensure that any safety net provided

- (a) is positioned as close as feasible to, and in any case no further than 4.6 m below, the area from which there is a risk of a fall;**
- (b) extends at least 2.4 m beyond that area on all sides or, if the area is a gangway, at least 1.8 m beyond both sides;**
- (c) is positioned and maintained so that its maximum deflection does not permit any portion of a person who falls into it to come into contact with any other surface;**
- (d) is kept free of debris, obstructions or intervening objects that could be struck by a person falling into it; and**
- (e) is, if connected to another safety net, connected using splice joints that are at least as strong as the weakest of the nets.**

Components

(6) The employer must ensure that

- (a) all anchorages used in a means of fall protection are capable of withstanding the following forces in any direction in which the force may be applied:**
- (i) 22 kN, in the case of non-engineered anchorages, and**
 - (ii) twice the maximum arresting force anticipated, in the case of engineered anchorages;**
- (b) any self-retracting device used in a means of fall protection is**
- (i) anchored above the user's head, unless the manufacturer's instructions allow for a different anchorage location, and**
 - (ii) used in a manner that**
 - (A) minimizes the hazards of swinging, and**
 - (B) limits the distance that a user who fell would drop to less than 1.2 m; and**
- (c) any lanyard used in a fall-arrest system is equipped with an energy absorber, unless**
- (i) the lifeline used is self-retracting, or**
 - (ii) the fall-arrest system is designed by a competent person to**
 - (A) limit the free fall to less than 1.2 m and the arresting force to less than 4 kN, and**
 - (B) prevent the user from coming into contact with any unsafe surface.**
-

- Sections 44 – 45 and 49 of the *OHS Regulations* contain general requirements which apply to all PPE. Refer also to the definition of “personal protective equipment” and requirements for PPE in the *Accord Acts*⁷³.
- All equipment must be safe for its intended use⁷⁴ (e.g., suitable for the physical and environmental conditions (e.g., cold temperatures) and consider any dynamic loads that may be experienced during its use).
- With respect to paragraphs 109(1)(c) and (d) of the *OHS Regulations*, requirements for the selection, use and application of active fall protection systems, including fall hazard assessments, general safety requirements and rescue plan requirements are provided in *CSA Z259.17 – Selection and use of active fall-protection equipment and systems*.
- With respect to subsection 109(4) of the *OHS Regulations*, refer also to the definition of “professional engineer” in section 1 of the *OHS Regulations*.
- Requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to fall protection equipment, particularly those requirements for competency, use, inspection, testing and maintenance.

Section 110 – Rope Access

110 (1) Despite subsections 109(1), (3) and (4), every employer must ensure that any rope access carried out at a workplace under its control, or by any of its employees at a workplace not under

⁷³ C-NLAAIA 205.013(i) and (j), 205.019(1)(i), 205.027(b) and (c) and 205.043(5)(c); CNSOPRAIA 210.013(i) and (j), 210.019(1)(i), 210.027(b) and (c) and 210.043(5)(c)

⁷⁴ C-NLAAIA 205.013(g), 205.019(1)(m); CNSOPRAIA 210.013(g), 210.019(1)(m)

its control, conforms, subject to subsection (3), to the IRATA International code of practice for industrial rope access, published by the Industrial Rope Access Trade Association.

Interpretation of Code

(2) For the purpose of subsection (1), all recommendations in the code are mandatory, unless compliance with the measure is not feasible, in which case the employer must demonstrate to the Chief Safety Officer, before any non-conforming rope access is carried out, that other controls are in place to mitigate or eliminate the risk that the measure is intended to address.

Alternative Standards

(3) A requirement in the code to conform to a standard in respect of equipment is satisfied by instead conforming, as applicable, to

(a) CSA Group standard Z259.1, Body belts and saddles for work positioning and travel restraint;

(b) CSA Group standard Z259.10, Full body harnesses;

(c) CSA Group standard Z259.11, Personal energy absorbers and lanyards;

(d) CSA Group standard Z259.12, Connecting components for personal fall-arrest systems (PFAS);

(e) European Committee for Standardization (CEN) standard EN 567, Mountaineering equipment – Rope clamps – Safety requirements and test methods; or

(f) European Committee for Standardization (CEN) standard EN 353-2, Personal protective equipment against falls from a height – Part 2: Guided type fall arresters including a flexible anchor line.

Headwear

(4) The personal protective equipment that every employer is required to provide to any of its employees, and to any other individual at a workplace under its control, who is engaged in rope access includes headwear that conforms to

(a) CSA Group standard Z94.1, Industrial protective headwear – Performance, selection, care, and use;

(b) ANSI/International Safety Equipment Association (ISEA) standard Z89.1, American National Standard for Industrial Head Protection; or

(c) European Committee for Standardization (CEN) standard EN 12492, Mountaineering equipment – Helmets for mountaineers – Safety requirements and test methods.

Definition of Rope Access

(5) In this section, rope access means the use of ropes, in combination with other devices, to get to or from a work area or to maintain one's position in a work area.

General

- Sections 44 – 45 and 49 of the *OHS Regulations* contain general requirements which apply to all PPE. Refer also to the definition of “personal protective equipment” and requirements for PPE in the *Accord Acts*⁷⁵.
- Requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to rope access equipment, particularly those requirements for competency, use, inspection, testing and maintenance.

Safe for Intended Use

Pursuant to the *Accord Acts*, all equipment must be safe for its intended use⁷⁶ (e.g., be suitable for the physical and environmental conditions like cold temperatures, for example, in which it is to be installed and used).

Hazard Identification and Risk Assessment

While the IRATA standards reference several typical OHS hazards, the hazard identification and risk assessment should also consider the hazards associated with working on a moving offshore platform (e.g., contact, seasickness), the risks of working in hazardous area rated locations and the increased risk of ignition posed by activities in those areas.

Training and Competency

- The training and competency described in the IRATA standards applies only to the rope access activities required to access the physical work location. Rope access technicians should not be required to do any activity that they have not been qualified to perform (e.g., electrical, welding, non-destructive examination). A competent person should be provided with a safe means of access to do those activities.
- Guidance for training of rope access technicians is provided in the COP TQOP.

Notes on the IRATA Standard

Part 4 of the IRATA standards reference relevant national legislation for the UK. In this regard, it is expected that planning and management of rope access activities consider the requirements of the *Accord Acts* and the associated regulations.

⁷⁵ C-NLAAIA 205.013(i) and (j), 205.019(1)(i), 205.027(b) and (c) and 205.043(5)(c); CNSOPRAIA 210.013(i) and (j), 210.019(1)(i), 210.027(b) and (c) and 210.043(5)(c)

⁷⁶ C-NLAAIA 205.013(g), 205.019(1)(m); CNSOPRAIA 210.013(g), 210.019(1)(m)

Section 111 – Work Permit

111 A work permit is required for any activity at a workplace that requires the use of a fall-arrest system or travel restraint system.

Refer to requirements for work permits in Part 10: Work Permit of this Guideline. A work permit is not required for the use of ladder safety systems.

Section 112 – Instruction and Training

112 (1) The instruction and training that every employer must provide to its employees and other individuals at a workplace under its control who are involved in activities requiring the use of a fall-arrest system or travel restraint system includes

(a) an overview of the provisions of all applicable health and safety legislation and standards that relate to fall protection, including those relating to the roles and responsibilities of workplace parties;

(b) training on the identification of fall hazards;

(c) an overview of the hierarchy of controls that may be used to minimize the risk of falling and of injury from a fall;

(d) training on the different means of fall protection and the most suitable application of each;

(e) instruction on selecting all relevant components of the fall-arrest system or travel restraint system, including connecting hardware;

(f) instruction on assessing and selecting specific anchors for use with the fall-arrest system or travel restraint system;

(g) training on the effects on the human body of a fall — including free fall and swing fall — and fall-arrest, which must address maximum arresting force and the purpose of energy absorbers;

(h) instruction and training on the use, storage, maintenance and inspection — including pre-use inspection — of fall-arrest systems, travel restraint systems and their components, including practice in inspecting, fitting, adjusting and connecting the systems and components; and

(i) instruction and training on emergency response procedures to be used if a fall occurs, including practice in carrying them out.

Timing

(2) The instruction and training must be provided

(a) before the work that requires the use of the fall-arrest system or travel restraint system begins; and

(b) at least once every three years.

Guidance for both fall protection training and the positions onboard a drilling and production installation which should have this training is provided in the COP TQOP. With respect to paragraph 112(1)(a) of the *OHS Regulations*, if the provided training does not cover the requirements of these *OHS Regulations*, supplemental training must be provided to address any differences or deficiencies.

PART 23: FALLING OBJECTS (Section 113)

Risk of injury

113 (1) The risk of injury from falling objects and material at the workplace, whether they are falling over or from a height, is a prescribed risk for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act.

Toe board or panel

(2) Subject to subsection (3), every employer must ensure, at each workplace under its control, that wherever there is a risk of objects or material falling from a raised work area onto a person below, a toe board or other solid or mesh panel that extends from the floor of the raised area to a sufficient height to prevent the objects or material from falling from the raised area is installed.

Alternative measures

(3) If the installation of a toe board or panel is not feasible, the employer must ensure that
(a) the objects or material are fastened to something in a manner that would, if they were to fall, prevent them from reaching a person below;
(b) a safety net is positioned below the raised area to catch the objects or material; or
(c) the area below and adjacent to the raised area is barricaded so that no person may enter it while work is underway.

General

Requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to dropped object prevention equipment, particularly those requirements for competency, use, inspection, testing and maintenance.

Dropped Object Prevention Program

With respect to subsection 113(1) of the *OHS Regulations*, falling or dropped objects is a prescribed risk and as such, a program must be developed. A dropped object prevention program should include, but is not limited to, the following:

- Identification of:
 - permanent equipment that could drop or fall over and cause harm, including light fixtures, bolts, wind walls, cameras, containers, etc.;
 - temporary equipment or materials that could drop or fall over and cause harm;
 - any materials or equipment that can become airborne because of wind;
 - potential areas where dropped objects can occur, such as through gratings, railings, forklift pockets of containers, equipment placed or left inadvertently at height following activities, etc.; and
 - certain activities during which dropped objects can occur such as erecting scaffolding, lifting with cranes or hoists, working at height, climbing ladders, replacing grating, etc.
- Implementation of measures that can be applied based on the risk assessment and hierarchy of controls described in section 6 of this Guideline. This should include consideration of secondary retention, coverings, lanyards, identification of zones, working aloft registers, etc.
- Development of an inspection, maintenance and verification program to verify that any associated design, engineering and administrative controls are in place and effective. As there are a variety of secondary retention methods available, best practice has been to provide photographs and detailed instructions for competent persons doing the inspections, such that they can confirm the “as found” condition of secondary retention equipment.
- Implementation of a training program for employees requiring awareness of potential dropped or falling objects.
- Implementation of a training program for employees or other individuals required to inspect or install secondary retention or apply other measures.

Additional guidance for these programs are provided in the following:

- Dropped Objects Prevention Scheme Global Resource Centre (www.dropsonline.org), including the *Dropped Object Prevention Scheme Recommended Practice*.
- Typical dropped object scenarios and mitigation measures are provided in *IOGP – Dropped Object Scenarios* available at www.iogp.org.

PART 24: MATERIALS HANDLING (Sections 114 – 129)

Definitions

114 *The following definitions apply in this Part.*

personnel transfer *means the transfer by crane of persons between a vessel and marine installation or structure, between vessels or between marine installations or structures.*

signaller *means a person who directs, by means of visual or auditory signals, the safe movement and operation of materials handling equipment.*

Lifting risks

115 (1) *The risks associated with the use of materials handling equipment, including to lift persons or things, are prescribed risks for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and the occupational health and safety program in respect of a workplace at which materials handling equipment is to be used for lifting must*

(a) identify the types of lifts that are expected to be performed at the workplace;
(b) set out criteria for classifying lifts by risk level, including criteria relating to the type of lift, its complexity, its physical elements, the expertise of those involved in carrying it out and the environmental conditions in which it is carried out;
(c) set out procedures for the preparation and performance of lifts by type and risk level, including

- (i) communication requirements among all persons involved in the lifts,*
- (ii) in the case of lifts of persons, the required use of personal protective equipment by the person being lifted, and*
- (iii) in the case of lifts of persons over the water, the availability of fast rescue boats;*

(d) identify any operational limits on lifting operations and any environmental conditions, such as wind, sea state and temperature, that may affect those operations, including by reducing the load that the materials handling equipment is able to safely handle or support;
(e) set out procedures for the maintenance, inspection, testing, repair and replacement of lifting equipment, fixed pad eyes and loose lifting gear; and
(f) set out procedures for communicating the provisions of the program that relate to lifting operations to all persons who are involved in carrying them out and all other persons in the vicinity who may be affected by them.

Personnel transfer risk

(2) *For the purpose of paragraph (1)(b), a personnel transfer must not be classified as a low risk lift.*

Work permit

116 A work permit is required for all lifts carried out at a workplace using materials handling equipment, except those classified under the occupational health and safety program as low risk.

Prohibitions

117 It is prohibited for

- (a) any employee to use or attempt to use materials handling equipment at a workplace if they have reason to doubt they can do so safely; or**
- (b) any signaller to direct any movement of materials handling equipment that would pose a risk to the health or safety of any person.**

Hazardous conditions

118 The employer must ensure that no person uses materials handling equipment at a workplace under its control in conditions in which that use presents a risk to the health or safety of any person unless necessary to prevent a greater risk to the health or safety of any person.

Manual handling

119 Every employer must ensure that, if the manual handling of anything may be hazardous to the health or safety of an employee, including because of its weight, size, shape or toxicity, that thing is, to the extent feasible, handled only using materials handling equipment.

Rated capacity

120 (1) Every employer must ensure that a competent person who is independent of the operator and employer inspects and proof tests all materials handling equipment that is to be used at a workplace under the employer's control if

- (a) the equipment is to be used at the workplace for the first time;**
- (b) repairs or modifications have been made to the equipment's load-carrying components;**
- (c) the equipment has been in contact with an electric arc or current; or**
- (d) there is any other reason to doubt that the rated capacity of the equipment that was most recently certified under subsection (2) or the limitations that were most recently indicated under that subsection continue to be accurate, including as a result of damage sustained by the equipment or modifications made to it.**

Certification

(2) The employer must ensure that the competent person, on the basis of the inspection and proof test, certifies in writing the rated capacity of the equipment and indicates in writing any limitations that must be imposed on its use having regard to environmental conditions.

Materials handling equipment

121 (1) Every employer must ensure, with respect to all materials handling equipment used at a workplace under its control, that

- (a) the equipment is, to the extent feasible,**
 - (i) designed and constructed to prevent the failure of any of its parts, and**
 - (ii) equipped with safety devices that will ensure that any such failure does not result in a loss of control of the equipment or its load or in any other hazardous situation;**
- (b) the equipment is marked in a manner that identifies its manufacturer and model;**
- (c) the equipment's rated capacity — or, in the case of equipment that can be operated in a range of positions or configurations, the greatest of its rated capacities — is clearly marked on a permanent part of it, in a position where the mark can be easily read;**
- (d) if the equipment can be operated in a range of positions or configurations, a chart indicating the rated capacities across that range is posted within view of the person operating it;**
- (e) the equipment's use in existing environmental conditions, including wind, sea state and temperature, is continually assessed by the person operating it, having regard to the limitations indicated under section 120(2), to determine whether those conditions have reduced the load that the equipment is able to safely handle or support to below its rated capacity and, if so, the extent to which the load has been reduced;**
- (f) the equipment is operated in accordance with its rated capacity or, if applicable, its reduced capacity as determined under paragraph (e);**
- (g) any braking, steering and other control systems with which the equipment is equipped can safely control and stop the load's movement;**
- (h) if the equipment is used for lifting, moving or positioning persons, it is equipped with at least two independent braking systems and a fail-safe control system;**
- (i) if the equipment is used for lifting, moving or positioning persons, it has — before its first use and after any repair or modification — been certified by a competent person who is independent of the operator and employer as being safe for that use, including in conjunction with any other equipment or device with which it is used;**
- (j) if the equipment is powered, it is equipped with**
 - (i) an audible signalling device within easy reach of the person operating the equipment, and**
 - (ii) an emergency stopping device that, when engaged, will immediately shut down and isolate the equipment and that is within easy reach of the person operating it as well as at any other location from which it is reasonably foreseeable that a person may need to stop the equipment;**
- (k) if operation of the equipment could result in a fire, it is equipped, in a location that is readily accessible to the person operating it, with firefighting equipment that is appropriate to all fire hazards that may arise;**
- (l) the equipment is designed and constructed, to the extent feasible, so that any vibration, jolting or other uneven movement of it will not cause injury to any person or impair the ability of the person operating the equipment to control it;**

(m) any glass in the equipment's doors, windows and other parts is of a type that will not shatter into dangerous pieces on impact;

(n) if the equipment is regularly used outdoors and has an operator's compartment or position that would expose the person operating it to an environmental condition that could be hazardous to their health or safety, the compartment or position is fitted with a roof or other structure that will protect the person from the environmental condition and is constructed from non-combustible or fire-resistant material;

(o) any hook with which the equipment is used or equipped has

(i) if it is used for lifting persons, a spring-loaded latch that is locked and pinned in the closed position before use to prevent the connecting shackle from dislodging from the hook, or

(ii) in any other case, a spring-loaded latch or other equally effective means of preventing the load from falling off the hook;

(p) any self-locking eye hooks with triggers with which the equipment is used or equipped are designed to prevent the trigger from being accidentally activated;

(q) if there is a risk that the person operating the equipment or a person being lifted, moved or positioned by it could be struck by an intruding, falling or flying object or a shifting load, it is equipped, if feasible, with a structure that is constructed from non-combustible or fire-resistant material and that will, under all foreseeable conditions, protect the person from that risk;

(r) any place on the equipment to which an employee requires regular access, including any operator's compartment or position, is equipped with a safe means of access and egress that

(i) does not require the employee to jump,

(ii) would permit the emergency evacuation and rescue of the employee, and

(iii) can accommodate the employee's body dimensions while they are wearing personal protective equipment;

(s) any item used in any operator's compartment or at any operator's position on the equipment provides an adequate range of adjustability to accommodate the person using it;

(t) the placement and design of any displays and controls on the equipment do not hinder or prevent the person operating the equipment from doing so safely;

(u) any pendant control with which the equipment is equipped is not hung or supported solely by its electrical wiring;

(v) any wire rope drum or sheave with which the equipment is equipped has a spooling device or other device to maintain the wire rope in the groove;

(w) all loads handled by the equipment are secured as necessary to prevent them from sliding or falling in a manner that would present a risk to the health or safety of any person;

(x) if the equipment is operated remotely, it is operated at a safe distance from the load being lifted;

(y) all tools, tool boxes, spare parts or other items carried on the equipment are securely stored;

(z) the equipment is not left unattended unless adequate measures have been taken to prevent it from moving;

(z.1) if the person operating the equipment does not have a clear and unobstructed view of the load and the area in which it is being operated, including the area through which the load is being moved, that person is directed by a competent person designated by the employer as a signaller who

- (i) is clearly recognizable as a signaller,*
 - (ii) has a continuous view of the person operating the equipment and remains in that person's line of sight,*
 - (iii) has a clear and unobstructed view of the load and the area in which the equipment is being operated, including the area through which the load is being moved, or, if that is not feasible, a continuous view of another signaller who has a clear and unobstructed view of, as the case may be, the load or the portions of the area that are not within the first signaller's view, and*
 - (iv) has no duties other than signalling while the equipment under their direction is in motion;*
- (z.2) any fuel tank, compressed gas cylinder or similar container containing a hazardous substance mounted on the equipment is*
- (i) located or protected so that it is not hazardous to the health or safety of any employee who operates or rides on the equipment,*
 - (ii) connected to fuel overflow and vent pipes that are located to ensure that fuel spills and vapours
 - (A) cannot be ignited by hot exhaust pipes or other hot or sparking parts, and*
 - (B) are not hazardous to the health or safety of any employee who operates or rides on the equipment, and**
 - (iii) marked on its caps or covers as to its contents; and*
- (z.3) the equipment is not used in an area in which it may come into contact with an electrical cable, pipe or other supply line, structure or other thing that could, if struck, constitute a hazard to the health or safety of persons unless the person operating the equipment and, if applicable, the signaller have been informed of*
- (i) the hazard and its location, and*
 - (ii) the distance that must be maintained to avoid accidental contact with the thing that constitutes the hazard.*

Exception to rated or reduced capacity

(2) Despite paragraph (1)(f), the materials handling equipment may be used to handle a load in excess of its rated capacity or reduced capacity for the purposes of testing and inspection.

Protection against contact

(3) If the employer is unable to determine with reasonable certainty the location of the hazard referred to in paragraph (1) (z.3) or the distance referred to in subparagraph (1) (z.3) (ii), or if it is necessary for the materials handling equipment to be used in closer proximity than that distance, the materials handling equipment may be used in the area only if

- (a) every electrical cable with which there is a risk of coming into contact is de-energized;***
- (b) every pipe or other supply line containing a hazardous substance with which there is a risk of coming into contact has been shut down and drained; and***
- (c) every other thing that could, if struck, pose a hazard is protected against impact from the equipment.***

Cranes and hoists

122 (1) Every employer must ensure, with respect to each lift by a crane or hoist that is carried out at a workplace under its control, that

(a) a competent person inspects the load before the lift to ensure that it is adequately secured by means of appropriate loose lifting gear;

(b) tag lines or similar devices are used to control the load's swing unless their use poses a hazard to the safety of any person;

(c) the person operating the crane or hoist does not leave the load suspended from the equipment while they are not at the controls;

(d) the load is safely landed and stabilized before being detached; and

(e) only persons who are essential to the conduct, supervision or safety of the lift are, while it is in progress, in the area in which it is being carried out.

Area marked and secured

(2) For the purpose of paragraph (1)(e), the employer must ensure that all approaches to the area in which the lift is being carried out are posted with universally recognized warning signs prohibiting access by unauthorized persons and are secured to prevent inadvertent access.

Presence of non-essential persons

(3) A person who operates a crane or hoist must not start a lift if a non-essential person is in the area in which the lift is being carried out. If such a person enters that area while a lift is in progress, the person operating the crane or hoist must immediately take measures to mitigate the risk to all persons, discontinue the lift as soon as it is safe to do so and not resume the lift until the area is cleared of non-essential persons.

Crane near helicopter deck

(4) Every employer must ensure that, when a helicopter is landing or taking off, any crane at a workplace under its control that could pose a physical or visual hazard to the helicopter or its crew remains stationary and, if feasible, has its boom stowed.

Offshore pedestal crane

(5) Every employer must ensure that every offshore pedestal crane used at a workplace under its control

(a) is equipped with

(i) appropriate travel limiting devices for its boom, hoist, blocks and slewing mechanism,

(ii) a device for measuring and indicating the weight of its load,

(iii) a device for measuring and indicating its boom extension or load radius, if its rated capacity varies on that basis,

(iv) a device for accessing anemometer readings, if the load that it is able to safely handle or support is susceptible to being reduced by wind, and

(v) a gross overload protection system, if it is used to move persons or things to or from a supply vessel; and

(b) has posted conspicuously and, if feasible, inside the crane control cab, the location of all approved laydown areas and restricted areas, the limitations indicated under subsection 120(2) and the chart referred to in paragraph 121(1)(d).

Manually operated hoist

(6) Every employer must ensure, with respect to any manually operated hoist used at a workplace under its control, that

(a) it is equipped with a mechanism to hold the load at the desired height; and

(b) if it is equipped with a crank handle and not equipped with automatic load brakes,

(i) it is equipped with a means of preventing the crank handle from slipping off the crank shaft while in use, and

(ii) no load is lowered on it unless the crank handle has been removed from the shaft or the hoist has otherwise been designed to eliminate the risk of a person being struck by the handle.

Wire rope clips

123 Every employer must ensure that any wire rope clips used at a workplace under its control are

(a) of sufficient strength to withstand the full weight that the wire rope with which they are used is capable of supporting; and

(b) made from a material that is suitable for the environmental conditions to which they are exposed.

Mobile equipment

124 (1) Every employer must ensure, with respect to all mobile equipment that is used at a workplace under its control, that

(a) it is equipped with seat belts, a rear-view mirror and operating and warning lights;

(b) it is used only in areas in which the overhead and side clearances are sufficient to permit the equipment and its load to be manoeuvred safely;

(c) while it is in motion,

(i) no person gets on or off of it except in the case of an emergency, and

(ii) nothing is picked up from or placed on it unless expressly permitted by the manufacturer's instructions; and

(d) any load that is transported by it while raised or suspended is carried as close to the floor as feasible and, in any case, not in a manner that renders the equipment unstable.

Blind corners

(2) The employer must ensure that mirrors are installed at all blind corners that may be taken by mobile equipment to permit the person operating that equipment to see any approaching person or equipment.

Guards

(3) If mobile equipment is used on the deck of a marine installation or structure or on an elevated area, the employer must ensure that guards sufficient to prevent the equipment from falling over the edge are installed at the edge of the deck or area.

Forklift load

(4) The employer must ensure that

(a) any unitized load that is transported on a forklift projects a distance no greater than half the height of the load above the top of the fork carriage, back rest or back rest extension of the forklift; and

(b) no part of a load that is transported on a forklift and consists of loose objects projects above the top of the fork carriage, back rest or back rest extension of the forklift.

Additional standards

125 (1) Every employer must ensure, at each workplace under its control, that

(a) the design, use, maintenance, inspection and testing of overhead, jib and gantry cranes, monorails and hoists conform to CSA Group standard B167, Overhead cranes, gantry cranes, monorails, hoists, and jib cranes;

(b) the design, construction, installation, use, maintenance and inspection of conveyors, cableways or other similar materials handling equipment conform to ASME standard B20.1, Safety Standard for Conveyors and Related Equipment; and

(c) the design, construction, use, maintenance and inspection of forklifts conform to CSA Group standard B335, Safety standard for lift trucks.

Loose lifting gear

(2) Every employer must ensure that the construction, use, maintenance, inspection and testing of all loose lifting gear used at a workplace under its control conforms to the following standards, as applicable:

(a) ASME standard B30.9, Slings;

(b) ASME standard B30.10, Hooks;

(c) ASME standard B30.20, Below-the-Hook Lifting Devices; and

(d) ASME standard B30.26, Rigging Hardware.

Personnel transfer

126 (1) Every employer must ensure, with respect to every personnel transfer at, to or from a workplace under its control, that

- (a) the loading and landing areas are clear of all obstacles;**
- (b) the personnel transfer device is raised and lowered, to the extent feasible, over water;**
- (c) there is continuous communication between both points of transfer;**
- (d) a fast rescue boat and crew are available nearby and prepared to launch if needed;**
- (e) each person assigned to plan, manage, participate in or supervise the personnel transfer has been trained or instructed on the procedures applicable to their role in the transfer, including with respect to the use of any equipment;**
- (f) the personnel transfer device is
 - (i) non-collapsible,**
 - (ii) made of corrosion-resistant material suitable for use in the environmental conditions in which it is used,**
 - (iii) designed to be buoyant,**
 - (iv) designed to protect the persons being transferred in it from falling and landing impact,**
 - (v) designed to allow persons to ride securely inside of it, either standing or seated,**
 - (vi) large enough to accommodate a person on a medical stretcher and one other person, and**
 - (vii) used only for carriage of persons and, if designed for that purpose, their personal baggage; and****
- (g) the safety devices referred to in subparagraph 121(1)(a)(ii) with which the crane used to carry out the transfer is equipped include a retention device installed from above the load block to the upper master link of the sling assembly.**

Availability of personnel transfer devices

(2) Every employer must ensure that at least two personnel transfer devices that meet the requirements set out in paragraph (1)(f) are available at all times at each workplace under its control that is a marine installation or structure used for drilling or production or as a living accommodation.

Personal protective equipment

(3) The personal protective equipment that every employer must provide to a person who is being transferred by personnel transfer includes either a helicopter passenger transportation suit system that conforms to the Airworthiness Manual published by the Department of Transport or a properly fitted immersion suit that conforms to paragraph 46(b).

Signalling

127 (1) Every employer must ensure, before any materials handling equipment is used at a workplace under its control, that

- (a) all persons at the workplace know the hand signal for “emergency stop”; and**

- (b) if the equipment is to be used in circumstances that will require the use of a signaller,**
(i) a code of hand signals is established, and
(ii) every signaller and every person operating the equipment is instructed in the use of that code.

Emergency stop signal

- (2) Every person who operates materials handling equipment at a workplace must obey the signal for “emergency stop”, given by any person.**

Other means of communication

- (3) If it is not feasible for a signaller to use hand signals to communicate to a person operating materials handling equipment, including due to the distance between them, the employer must ensure that**

- (a) the signaller and the person operating the equipment are provided with a primary and backup telephone, radio or other device that provides the signaller with a continuous means of communicating with the person operating the equipment while the equipment is in use;**
(b) any radio codes used by the signaller to communicate with the person operating the equipment are included in the code referred to in paragraph (1)(b); and
(c) if the signalling is to be done by means of a two-way radio system, it is operated on a dedicated radio channel.

Copy of code

- (4) The employer must ensure that a copy of the code referred to in paragraph (1)(b) is kept readily available for examination by all persons at the workplace.**

Signaller not understood

- (5) Any person who does not understand a direction given to them by a signaller must consider it to be a direction to stop.**

Inspection

- 128 (1) The competent person who carries out the thorough safety inspection referred to in subparagraph 87(1)(e)(ii) in respect of materials handling equipment must be independent of the operator and the employer.**

Increased frequency

- (2) Every employer must ensure, despite subparagraph 87(1)(e)(ii), that**
(a) the thorough safety inspection referred to in that subparagraph is also carried out in respect of materials handling equipment

- (i) before the equipment is used at the workplace for the first time,*
 - (ii) before it is returned to service after repairs or modifications have been made to its load carrying components, and*
 - (iii) before it is returned to service after being in contact with an electric arc or current;*
- and*

(b) all loose lifting gear, personnel transfer devices and safety devices that are used in conjunction with personnel transfer devices are subject to the thorough safety inspection referred to in that subparagraph at least once every six months.

Identification system

(3) The employer must implement, at every workplace under its control, a system that facilitates the identification of materials handling equipment that is due for inspection.

Instruction and training

129 The instruction and training that every employer must provide to an employee who uses materials handling equipment in the course of their work includes instruction and training on the effects of environmental conditions on the equipment's safe and proper use.

General

- Refer to the definitions of “materials handling equipment”, “mobile equipment” and “rated capacity” in the *OHS Regulations*.
- For materials handling equipment on drilling, production and accommodations installations, refer also to the requirements in section 137 of the *Framework Regulations*.
- In general, refer to the COP *Atlantic Canada Offshore Petroleum Industry Safe Lifting Practice Respecting the Design, Operation and Maintenance of Materials Handling Equipment*.
- In general, the requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* also apply to materials handling equipment, particularly those requirements for competency, use, inspection, testing and maintenance.

Work Permit

With respect to section 116 of the *OHS Regulations*, refer to requirements for work permits in Part 10: Work Permit of this Guideline.

Manual Handling

With respect to section 119 of the *OHS Regulations*, if manual handling is required, refer to section 41 of this Guideline.

Ventilation Requirements

With respect to section 124 of the *OHS Regulations*, also refer to the requirements under section 80 of the *OHS Regulations* and the associated guidance under Part 16: Ventilation of this Guideline.

Personnel Transfers

With respect to section 126 of the *OHS Regulations*, refer also to the *Code of Practice for Transportation of Employees via Vessel to or from a Workplace*.

Instruction and Training

With respect to section 129 of the *OHS Regulations*, refer to the following:

- Refer to the COP TQOP for the crane operator training, materials handling equipment training (e.g., forklift, gantry cranes), banksman training and rigger training. An appropriate level of training should be provided as recommended by recognized industry practices.
- Refer to the COP *Atlantic Canada Offshore Petroleum Industry Safe Lifting Practice Respecting the Design, Operation and Maintenance of Materials Handling Equipment* for training and competency requirements for crane inspectors and third-party inspectors of materials handling equipment.

PART 25: CONFINED SPACES

Section 130 – Evaluation of Confined Spaces

130 (1) The risks to which a person in a confined space is exposed are prescribed risks for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and every employer must ensure that, before any work begins at a workplace under its control, a competent person evaluates the workplace and makes a record of all confined spaces in it.

Re-evaluation

(2) The employer must ensure that each workplace is re-evaluated by a competent person at least once every three years, as well as on the creation or elimination of a confined space, and that the competent person records any changes in respect of the confined spaces at the workplace from the last evaluation.

Identification

(3) Every employer must ensure that each confined space at a workplace under its control, other than a confined space that has been made inaccessible with bolted blind flanges, is visibly identified at each point of access as

(a) being a confined space;

(b) being a space to which access is restricted to authorized persons; and

(c) containing a danger.

- Refer to the definition of “confined space” in Part 1 of the *OHS Regulations*.
- For clarity, it should be noted that the definition of “confined space” requires that all other hazards (e.g., engulfment, drowning, physical hazards) be accounted for when determining if the space is a confined space.

Section 131 – Confined Space Program

Occupational health and safety program

131 Every occupational health and safety program must, with respect to the various confined spaces at the workplace and the types of work that could be carried out in them,

(a) identify the personal protective equipment that is to be used or worn by employees in the confined space;

(b) set out measures to be taken to prevent the entanglement of lifelines and other equipment used by employees in the confined space;

(c) identify the atmospheric hazards that may be present in the confined space and the equipment to be used for atmospheric testing and monitoring in the confined space;

(d) address the calibration and testing of the equipment referred to in paragraph (c) and the appropriate frequency of atmospheric testing;

(e) set out a plan for responding to emergencies in the confined space that, among other things,

(i) identifies the situations that would trigger emergency response procedures,

(ii) identifies the equipment, including personal protective equipment, to be used or worn in carrying out those procedures,

(iii) sets out procedures for ensuring the immediate evacuation of the confined space when an alarm is activated or if there is any potentially hazardous change in the atmospheric concentration of a hazardous substance, oxygen or another flammable, explosive or combustible substance, and

(iv) sets out procedures for retrieving persons from the confined space, including alternate procedures that will ensure they can be retrieved safely if an obstruction or other condition makes the use of certain retrieval procedures or equipment unsafe for them or for those carrying out the retrieval;

(f) identify the means by which persons inside and outside the confined space are to communicate amongst themselves, including in an emergency;

(g) identify all resources necessary for ensuring the health and safety of employees in the confined space, including by setting out the manner of determining the number of attendants whose presence is necessary at the confined space;

(h) set out the manner in which persons designated under paragraph 133(1)(i) are to be notified of the time and location at which their assistance might be required; and

(i) provide for the regular conduct of emergency response drills and exercises.

Risk Assessment

- With respect to paragraphs 131(a) and 131(b) of the *OHS Regulations*, the risk assessment for each confined space must include an assessment of PPE (type and arrangement for the individual) to ensure PPE selection will enable individuals to safely enter, occupy and egress a confined space. Pursuant to paragraph 133(1)(c), this must account for the size of the individual, the size and configuration of the confined space, access/egress (including for rescue purposes) and ensuring that the PPE selected provides the least amount of interference possible while allowing work to be performed safely.
- Refer to *CSA Z1006 Management of Work in Confined Spaces* for additional guidance on completion of risk assessments, development of procedures, development of rescue plans and other considerations. Additional hazards to be considered as part of any risk assessment should include the physical and human factors associated with a moving facility and should consider the additional risks associated with ongoing drilling and production activities, if applicable.
- Some other considerations are as follows:
 - Lifelines should be considered for use anytime a hazard is present or when it could be beneficial for rescue.
 - Refer to requirements of paragraphs 108(a) and 131(a) of the *OHS Regulations*. In addition, if bulky PPE is being worn while ascending or descending a ladder, fall protection should be worn.
 - With respect to paragraph 131(c) of the *OHS Regulations*, refer also to the requirements and associated guidance for hazardous substances under Part 31: Hazardous Substances of the *OHS Regulations*.

Rescue Plans

With respect to paragraph 131(e) of the *OHS Regulations*, rescue plans must be developed for each specific space to be entered, including when gas testing is taking place. This should account for the configuration of the space, the type of work activities being undertaken and the various scenarios where rescue may be required. Refer to *CSA Z1006 Management of Work in Confined Spaces* for additional guidance on developing rescue plans for various types of work activities and scenarios where rescue may be required. Figure D1 in this standard gives a flow chart for rescue planning which may provide useful guidance.

Additional Notes

- Additional guidance on confined space entry into tanks and hot work in tanks is provided in *API Standard 2015 Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks*. Although the standard applies to atmospheric and low-pressure storage tanks, the principles should be considered for entry into all petroleum vessels by a competent person when developing procedures.
- Additional requirements on hot work in confined spaces is provided in *CSA W117.2 Safety in Welding, Cutting and Allied Processes*, which is referenced in subsection 140(2) of the *OHS Regulations*, and IMO conventions (which references the *International Safety Guide for Oil Tankers and Terminals*).

Section 132 – Work Permit

132 (1) A work permit is required for any occupation of a confined space at a workplace.

Additional contents

(2) In addition to the information that is required to be set out in a work permit under subsection 53(1), the following information must be included in a work permit for the occupation of a confined space:

- (a) the method of entering and exiting the confined space;**
- (b) the escape route from the confined space, which, if persons are required to use a self-contained breathing apparatus or airline respirator, must allow for escape before the air supply is expected to be exhausted; and**
- (c) a record of all persons signing in and out of the confined space.**

Validity

(3) A work permit for the occupation of a confined space ceases to be valid 12 hours after the most recent testing referred to in subsection 134(2).

Posting and updating

(4) The employer must ensure that a copy of the work permit is posted at every entrance to the confined space for the duration of its occupation and is updated as new information referred to in paragraph (2)(c) or paragraph 53(1)(i) becomes available.

- Refer to requirements for work permits in Part 10: Work Permit of this Guideline.
- With respect to paragraph 131(e) of the *OHS Regulations*, as a best practice, the rescue plan for the confined space should be included in the work permit for each space entered.

- Pursuant to paragraph 131(h) of the *OHS Regulations*, emergency response teams that are responsible for doing confined space rescue must be consulted before any entry into a confined space is commenced to ensure that all equipment is ready and placed in close proximity to the entrance and that the scope of work being undertaken is understood.
- With respect to paragraph 131(g) of the *OHS Regulations*, when issuing permits for confined space entry work consideration must be given to the number of confined space entry permits issued at any one time and the available resources for emergency response.

Section 133 – Entry and Occupation Requirements

133 (1) Every employer must ensure that no person enters or remains in a confined space at a workplace under its control unless

(a) the person is knowledgeable about the provisions of the occupational health and safety program that pertain to confined spaces;

(b) the person is wearing a full body harness to facilitate their retrieval or, if wearing the harness would pose a greater risk to them than not wearing one, measures are in place to ensure that the person can be retrieved safely in accordance with the alternate procedures referred to in subparagraph 131(e)(iv);

(c) the opening to be used for entry into and exit from the confined space is sufficiently large to allow safe passage of persons wearing personal protective equipment;

(d) any mechanical and electrical equipment that is in the confined space but not required to carry out any work there is

(i) disconnected from its energy source, and

(ii) isolated, locked out and tagged in accordance with Part 27;

(e) all sources of ignition are eliminated, if a flammable, explosive or combustible substance is present in the confined space;

(f) any liquid in which a person may drown or free-flowing solid in which a person may become entrapped has been removed from the confined space;

(g) engineering controls are in place to prevent any inadvertent discharge from any source, including a pipe or other supply line, that may be hazardous to the health or safety of any person in the confined space;

(h) measures have been taken to ensure that, if an atmospheric hazard arises while the confined space is occupied, the confined space will be continuously ventilated;

(i) persons have been designated to respond to any emergency that may arise in the confined space and have been notified of the time and location at which their assistance may be required;

(j) sufficient equipment referred to in paragraph 131(a) and subparagraph 131(e)(ii) is provided as close as feasible to the entrance to the confined space for use by the persons referred to in paragraph (i); and

(k) a drill has been completed simulating an emergency rescue from the confined space.

Isolation of piping

(2) The engineering controls referred to in paragraph (1)(g) must, with respect to a pipe containing a hazardous substance or a substance under pressure or at a high temperature, consist of a blank or blind in conjunction with valves or other blocking seals that are secured in the closed position — using a positive mechanical device that is designed to resist being opened inadvertently, other than as a result of excessive force — to prevent the substance from reaching the blank or blind. The employer must ensure that the pipe is clearly marked to indicate the location of the blank or blind and that the valves or seals are clearly marked as being closed.

Unauthorized entry

(3) The employer must ensure that adequate barriers are erected to prevent unauthorized entry to the confined space.

Sign in and out

(4) Every employer must ensure that every person entering and exiting a confined space signs in and out.

Retrieval

With respect to paragraph 133(1)(b) of the *OHS Regulations*, additional guidance on confined space retrieval equipment can be found in Annex A of *CSA Z1006 Management of Work in Confined Spaces*.

Confined Space Drills

The intent of confined space drills is to simulate emergency rescue from a particular confined space and to document this as part of the associated rescue plan for that space. These drills should involve physically executing/simulating the action to prove the effectiveness of the rescue plan and they should be performed before entering the space for the first time to verify the effectiveness of the plan and its implementation. Anytime a physical change is made to a confined space or a hazard is introduced that has the potential to affect access or egress, the drill must be repeated. Periodic confined space drills should also be performed to test the response and effectiveness of confined space rescue teams. With respect to paragraph 133(1)(k) of the *OHS Regulations*, refer to section 30 of the *OHS Regulations*. Additional guidance on confined space drills is provided in the COP TQOP.

Section 134 – Confined Space Atmosphere

134 (1) Every employer must ensure, if feasible, in respect of every occupied confined space at a workplace under its control — and every area whose atmosphere may be affected by, or may affect, the atmosphere in an occupied confined space — that

(a) no person’s exposure to a hazardous substance in the atmosphere exceeds the threshold limit value for that substance, as adjusted if necessary to reflect the length of time the person is in the confined space or area, or the biological exposure index for that substance, without regard to any protection that may be afforded to the person through the use of personal protective equipment;

(b) the concentration of oxygen in the atmosphere is not less than 19.5% and not more than 22.5%; and

(c) the concentration of any other flammable, explosive or combustible substance in the atmosphere is less than 10% of its lower explosive limit.

Testing

(2) The employer must ensure that a competent person conducts atmospheric testing, and records the results, at times and frequencies appropriate to the hazards in the atmosphere, including

(a) before each time the confined space becomes occupied, unless the atmosphere in the space was, while the space was unoccupied, continuously monitored for any accumulation of contaminants that could pose an immediate threat to life or that could interfere with a person’s ability to escape unaided from the space and that monitoring shows no irregularities;

(b) after any change in the work or to the confined space that may affect its atmosphere; and

(c) in any case, no less frequently than every 12 hours while the confined space remains occupied.

Testing from outside

(3) The employer must ensure that the competent person does not enter the confined space to carry out testing unless they have first carried out preliminary testing of its atmosphere from outside the space.

Continuous monitoring

(4) In addition to the testing required under subsection (2), the employer must ensure that the atmosphere in the confined space is continuously monitored for any accumulation of contaminants that could pose an immediate threat to life or that could interfere with a person’s ability to escape unaided from the confined space and must ensure that all persons in the space are alerted to any such an accumulation with sufficient warning to be able to exit the space safely.

Lifeline

(5) If it is not feasible to comply with subsection (1), the employer must ensure that every person in the confined space who wears a full body harness in accordance with paragraph 133(1)(b) has securely attached to it a lifeline that is secured outside the confined space and is monitored and controlled by an attendant, unless the risk of using the lifeline would pose a greater risk to the person than not using it.

Risk Assessment

With respect to subsections 134(1) and 156(1) of the *OHS Regulations* and pursuant to the *Accord Acts*⁷⁷, a risk assessment must be performed before entering a confined space atmosphere to identify if there are or can be any possible contaminants present in excess of the ACGIH TLV. As an example, in the case of volatile organic compounds, it is possible to be below the allowable LEL but be exposed to a particular substance in excess of the TLV. For this reason, sampling strategies must be developed by a competent person.

Oxygen Concentration

- With respect to paragraphs 134(1)(b) and 157(1)(a) of the *OHS Regulations*, while limits are established for oxygen, work should stop for an oxygen concentration below 20.9% as it is possible that a contaminant is displacing the oxygen. Pursuant to section 156 of the *OHS Regulations*, an investigation and assessment must be done to determine the source and to ensure that workers are not being exposed to a particular substance in excess of the TLV.
- With respect to paragraph 134(1)(c) of the *OHS Regulations*, if hot work is being performed in a confined space, refer to the limit established under paragraph 140(1)(c) of the *OHS Regulations*.

Testing

- With respect to paragraph 134(2)(a) of the *OHS Regulations*, the intent is to allow for employees to exit the confined space for brief periods of time (e.g., between testing and the issuing of the work permit, or short breaks within the work shift) without having to do a full confined space atmosphere test before re-entry. The term monitoring in this section applies to both observations by employees and monitoring the atmosphere through the use of gas detection.
- Anytime a confined space is left unoccupied, no matter how brief the time frame, a competent person (e.g., authorized gas tester, marine chemist, industrial hygienist) must risk assess the potential for a hazardous condition before re-entry as required under the *Accord Acts*⁷⁸. This risk assessment must consider, but is not limited to, any change in the work area or surrounding areas which has the potential to affect conditions in the space and if there is a method to determine that there were no changes in the atmosphere during the time the space

⁷⁷ C-NLAAIA 205.009, 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009, 210.015(2)(a) and 210.02(2)(a)

⁷⁸ C-NLAAIA 205.009, 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009, 210.015(2)(a) and 210.02(2)(a)

was vacant (e.g., failure of an isolation, hazardous gases introduced through ventilation system or adjacent work areas). Once the area has been assessed and the competent person is satisfied that there have been no changes in conditions in the timeframe it was unoccupied, the space can be re-entered.

- In addition, if there are any indications that the conditions could have changed in the space, then a gas test must be performed.
- With respect to subsection 134(3) of the *OHS Regulations*, because of the size or complexity of the space and the possible stratification of gases within a space, the competent person (e.g., authorized gas tester) must start the test from outside the space before entry to complete the testing. Once acceptable levels are confirmed before entry, the remaining areas of the space that cannot be reached from the outside must be tested and the visual inspection of the space must be completed to verify that there are no other hazards that could affect the atmosphere. Often times, this can only be determined by a visual inspection of the space (e.g., standing water, sludge or residue in a space could have entrained substances that could be released into the atmosphere from agitation or changes in temperature). It is also possible for substances to be entrained around equipment or structures or there could be areas with poor air circulation. Gas testing of a confined space must cover all areas of the space, often in a grid pattern to ensure the results are accurate and representative of the entire space. Additional guidance is provided in Annex C of *CSA Z1006 Management of Work in Confined Spaces*.

Lifeline

With respect to subsection 134(5) of the *OHS Regulations*, an untested confined space must be assumed to be IDLH until testing demonstrates otherwise. Full body harnesses must be donned for all confined space entry and lifelines must be used for atmospheric testing of confined spaces unless it is unsafe to do so.

Section 135 – Attendants

135 (1) Every employer must ensure that attendants are stationed outside and near all entrances to each confined space at a workplace under its control while the space is occupied to
(a) maintain a record of all persons entering and exiting the confined space and communicate that information among themselves;
(b) maintain communication with and monitor the safety of persons in the confined space; and
(c) provide emergency assistance to persons in the confined space and summon additional assistance if needed.

Means of communication

(2) The employer must ensure that attendants are provided with a means of communicating continuously with persons in the confined space, of communicating with other attendants at the confined space and of summoning additional assistance.

No entry

(3) Attendants must not enter the confined space.

No other duties

(4) The employer must ensure that attendants are not assigned any duties beyond those referred to in subsection (1) while stationed outside a confined space.

Multiple entrances

(5) If a single attendant is responsible for monitoring more than one entrance to a confined space, the employer must ensure that they are stationed in the location that best allows them to perform their duties in respect of each of those entrances.

With respect to paragraph 135(1)(c) of the *OHS Regulations*, attendants may provide emergency assistance to persons in the space so long as they do not enter the confined space or compromise their own safety. In the case of a top entry confined space this would typically be accomplished through non-entry rescue using a retrieval system. Any equipment required for the attendant to perform these duties must be present at the entrance of the space as specified in paragraph 133(1)(j) of the *OHS Regulations*.

Section 136 – Instruction and Training

136 (1) The instruction and training that every employer must provide to employees whose work relates to confined spaces at a workplace under its control, including employees whose work involves entering, evaluating, attending at, supervising persons in or carrying out emergency response procedures in relation to a confined space, includes

(a) training on the legislation applicable to confined spaces, including as it pertains to rights and duties;

(b) training on the identification of confined spaces;

(c) training on and practice in the assessment of risks associated with confined spaces, including the particular risks of carrying out hot work in confined spaces;

(d) training on the issuance and use of work permits for the occupation of confined spaces;

(e) an overview of the operation of personal gas monitoring devices;

(f) training on atmospheric testing, including practice in selecting appropriate testing methods and equipment;

(g) training on methods to safely ventilate or remove unwanted substances from confined spaces;

(h) training on the measures required under paragraphs 133(1)(d) and (g) for isolating energy and substances;

(i) training on methods of emergency response; and

(j) training on and practice in the selection and use of appropriate personal protective equipment and rescue equipment in a confined space.

Frequency

(2) The training required under subsection (1) must be provided to every employee before the first time they do any work relating to confined spaces at the workplace and then at least once every three years.

Emergency response

(3) The employer must also provide any employee who may be required to carry out emergency response procedures in relation to a confined space with training and instruction in

(a) appropriate emergency response procedures for that confined space; and

(b) first aid at a level appropriate to the types of situations that may arise in that confined space.

-
- Additional guidance on training is provided in *CSA Z1006 Management of Work in Confined Spaces*.
 - Employees who are involved in confined space entry (including those preparing or authorizing permits, supervisors, attendants, authorized gas testers, members of emergency response teams involved in confined space rescue, etc.) must have instruction and training⁷⁹, and should be demonstrated as competent in the confined space program and work permit procedures at that particular workplace. In addition, employees must be assessed as competent in any individually assigned specific tasks under the confined space program.
 - Refer to the COP TQOP for acceptable emergency response training. With respect to paragraph 136(1)(a) of the *OHS Regulations*, if the provided training does not cover the requirements of these *OHS Regulations*, supplemental training must be provided to address any differences or deficiencies.

Section 137 – Completion of Confined Space Work

137 Every employer must ensure that, once work in a confined space at a workplace under its control is complete, a competent person verifies that all persons have left the confined space and all tools, equipment and other material not intended to remain in the confined space have been removed.

⁷⁹ C-NLAAIA 205.013(k), 205.019(1)(j); CNSOPRAIA 210.013(j), 210.019(1)(j)

No guidance required at this time.

PART 26: HOT WORK (Sections 138 – 140)

Risks

138 The risks arising from hot work are prescribed risks for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act.

Work permit

139 (1) A work permit is required for all hot work carried out at a workplace.

Content – circumstances

(2) The circumstances referred to in paragraph 53(1)(e) that must be set out in the work permit include

- (a) the location where the hot work is to be carried out, in particular, relative to any areas referred to in subsection 26(2);***
- (b) the presence of any flammable, explosive or combustible material; and***
- (c) the presence of any material that could produce toxic or flammable vapours.***

Content – procedures

(3) The work procedures referred to in paragraph 53(1)(f) that must be set out in the work permit must identify, among other things, the tools and equipment to be used in carrying out the hot work.

Requirements

140 (1) Every employer must ensure that no hot work is carried out at a workplace under its control unless

- (a) the atmosphere in the work area and any adjacent area that may be affected by the hot work is continuously monitored for flammable, explosive or combustible substances, if there is a risk of them being present in those areas, and all persons in those areas are alerted if there is a risk of any of those substances being present in concentrations exceeding the values referred to in paragraphs (b) and (c);***
- (b) the atmospheric concentration of oxygen is less than 22.5%;***
- (c) the atmospheric concentration of any other flammable, explosive or combustible substance is less than 5% of its lower explosive limit;***

- (d) all potential sources of flammable, explosive or combustible substances have been identified, isolated and locked out;***
- (e) the work area and any adjacent area that may be affected by the hot work are free of all materials that could produce a toxic, flammable, explosive or combustible vapour when heated;***
- (f) a competent person maintains a fire watch patrol; and***
- (g) firefighting equipment appropriate to all fire hazards that may arise is readily accessible.***

Welding, cutting and allied processes

(2) The employer must ensure that welding, cutting and allied processes are carried out, to the extent feasible, in accordance with the requirements set out in CSA Group standard W117.2, Safety in welding, cutting, and allied processes.

Use of gas

- (3) The employer must ensure that, if gas is used in the carrying out of hot work,***
- (a) all hose lines or pipes that convey gases to the burner, and all couplings, are clearly identified to ensure they are not interchanged;***
 - (b) only standard fittings are used and those fittings, as well as any regulator or automatic reducing valve on the equipment being used, are designed for the gas being used;***
 - (c) safety devices that prevent the reverse flow of fuel, gas, oxygen or air from the torch end of the equipment being used to the supply lines and that prevent a flame from burning back from the torch end into the supply lines are used;***
 - (d) all gas cylinders, piping and fittings are located to prevent them from being damaged or are otherwise protected against damage;***
 - (e) all regulators and associated flexible connecting hoses are tested for leaks, using a substance that is not oil-, fat- or grease-based, immediately after being connected to a gas cylinder or other gas supply;***
 - (f) while the hot work is being carried out, a person is stationed in a location that allows them to immediately cut off the gas supply in an emergency;***
 - (g) the gas supply is immediately cut off if a leak is detected during the test referred to in paragraph (e) or during the hot work and no further work is carried out until the leak has been repaired and another test has been carried out to verify the success of the repair;***
 - (h) all parts of the equipment being used are free from defects, leaks, oil and grease;***
 - (i) the torch is ignited only with a device that is designed for that purpose; and***
 - (j) hot metal parts and electrode stubs are disposed of or otherwise dealt with when not in use in a manner that dissipates heat and minimizes the potential for ignition and fire.***

General

- Refer to the definition of “hot work” in the *OHS Regulations*.

- Refer to the requirements and associated guidance for hot work in confined spaces under Part 25: Confined Spaces of the *OHS Regulations*.
- For drilling, production and accommodations installations, refer also to requirements for ignition prevention in section 115 of the *Framework Regulations*.
- Refer also to the requirements and associated guidance for hazardous energy and hazardous substances under Part 27: Hazardous Energy and Part 31: Hazardous Substances of the *OHS Regulations*, respectively.

Hazard Identification

With respect to the sections 138 and 140 of the *OHS Regulations* and the referenced *CSA Group standard W117.2, Safety in welding, cutting, and allied processes*, additional hazards to be considered should also include wind conditions and the physical and human factors associated with a moving facility.

Work Permit

With respect to section 139 of the *OHS Regulations*, refer to requirements for work permits in Part 10: Work Permit of this Guideline. Work permits are required for any work or activity that involves the use of or is likely to produce fire, sparks or another source of ignition. Clarification is provided as follows:

- A work permit for hot work is not typically required for the routine use of galleys, smoking rooms or laundry rooms, but would be required for maintenance involving hot work in these areas.
- A work permit for any welding, including in welding shops or machinery spaces is required. In these circumstances, it is acceptable to have an open or recurrent permit for this activity, as long as hazards and measures are reviewed before the work is done. Refer to guidance provided on JSAs under Part 10: Work Permits of this Guideline.
- All work permits for hot work should consider:
 - type of hot work to be performed (e.g., sparking, non-sparking);
 - type of work and potential distance to which sparks may project;
 - type of equipment used or introduced;
 - type of barriers used (e.g., surface coverings, fire-rated deck/bulkheads, pressurized habitat);
 - presence of combustible and flammable materials and fire hazards in adjacent spaces (e.g., well, oil storage tanks, chemical storage);
 - locations of vents which may release combustible or flammable substances;
 - provisions to ensure the monitoring of any operating or physical and environmental conditions that may increase the risk;
 - types of concurrent work or activity being performed (e.g., production, drilling, loading or offloading tankers, painting or using other flammable substances nearby);
 - types of fire and gas detection systems available;
 - types of fire protection equipment available;

- types of atmospheric monitoring required, including personal gas monitors and dosimeters;
- the length of time the fire watch should stay at the work area following completion of the hot work activity to ensure all residual heat and ignition sources have dissipated;
- the ability to reduce surface temperatures and the associated cool down time; and
- any other measure to reduce the likelihood of ignition.

The following guidance is provided for hot work being undertaken onboard a drilling or production installation:

Interior Non-Hazardous Locations

For hot work performed in interior non-hazardous locations (including welding shops and workshops) consideration should be given to the following:

- The area should be ventilated to provide positive pressure and should be equipped with an alarm that notifies the control room and control stations if pressurization is lost.
- Passive fire and blast protected barriers surrounding the area are maintained with fire-rated penetrations (e.g., cables, pipes) and openings (e.g., doors, vents). Dampers should close on confirmed fire and gas detection.
- Area and air intakes should be equipped with fire and gas detectors that will initiate automatic closure of any dampers and isolate any equipment capable of being a source of ignition.
- Additional ventilation to ensure atmospheric contaminants (e.g. welding fumes) and atmospheric conditions (e.g., oxygen deficient, oxygen rich, LEL) generated by the work being undertaken do not exceed requirements outlined in Part 26 of the *OHS Regulations*.

If hot work is proposed for an area that is not equipped with automatic or manual fixed fire suppression, additional mitigations should be considered during the risk assessment.

Ignition Prevention During Well Operations

For installations performing well operations, hot work should always be deferred to periods when the well is cased or the installation is not actively conducting well operations. When this work cannot be deferred and completing the work during operations is deemed the lowest risk option, a risk assessment should be completed and consider the

- well design;
- well barriers available or in place;
- type of ongoing well operations activity (e.g., riserless drilling, completions activity, wellhead cutting); and
- well classification (e.g., exploration, delineation or development).

Riserless/Top-Hole Drilling Operations

With respect to a floating drilling installation, the following are measures which should be

considered when conducting hot work:

- Positioning the installation a safe distance from the spudded well centre with consideration given to physical and environmental conditions (e.g., winds, currents) at the time.
- Positioning the installation directly above the well when the casing is cemented, with no open hole exposed and the string out of the well.
- Positioning the installation directly above the well when the string is in the hole to cut and recover the wellhead from a well that is abandoned, but only without cutting into an open annulus.

Riser Connected Well Operations

With respect to a drilling installation, whether it is floating or fixed, the measures which should be considered when conducting hot work:

- Recent fluid returns from the well in the gas trap should be less than 5% (background gas).
- The atmospheric LEL concentration should be below the detection limit in the area of hot work.
- Logging while drilling (LWD) and formation evaluation tools should confirm no hydrocarbon-bearing formations are present.
- Active drilling up to 200m Total Vertical Depth (TVD) before the shallowest prognosed hydrocarbon-bearing zone may occur, deferring hot work after this point.
- If well operations are being conducted where hydrocarbon-bearing zones are present, the well should be isolated from the formation by two verified barrier envelopes with no active well operations occurring, including circulating.

Ignition Prevention During Production Operations

If the lowest risk option (compared to deferring the work) is to conduct the hot work during production operations, the following should be considered:

- Systems or equipment containing hydrocarbons that are not a safe distance from the work area should be shut down, depressurized, drained, inerted, cleaned, gas freed, etc.
- All work which could increase the risk of a flammable, combustible or explosive substance being released (e.g., cargo offloading to tanker, transfer of fuel or materials handling operations over live process equipment) should be prohibited while the hot work is ongoing.
- Safety systems (e.g., fire and gas detection, fire protection systems, emergency shutdown systems) protecting the immediate area and surrounding areas should be installed and operational.
 - Inhibits should be limited to those systems that may be impacted by the work itself; however, alarms should still activate in the control room.
 - Any equipment used must be rated for the area in which it is used and equipped with other

protections as necessary to prevent it from being a source of ignition in the event of a hydrocarbon release.

- If the possibility exists that gas may migrate into the hot work area, pressurized enclosures (e.g., habitat) should be installed. For the use of pressurised enclosures, the following should be considered:
 - It should be installed and used in accordance with manufacturer's recommendations or in the case of a customized design, approved by a competent person (e.g., professional engineer).
 - The associated ventilation system providing positive pressure to the enclosed area should be equipped with an alarm when a loss of pressurization occurs. In the event of loss of pressure in the pressurized enclosure, all work should cease and any non-hazardous area equipment should be electrically isolated (e.g., welding equipment).
 - The air intakes should be equipped with a gas detection system that when activated will result in automatic closure of any dampers and isolation of any equipment capable of being a source of ignition.
 - If positive pressurization cannot be maintained, if the isolation or cool down of ignition sources cannot be obtained in the amount of time it takes persons to make the work area safe or if there are other reasons that the work cannot be done safely, persons should not conduct the work.

Additional Guidance

Additional guidance is provided in the following:

- *NFPA 1 – Fire Code*
- *NFPA 51 Standard for the Design and Installation of Oxygen – Fuel Gas Systems for Welding, Cutting, and Allied Processes*
- *NFPA 51B Standard for Fire Prevention During Welding, Cutting, and Other Hot Work*
- With respect to a dive project, guidance for underwater welding by divers is provided in section 11 of *CSA W117.2 Safety in Welding, Cutting and Allied Processes*.

PART 27: HAZARDOUS ENERGY

Section 141 – Definitions

141 *The following definitions apply in this Part.*

electrical hazard means a danger of electric shock, arc flash burn, thermal burn or blast injury resulting from contact with electrical equipment or failure of that equipment.

hazardous energy means any energy that can harm a person.

limited approach boundary means

- (a) in respect of an exposed energized electrical conductor,**
- (i) if it is part of an alternating current system, the distance set out in column 2 of Schedule 1 that corresponds to the conductor's voltage in column 1, and**
 - (ii) if it is part of a direct current system, the distance set out in column 2 of Schedule 2 that corresponds to the conductor's voltage in column 1; and**
- (b) in respect of an exposed energized circuit part,**
- (i) if it is part of an alternating current system, the distance set out in column 3 of Schedule 1 that corresponds to the part's voltage in column 1, and**
 - (ii) if it is part of a direct current system, the distance set out in column 3 of Schedule 2 that corresponds to the part's voltage in column 1.**

restricted approach boundary, in respect of an exposed energized electrical conductor or circuit part, means

- (a) if it is part of an alternating current system, the distance set out in column 4 of Schedule 1 that corresponds to the conductor's or part's voltage in column 1; and**
- (b) if it is part of a direct current system, the distance set out in column 4 of Schedule 2 that corresponds to the conductor's or part's voltage in column 1.**
-

In addition to the definitions provided in this Part, refer to the definitions of “de-energized”, “electrical equipment”, “energized”, “energy”, “energy isolating device”, “lockout” and “lockout device” in Part 1 of the *OHS Regulations*. Refer to Schedule 1 and Schedule 2 in the *OHS Regulations* for limited approach and restricted approach boundaries.

Section 142 – Hazardous Energy Program

Occupational health and safety program

142 Exposure to hazardous energy, including as a result of the unexpected start-up of any equipment, machine, device or system or as a result of contact with or a failure of electrical equipment, is a prescribed risk for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and every occupational health and safety program must

- (a) set out, for each piece of equipment, machine, device and system at the workplace that may present such a risk,**
- (i) the nomenclature by which it is to be identified, which must be consistent with any associated design documents,**
 - (ii) detailed procedures for de-energizing it and isolating its energy source using an energy-isolating device at all possible locations, both local and remote, and**
 - (iii) detailed procedures for verifying and testing that the de-energization and isolation are complete;**

- (b) set out detailed procedures for securing and removing lockout devices and for affixing tags or signs to those devices;***
 - (c) set out the method by which persons in the vicinity of any equipment, machine, device or system are to be notified of its lockout;***
 - (d) set out procedures for the orderly transfer of control of lockout devices between outgoing and incoming employees during shift or personnel changes;***
 - (e) set out measures for ensuring that, before any equipment, machine, device or system that has been locked out is re-energized, all persons are clear of — and have been instructed to remain clear of — the area in which they would be at risk of exposure to hazardous energy;***
 - (f) set out procedures for the inspection and testing of electrical equipment and circuits, including the selection of appropriate testing equipment, having regard to the electrical code to which the workplace is designed;***
 - (g) set out procedures for maintaining the integrity of any electrical equipment's insulation and its enclosure;***
 - (h) set out procedures for all work involving hazardous energy, including in relation to***
 - (i) the selection of appropriate tools,***
 - (ii) the use of personal protective equipment and other protective devices, and***
 - (iii) communication with persons in the vicinity of the location where the work is being carried out to ensure the safe coordination of the work with other activities;***
 - (i) identify the limited approach boundaries and restricted approach boundaries that apply to all locations at the workplace where shock hazards exist;***
 - (j) identify the arc flash boundary for every piece of electrical equipment at the workplace that gives rise to an arc flash hazard;***
 - (k) address the number of persons, including electrical safety watchers, needed to safely carry out electrical work and the competencies those persons must meet;***
 - (l) set out procedures for carrying out work involving multiple power systems, if applicable;***
 - (m) set out procedures for responding to emergencies involving hazardous energy, including with respect to the use of emergency equipment; and***
 - (n) address precautions to be taken with respect to battery rooms.***
-
-

General

- For drilling, production and accommodations installations, refer to the requirements for electrical systems and mechanical equipment in sections 122 and 136 of the *Framework Regulations*, respectively.
- Requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to equipment and machines, particularly those requirements for competency, use, inspection, testing and maintenance.

Risk Assessment

- With respect to control of hazardous energy, refer to *CSA Z460 Control of hazardous energy — Lockout and other methods* that is referenced in paragraph 144(1)(a) of the *OHS Regulations*.
- Additional guidance on the hazards to be considered and risk assessments is provided in informative Annexes A, B and C of *CSA Z460 Control of hazardous energy — Lockout and other methods*
- Additional guidance on electrical safety programs and shock and arc flash risk assessments is provided in *CSA Z462 Workplace Electrical Safety* and *NFPA 70E Standard for Electrical Safety in the Workplace*.
- The risk assessment should include consideration of the risks associated with potential ignition sources, exposure to wet environments, location of potential hazardous environments and if the operation of equipment can generate a hazardous substance (e.g., batteries).

Control of Hazardous Energy

Additional guidance on the control of hazardous energy is provided in the informative annexes of *CSA Z460 Control of hazardous energy — Lockout and other methods*. The use of freeze plugs and hot-tapping methods for isolating pressurized piping systems as noted in informative annexes L and R is not considered to be an “energy-isolating device” pursuant to subsection 144(3) of the *OHS Regulations* or an “engineering control” pursuant to paragraph 157(1)(r) of the *OHS Regulations*.

Electrical Hazards

Part 27: Hazardous Energy of the *OHS Regulations* applies to hazardous energy and this includes electrical hazards. A risk assessment must be performed⁸⁰. As electrical systems can affect the health and safety of individuals, then in accordance with the hierarchy of controls, they should be designed, constructed, installed, operated, inspected, tested and maintained in accordance with recognized standards. It is acknowledged that most vessels follow flag state, SOLAS and classification society rules, however, these rules typically apply only to marine-related systems, and not non-marine-related systems (e.g., seismic, construction, diving) unless they carry an additional class notation or other certificate which covers that equipment.

Design, Selection, Installation and Certification of Electrical Equipment

- Additional guidance for the design, selection, installation and certification of electrical systems on marine installations and structures that are not drilling, production or accommodations installations is provided in the following:
 - SOLAS.

⁸⁰ C-NLAAIA 205.009, 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009, 210.015(2)(a) and 210.02(2)(a)

- *IEC 60092 – Electrical Installations in Ships and IEC 60079 – Explosive Atmospheres* - series of standards or standards equivalent to this suite of standards.
- Classification society rules.
- For drilling, production and accommodations installations, refer also to the requirements and associated guidance for electrical systems provided for section 122 of the *Framework Regulations*.
- Pursuant to paragraph 144(1)(r) of the *OHS Regulations*, hazardous area rated equipment must be certified and this certification should be issued by a testing laboratory or independent certification body, verifying that the equipment meets recognized standards. Accepted independent certification bodies to the IEC are found on the list of *Approved IECEx Certification Bodies Certified Equipment Scheme*.⁸¹
- If additional equipment is placed onboard a marine installation or structure to do a specific program for which that marine installation or structure is not designed or classed (e.g., offshore supply vessel used for geophysical operations), consideration needs to be given to providing power to systems that are required to operate in an emergency (e.g., emergency lighting; alarms; communications; fire or gas detection, if required; fire protection systems, if required; and for diving systems, if required).
- If activities are planned for winter months, cables for power, propulsion, lighting and control should include a low-temperature performance rating measured by cold impact and cold bend tests that is suitable for the environment in which it is operating. These tests should be done to *CAN/CSA Standard C22.2 No. 2556 Wire and Cable Test Methods* or equivalent.

Operation and Maintenance of Electrical Equipment

- Additional guidance for the operation and maintenance of electrical systems on marine installations and structures that are not drilling, production or accommodations installations is provided in the following:
 - *CSA Z462 Workplace Electrical Safety*.
 - *NFPA 70E Standard for Electrical Safety in the Workplace*.
 - *CSA Z463 Maintenance of Electrical Systems*.
 - *NFPA 70B Standard for Electrical Equipment Maintenance*.
- For drilling, production and accommodations installations, refer also to the requirements and associated guidance for electrical systems provided for section 122 of the *Framework Regulations*.
- Guidance on electrical PPE is provided in Part 8: Personal Protective Equipment of this Guideline.

Pressure Hazards

Part 27: Hazardous Energy of the *OHS Regulations* applies to hazardous energy, and this includes pressure hazards. In addition, Part 31: Hazardous Substances of the *OHS Regulations* applies to

⁸¹ <https://www.iecex.com/information/excbs/httpwww-iecex-comdirectorybodiesbodies1-aspid5/>

hazardous substances. By the definition of “hazardous substance”, pressure is included. A risk assessment must be performed⁸². As pressure systems can impact the health and safety of individuals, then in accordance with the hierarchy of controls, they should be designed, constructed, installed, operated, inspected, tested and maintained in accordance with recognized standards. It is acknowledged that most vessels follow flag state, SOLAS and classification society rules; however, these rules typically apply only to marine-related systems, and not non-marine-related systems, unless they carry an additional class notation (e.g., seismic, construction, diving) which covers that equipment. For drilling, production and accommodations installations, refer to requirements for boilers and pressure systems in section 135 of the *Framework Regulations*. With respect to other types of marine installations or structures, the *Public Safety Act* also applies in NL pursuant to section 205.007 of the C-NLAAIA.

Section 143 – Work Permit

143 A work permit is required for all work at a workplace that presents a risk of exposing any person to hazardous energy, including any work carried out closer to an exposed energized electrical conductor or circuit part than the applicable limited approach boundary or restricted approach boundary.

Refer to requirements for work permits in Part 10: Work Permit of this Guideline.

Section 144 – Requirements

144 (1) Every employer must ensure, at each workplace under its control, that

- (a) hazardous energy is controlled in accordance with CSA Group standard Z460, Control of hazardous energy — Lockout and other methods;***
- (b) every energy-isolating device is***
 - (i) designed and located to permit its quick and safe operation at all times, and***
 - (ii) marked to identify, in the manner referred to in subparagraph 142(a)(i), the equipment, machine, device or system whose energy source it isolates;***
- (c) lockout devices and locks for securing them are readily available to employees who may need to carry out a lockout;***
- (d) every lock used to secure a lockout device is***
 - (i) marked with a unique identification number, and***
 - (ii) openable only with a unique key;***
- (e) no lockout device is secured on an energy-isolating device in a manner that prevents access to any other energy-isolating device;***

⁸² C-NLAAIA 205.009, 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009, 210.015(2)(a) and 210.02(2)(a)

(f) every employee who secures a lockout device affixes to it a tag or sign containing only the following information:

- (i) the equipment, machine, device or system whose energy source has been isolated and the type of energy that has been isolated,**
- (ii) words or a symbol prohibiting any person from starting or operating the equipment, machine, device or system,**
- (iii) the date and time of the lockout,**
- (iv) the name of the employee who secured the lockout device, and**
- (v) the reason for the lockout;**

(g) no tag or sign is removed from a lockout device by anyone other than the employee who affixed it or to whom control of the device has been transferred in accordance with the procedures referred to in paragraph 142(d);

(h) any equipment, machine, device or system that has been locked out is inspected before being returned to service;

(i) all electrical equipment is adequately guarded, insulated and, subject to paragraph 91(1)(i), grounded to prevent electrical hazards;

(j) all grounded electrical equipment that plugs into an electrical receptacle meets the following requirements:

- (i) its cord, if any, contains a grounding conductor,**
- (ii) its plug and the receptacle in which the plug is inserted are not**
 - (A) connected or altered in a manner that might interrupt the continuity of the grounding conductor, or**
 - (B) altered to allow for use in a manner not intended by the manufacturer, and**
- (iii) it is not used with an adapter that would interrupt the continuity of the grounding conductor;**

(k) work is not carried out on electrical equipment while it is energized unless necessary due to equipment design or operational limitations;

(l) a competent person identifies, using an arc flash analysis, all electrical equipment that poses an arc flash hazard and that equipment has affixed to it a warning label setting out the date of the analysis and the following information reflecting the analysis:

- (i) the equipment's nominal voltage,**
- (ii) the arc flash boundary for the equipment, and**
- (iii) an indication of:**
 - (A) the available incident energy and corresponding working distance in respect of the equipment,**
 - (B) the arc flash category of personal protective equipment that must be used with the equipment,**
 - (C) the minimum arc rating of personal protective equipment that must be used with the equipment, or**
 - (D) the site-specific level of personal protective equipment that must be used with the equipment;**

(m) only the following persons work on energized electrical equipment used for the generation or distribution of electricity or install, repair, alter, or test electrical equipment:

- (i) a person who is certified as an electrician under the laws of a province**

- (ii) a person who has qualifications from a jurisdiction outside of Canada equivalent to those of a person referred to in subparagraph (i), and*
- (iii) a person who is undergoing on-the-job training under the direct supervision of a person referred to in subparagraph (i) for the purpose of becoming such a person and who has demonstrated an ability to perform tasks safely at their level of training;*
- (n) electrical equipment is installed in a location that minimizes risk to the safety of persons and in a manner that protects the equipment from mechanical and other damage;*
- (o) the working space around and the path of access to every electrical switch, energy-isolating device or meter are free from obstruction and arranged to give authorized persons ready access to them;*
- (p) electrical rooms are not used for storing flammable, explosive or combustible materials or materials that are unrelated to electrical work;*
- (q) volatile flammable substances are not used in any electrical room or other enclosed area through which high-voltage electrical current passes;*
- (r) all electrical equipment that is used in an area referred to in subsection 26(2) has been certified by a competent person who is independent of the operator, employer and manufacturer as being safe for use in such an area;*
- (s) any electrical receptacle or extension cord that is used in an area referred to in subsection 26(2) is equipped with a terminal that interrupts the circuit before a connecting device is withdrawn;*
- (t) all electrical receptacles that may be exposed to weather are weatherproof;*
- (u) all electrical receptacles in an area in which persons may be exposed to water, including within 1.5 m of faucets and showers, are designed or equipped to prevent ground faults;*
- (v) precautions are taken to prevent a plug from being inserted into an electrical receptacle of the incorrect voltage;*
- (w) electrical drawings, produced by a competent person and containing line diagrams indicating the position and voltage rating of all electrical components at the workplace, are made readily available to all persons at the workplace and are updated after any repair or alteration to the electrical system;*
- (x) legible warning signs, written in the official operating language of the workplace with symbols to convey the same meaning, are posted wherever an electrical hazard exists; and*
- (y) a non-conductive rescue hook is kept readily available for use wherever a person is carrying out work that may expose them to a shock hazard.*

Lockout tag or sign

- (2) If the energy source being isolated is electric, the tag or sign referred to in paragraph (1)(f) must be made of non-conductive material.*

Isolation of piping

- (3) The employer must ensure that*
 - (a) an energy-isolating device used on a pipe that contains a substance that may release hazardous energy, other than in a confined space,*

- (i) consists of a blank or blind in conjunction with valves or other blocking seals that are secured and locked out in the closed position to prevent the substance from reaching the blank or blind,*
 - (ii) consists of a double block and bleed system consisting of two valves or other blocking seals that are secured and locked out in the closed position and located on each side of a valve or other mechanism that is secured and locked out in the open position to allow for bleed-off between the two seals, or*
 - (iii) has been approved by a professional engineer;*
- (b) the location of any blank or blind referred to in subparagraph (a)(i) is clearly marked on the pipe;*
- (c) all valves or other seals or mechanisms referred to in subparagraph (a)(i) or (ii) are clearly marked with the position they are in; and*
- (d) any energy-isolating device referred to in subparagraph (a)(ii) or (iii) is monitored for leaks.*

Defective electrical equipment

- (4) The employer must ensure that electrical equipment that is taken out of service under section 88 is de-energized until a competent person determines it to be safe for use.*
-

General

Refer to the requirements and associated guidance for hazardous energy programs, electrical equipment and pressure systems under section 142 of this Guideline.

Isolation of Piping

With respect to subsection 144(3) of the *OHS Regulations*, additional guidance is provided in UK Health and Safety Executive publication *HSG 253 The safe isolation of plant and equipment*. The following should be considered if implementing this guidance:

- The method of isolation must meet the definition in the *OHS Regulations* for an “energy-isolating device”. As examples, the use of freeze plugs or hot-tapping methods would not be considered an “energy-isolating device”.
- Refer to the definition of “hazardous energy” and the definition of “energy” in the *OHS Regulations*.
- With respect to subparagraph 144(3)(a)(iii) of the *OHS Regulations*, refer to the definition of “professional engineer”. When a professional engineer is approving an alternative energy-isolating device, they should also be reviewing and approving the specific isolation method for the particular piping section being isolated.
- With respect to paragraphs 144(3)(a) and (d) of the *OHS Regulations*, isolations should either be a “positive isolation” or a “proved isolation” as described in Figure 4 of the referenced standard. “Non-proved isolations” should not be used as they have no means to confirm the effectiveness of the valve closure before breaking into the system and no means to monitor.

- If the isolation is on equipment containing a hazardous substance, refer also to the requirements of paragraph 157(1)(r) of the *OHS Regulations*.

Section 145 – Approach Boundaries

145 (1) Every employer must ensure that no person at a workplace under its control is closer to an exposed energized electrical conductor or circuit part than

(a) the applicable restricted approach boundary, unless they are a person referred to in paragraph 144(1)(m); or

(b) the applicable limited approach boundary, unless they are a person referred to in paragraph 144(1)(m) or are accompanied by such a person.

No closer than necessary

(2) In any case, no person may be closer to an exposed energized electrical conductor or circuit part than is necessary to carry out their work.

Work within limited approach boundary

(3) If a person must work closer to an exposed energized electrical conductor or circuit part than the applicable limited approach boundary but does not require access to the conductor or part, or if a person working outside that boundary is at risk of inadvertently moving within it, the employer must ensure that

(a) temporary barriers that do not touch the equipment to which the conductor or circuit part belong are installed to prevent access to the conductor or part; and

(b) the work is constantly observed by an electrical safety watcher designated by the employer.

Work within restricted approach boundary

(4) If a person must work closer to an exposed energized electrical conductor or circuit part than the applicable restricted approach boundary, or if a person working outside that boundary is at risk of inadvertently moving within it, the employer must ensure that any tools and equipment that the person uses that could make contact with the electrical conductor or circuit part are insulated.

Arc flash boundary

(5) Every employer must ensure that, if a person at a workplace under its control must work within an arc flash boundary identified under paragraph 142(j),

(a) that person has received training in the recognition and mitigation of arc flash hazards;

(b) that person wears arc-rated personal protective equipment that is selected having regard to the information set out on the label referred to in paragraph 144(1)(l); and

(c) the work is constantly observed by an electrical safety watcher designated by the employer.

Electrical safety watcher

(6) Every employer must ensure that any electrical safety watcher whom it designates for the purpose of paragraph (3)(b) or (5)(c)

(a) is knowledgeable of the hazards associated with the work;

(b) is trained in methods of release and rescue and has the equipment necessary for carrying them out, including all personal protective equipment necessary for their own health and safety;

(c) has first aid qualifications at least equivalent to a standard first aid certificate;

(d) is knowledgeable in the procedures to be followed to obtain medical and other emergency assistance and is provided with a means of summoning that assistance without delay;

(e) has the authority to immediately stop any part of the work that they consider dangerous;

(f) warns the persons carrying out the work of the hazards associated with it;

(g) remains in the area in which the work is being carried out for its duration;

(h) ensures that all safety precautions and procedures are complied with; and

(i) is free of any other duties that might interfere with their duties as a watcher.

- Refer to the definitions of “electrical hazard”, “limited approach boundary” and “restricted approach boundary” under section 141 of this Guideline.
- Refer to Schedules I and II of the *OHS Regulations* for distances for limited approach boundaries and restricted approach boundaries.
- Refer to paragraph 144(1)(l) of the *OHS Regulations*, which requires that an arc flash analysis be completed by a competent person to determine if an arc flash hazard exists. The competent person should be either an electrical engineer or a senior electrician with the requisite experience, training and knowledge.
- Additional guidance on limited approach boundaries, restricted approach boundaries, arc flash boundaries and work on energized electrical equipment is provided in the following:
 - *CSA Z462 Workplace Electrical Safety.*
 - *NFPA 70E Standard for Electrical Safety in the Workplace.*

PART 28: COMPRESSED GAS (Sections 146 – 148)

Hose lines

146 Every employer must ensure that all hose lines for conveying flammable gas or oxygen from supply piping or compressed gas cylinders to torches at a workplace under its control have threads that conform to Compressed Gas Association standard CGA V-1, Standard for Compressed Gas Cylinder Valve Outlet and Inlet Connections.

Compressed gas cylinders

147 (1) Every employer must ensure that all compressed gas cylinders at a workplace under its control, and all equipment used with them, including regulators, automatic reducing valves, gauges and hose lines are compatible for use with one another, as indicated in the manufacturers' specifications.

Use with different gas

(2) The employer must ensure that no equipment referred to in subsection (1) that is provided for use with a compressed gas cylinder containing a particular gas or group of gases is used at a workplace under its control with a compressed gas cylinder containing a different gas, unless that use is approved by the persons who supplied the compressed gas cylinder and the equipment.

Cylinder connections and valves

(3) The employer must ensure, with respect to every compressed gas cylinder at a workplace under its control, that

(a) the cylinder's connections to piping, regulators and other components are kept sufficiently tight to prevent leakage; and

(b) the cylinder's valves are kept closed at all times unless

(i) gas is flowing from the cylinder,

(ii) the gas in the cylinder is maintaining pressure in a supply line, or

(iii) the cylinder is on standby during and between operations using gas and is not left unattended.

Portable compressed gas cylinders

148 (1) Every employer must ensure that all portable compressed gas cylinders at a workplace under its control

(a) are not

(i) rolled on their sides,

(ii) subjected to rough handling, or

(iii) moved using a lifting magnet or sling;

(b) are protected from

(i) exposure to corrosive materials or corrosion-aiding substances,

(ii) exposure to excessive heat or fire, and

(iii) falling and impact;

(c) if they are not equipped with appropriate lifting mechanisms, are lifted only while held by a suitable cradle, platform or other device;

(d) are transported in a manner that will prevent damage to them and their components, including by

(i) being fastened securely in an upright position, unless designed for transport in another orientation, and

(ii) having in place a protective cap or other means of preventing damage to their valves; and

(e) are stored

(i) securely in place, using securing devices capable of withstanding a fire,

(ii) in a well-ventilated storage area where the cylinders are not exposed to temperature extremes, in accordance with the specifications of the cylinder manufacturer and the person who supplied the gas,

(iii) with the cylinders grouped by type of gas and the groups arranged having regard to the gases they contain,

(iv) with full and empty cylinders separated,

(v) at a safe distance from all operations that produce flames, sparks or molten metal or that would result in excessive heating of the cylinder, and

(vi) with all protective devices with which they are equipped in place.

Signage

(2) The employer must ensure that signs are posted in a conspicuous place in each storage area in which portable compressed gas cylinders are stored, indicating the names of the gases stored.

General

The requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to compressed gas cylinders and associated equipment, particularly those requirements for competency, use, inspection, testing and maintenance.

Risk Assessment

Refer to the requirements and associated guidance for hazardous substances in Part 31: Hazardous Substances of the *OHS Regulations*. Under the OHS program referred to in Part 31: Hazardous Substances of the *OHS Regulations*, the risk assessment for hazardous substances should also include the following in respect of compressed gases:

- An assessment of the effects of explosions, fires, incompatibility, breaches of security, impact forces and physical and environmental conditions that may affect the safe transportation, storage, handling or use of compressed gases and identification of additional measures that may need to be implemented to reduce risks to employees (e.g., compressed oxygen is incompatible with acetylene and cylinders are typically required to be separated by a minimum distance). Additional guidance is provided in:
 - Chapter 63 of the *NFPA 1: Fire Code*.
 - IMO's *IMDG Code* (e.g., separation and segregation of compressed gases).

- With respect to the use of compressed air, low-pressure air can blow dirt and other foreign bodies into the skin or eyes and high-pressure air can tear the skin and flesh, and can inflict serious injury.

Welding in Confined Spaces

With regards to the use of compressed gases for welding in a confined space, refer to the standard referenced in subsection 140(2) of the *OHS Regulations*. In addition, with respect to section 137 of the *OHS Regulations*, compressed gas cylinders or connected equipment must be removed from the confined space once work is complete.

PART 29: ABRASIVE BLASTING AND HIGH-PRESSURE WASHING (Section 149)

149(1) The risks associated with abrasive blasting, high-pressure washing or any similar operation are prescribed risks for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and every employer must, if such an operation is carried out at a workplace under its control, ensure that

- (a) every enclosure and other work area in which the operation is carried out is identified by warning signs or similar means;**
- (b) only employees who are necessary for the operation are permitted in the enclosure or other work area in which the operation is carried out; and**
- (c) every enclosure is provided with exhaust ventilation and makeup air to reduce the exposure of persons inside the enclosure, if applicable, to air contaminants and prevent the uncontrolled release of air contaminants from the enclosure.**

Definition of enclosure

(2) For the purposes of subsection (1), enclosure means a temporarily or permanently contained work area in which abrasive blasting, high-pressure washing or any similar operation is carried out, and includes an unoccupied contained work area in which such an operation is carried out by a person located outside that area.

General

- Refer to the definition of “high-pressure washing” under Part 1 of the *OHS Regulations*.
- “Similar operations” should be interpreted to include other activities such as low-pressure washing (less than 10 MPa), grinding, zip cutting, needle gunning, etc.
- The requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to equipment used in these operations, particularly those requirements for competency, use, inspection, testing and maintenance.

- Refer also to Part 31: Hazardous Substances of the *OHS Regulations* for hazardous substances.
- If the operation is being performed in a confined space, refer to Part 25: Confined Spaces of the *OHS Regulations*.
- If the operation has the potential to ignite a hazardous atmosphere, refer also to Part 26: Hot Work of the *OHS Regulations*.

Hazard Identification

The hazards to be considered and addressed while performing these operations include the following:

- The use of abrasive materials containing harmful air contaminants, such as silica sand or grit containing silica, garnet sand, nickel slag, etc. The safety data sheets for these products should be consulted.
- Harmful air contaminants which can be released during the operation, such as marine paint containing lead.
- Selection of appropriate respiratory protection based upon the hazards present. Typically, during abrasive blasting, a Type CE NIOSH-certified blasting airline respirator with positive pressure blasting helmet would be required. Respiratory protection may also be required for those involved in the clean up of blast materials and associated debris. Refer to Part 8: Personal Protective Equipment of the *OHS Regulations* for requirements.
- Selection of appropriate skin protection or personal protective clothing during the operation, and identification of decontamination processes and areas, if required (e.g., for removal and handling of decontaminated clothing).
- Noise hazards that can be generated during the operation. Refer to Part 15: Sound Levels of the *OHS Regulations* for requirements.
- Vibration hazards that can be generated during the operation. Refer to section 41 of the *OHS Regulations* for requirements.
- Potential for generation of a flammable or combustible environment during the operation.
- The risk of injury from the operation (e.g., cuts, bruises, impingement, flying materials).

PART 30: EXPLOSIVES

Section 150 – Definition

150 In this Part, activity involving an explosive includes the storage, handling, transportation, preparation or use of an explosive.

No guidance required at this time.

Section 151 – Explosives Program

Occupational health and safety program

151 *The risks associated with the carrying out of activities involving an explosive are prescribed risks for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and the occupational health and safety program in respect of a workplace at which those activities may be carried out must*

(a) *address the designation of areas in which those activities may be carried out;*

(b) *set out procedures respecting*

(i) the loading and recovery of explosives, including measures to be taken prior to loading and recovery to address stray electrical energy and radiofrequency,

(ii) the secure storage of explosives, including their protection from heat, impact and electrical charge,

(iii) the selection and use of appropriate tools, including non-sparking tools,

(iv) the management of misfires, and

(v) the disposal of waste explosive materials; and

(c) *address the possible effects of weather conditions on the activities.*

- There are other Acts and regulations outside of the *Regulator's* jurisdiction which contain requirements for the purchase, import/export, transportation, storage, use and disposal of explosives in Canada. They include the:
 - *Explosives Act (Canada)* and associated regulations; and
 - *TDG Act* and associated regulations.
- With respect to section 151 of the *OHS Regulations* and any prescribed requirements under the *Explosives Act (Canada)* and its associated regulations, risk assessments should include an assessment of the effects of explosions, fires, other ignition sources, breaches of security and physical and environmental conditions which may affect the safe transportation, storage, handling or use of explosives, identifying what additional measures may need to be incorporated to prevent ignition of the explosives or to reduce the likelihood of damage to critical equipment and employees if they are ignited.
- Additional guidance is provided in the following:
 - *NFPA (1) Fire Code.*
 - *CAN/BNQ 2910-500 – Explosives – Magazines for Industrial Explosives.*
 - For drilling and production activities, guidance is also provided in *API RP 67 – Oilfield Explosives Safety.*
- The requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to equipment used in this operation, particularly those requirements for competency, use, inspection, testing and maintenance.

Section 152 – Work Permit

152 A work permit is required for any activity involving an explosive that is carried out at a workplace.

Refer to requirements for work permits in Part 10: Work Permit of this Guideline.

Section 153 – Requirements

153 (1) Every employer must ensure, with respect to each workplace under its control, that

- (a) only competent persons designated by the employer are involved in any activity involving an explosive or have access to explosives;**
- (b) only persons who are directly involved in the activity are permitted in the area in which it is carried out;**
- (c) the quantity of explosives stored at the workplace is kept to a minimum and does not, in any event, exceed 75 kg unless otherwise authorized by the Chief Safety Officer;**
- (d) detonators are not stored with any other explosive other than a detonator of the same type;**
- (e) containers in which explosives are stored are**
 - (i) constructed to safely contain the explosives during all potential emergencies, or**
 - (ii) constructed and located in a manner that allows them to be safely jettisoned in an emergency; and**
- (f) a competent person maintains and keeps in a readily accessible location a register of all explosives stored, removed from storage, used, misfired, destroyed or transferred outside the workplace, setting out**
 - (i) the competent person's name,**
 - (ii) the name of the person who stored, removed, used, destroyed or transferred the explosive,**
 - (iii) the date of the storage, removal, use, destruction or transfer,**
 - (iv) the type and amount of explosive stored, removed, used, misfired, destroyed or transferred, and**
 - (v) particulars of the explosive's use, intended use, destruction or transfer.**

Retention of register

(2) The employer must retain the register referred to in paragraph (1)(f) for at least two years after the last day on which information is recorded in it.

Training and Qualifications

- With respect to the training and qualifications of persons under paragraphs 153(1)(a), (b) and (f) of the *OHS Regulations*, persons with responsibility for explosives are normally required to accompany the explosives from onshore to offshore as part of the approval for use. Refer to the *Explosives Act (Canada)* and its associated regulations.
- For drilling and production activities, refer also to the COP TQOP for “Oil Well Explosive Handling” for those involved in well-related operations.

Quantity of Explosives

With respect to paragraph 153(1)(c) of the *OHS Regulations*, the CSO may approve the storage of more than 75 kg of explosives on a marine installation or structure on the basis of the following:

- A greater quantity of explosives is required to do the operation efficiently.
- The quantity of explosives stored on the marine installation or structure is not more than that required for the operation.
- The explosives are removed from the marine installation or structure when not required for use.
- The risks associated with their transportation on a supply vessel are reduced to as low as reasonably practicable with consideration given to not transporting the explosives while passengers are being transported.

PART 31: HAZARDOUS SUBSTANCES

Section 154 – Definitions

154 *The following definitions apply in this Part.*

fugitive emission means a hazardous product in any form that escapes into the workplace from processing equipment, emission control equipment or a product.

hazardous waste means a hazardous product that is intended to be recycled, recovered or disposed of.

product identifier, in respect of a hazardous substance, including a hazardous product, means its brand name, chemical name, common name, generic name or trade name.

- Refer to the definition of “hazardous substances” in Part III.1 of the *Accord Acts* and the definitions in the *Hazardous Products Act*, *Hazardous Materials Information Review Act* and the *Radiation Health and Safety Act* (for NL).

- In addition to the definitions in this Part, refer to the definitions of “hazard information”, “hazardous product”, “safety data sheet” and “threshold limit value” in Part 1 of the *OHS Regulations*.
- The referenced *American Conference of Governmental Industrial Hygienists Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices* is updated at least annually. It should be consulted for any changes each time it is updated.

Section 155 – Hazardous Substances Program

Occupational health and safety program

155 (1) Exposure to hazardous substances is a prescribed risk for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and the associated control measures set out in the occupational health and safety program must be commensurate to the risks associated with each hazardous substance present at the workplace.

Contents

(2) Every occupational health and safety program must set out procedures for

- (a) managing the introduction of new hazardous substances into the workplace;***
- (b) identifying and substituting, to the extent feasible, non-hazardous or less hazardous substances for more hazardous substances used at the workplace;***
- (c) ensuring that all safety data sheets and other documents containing hazard information with respect to hazardous substances at the workplace are kept up to date;***
- (d) developing and implementing any medical monitoring program that may be required under paragraph 156(1)(c);***
- (e) identifying and implementing means, potentially including protective reassignment, of eliminating all workplace exposure to a respiratory sensitizer or skin sensitizer, as those terms are defined in section 8.4 of the Hazardous Products Regulations, for any employee who is or is likely to be sensitized to that substance;***
- (f) informing employees of the hazards posed by any substance that is a germ cell mutagen, as defined in section 8.5 of the Hazardous Products Regulations, or toxic to reproduction, as defined in section 8.7 of those Regulations, to which they may be exposed at the workplace; and***
- (g) determining levels of safe exposure to the substances referred to in paragraph (f) for persons who are pregnant or breastfeeding or intend to conceive a child and identifying and implementing means, potentially including protective reassignment, of ensuring that those levels are not exceeded in respect of any employee who has advised the employer that they are such a person.***

General

- Refer to the references in the *Accord Acts* to the *Hazardous Products Act*, *Hazardous Materials Information Review Act* and the *Radiation Health and Safety Act* (for NL).
- Any dangerous goods that are transported by air or by water (marine) must comply with the requirements of the *TDG Act* and associated regulations.
- Refer also to requirements for storage and handling of chemical substances in sections 44 and 45 of the *Framework Regulations*.
- As the *Accord Acts* require continual assessment of risks, before a hazardous substance is used for the first time in the workplace, a risk assessment should be performed pursuant to the *Accord Acts*⁸³.
- Additional resources for hazardous substances (e.g., asbestos, mold, radiation) are provided on the CCOHS website (www.ccohs.ca).

Medical Monitoring Programs

With respect to paragraph 155(2)(d) of the *OHS Regulations*, medical monitoring programs must be developed in consultation with a competent person (e.g., industrial hygienist, occupational health physician) and consider any practices that have been well established for chemicals (e.g., silica, asbestos, lead) and the requirements of ACGIH Biological Exposure Indices. The following should be included in any such program:

- The relevant hazardous substances to be monitored and determination of which population is at risk based upon exposure assessments.
- The requirements for baseline testing, what type of testing is required and how often testing will be performed.
- How information on the monitoring program and the results will be communicated to affected employees.
- How information will be evaluated for individuals and for trending to determine the adequacy of controls.
- Provisions for record keeping, including occupational history of the workers, test results, trends and any other information which may be relevant.

Medical monitoring programs must also consider other potential exposures to physical agents, such as noise and vibration. Refer to the requirements and associated guidance under sections 41 and 77 of the *OHS Regulations*.

Respiratory or Skin Sensitization

With respect to paragraph 155(2)(e) of the *OHS Regulations*, if a person has become sensitized to a substance, the ACGIH TLV's will not be applicable. For that reason, the operator and employer must ensure a sensitized individual is not exposed to a substance for which they are sensitized.

⁸³ C-NLAAIA 205.009, 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009, 210.015(2)(a) and 210.02(2)(a)

Section 156 – Investigation and Assessment

156 (1) The employer must, for the purpose of investigating and assessing potential exposure under paragraph 205.022(f) (or 210.022(f)) of the Act, before the work that gives rise to the potential exposure begins,

(a) obtain from a competent person designated by it, in consultation with the workplace committee or coordinator, as the case may be, a signed written report that

(i) addresses the following factors in respect of each hazardous substance to which employees may be exposed:

(A) the substance's chemical, biological and physical properties,

(B) the routes of exposure to the substance,

(C) the acute and chronic effects on health of exposure to the substance,

(D) the manner in which the substance is produced, stored, used, handled and disposed of at the workplace,

(E) the control methods used to eliminate or reduce the employees' exposure to the substance, and

(F) the quantity, concentration or level of substance to which the employees may be exposed, including, in the case of an airborne chemical agent, whether that concentration is likely to exceed 50% of the threshold limit value for that agent referred to in paragraph 157(1)(a), and

(ii) sets out the competent person's recommendations regarding compliance with the provisions of the Act and these Regulations respecting hazardous substances, including recommendations in respect of sampling, testing and medical examinations of employees;

(b) if the report referred to in paragraph (a) recommends the medical examination of employees,

(i) obtain from a physician with specialized knowledge of the hazardous substance to which the employees may be exposed a written opinion, to be retained with the report, as to whether the medical examination is necessary, and

(ii) if it is confirmed that the examination is necessary, obtain the results of a medical examination of each employee, carried out by a physician acceptable to that employee and at the employer's expense, indicating whether the employee is fit to be exposed to the substance and, if so, any restrictions that ought to be imposed on their exposure; and

(c) assess whether and to what extent medical monitoring of employees is necessary and, if the employer determines that it is necessary — or if requested by the Board under paragraph 205.066(1)(f) (or 210.067(1)(f)) of the Act — implement a program for the medical monitoring of the employees.

Combined effect

(2) If two or more hazardous substances have a similar toxicological effect on the same target organ or system, their combined effect must be considered for the purpose of the investigation

and assessment, using the additive mixture formula set out in the American Conference of Governmental Industrial Hygienists publication TLVs and BEIs Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices.

Testing methodology

(3) If it is likely that the concentration of an airborne chemical agent referred to in clause (1)(a)(i)(F) exceeds the threshold limit value for that agent referred to in paragraph 157(1)(a), the concentration must be determined using a test that conforms to the United States National Institute for Occupational Safety and Health’s NIOSH Manual of Analytical Methods, if such a test exists for that agent.

Competent Person

With respect to paragraph 156(1)(a) of the *OHS Regulations*, the competent person should have a background in marine and offshore working environments and hold one of the following certifications or their equivalent:

- Certified Industrial Hygienist designated by the American Board of Industrial Hygiene.
- Registered Occupational Hygienist designated by the Canadian Registration Board of Occupational Hygienists.
- Marine Chemist certified by the NFPA-appointed Marine Chemist Qualification Board.
- Certified Occupational Hygienist designated by the Australian Institute of Occupational Hygienists.
- Chartered Occupational Hygienist designated by the British Occupational Hygiene Society.

Testing Methodology

With respect to subsection 156(3) of the *OHS Regulations*, the latest version of the *NIOSH Manual of Analytical Methods* may be obtained from www.cdc.gov/niosh. Where a NIOSH method has not been established, the use of another validated sampling method should be considered.

Section 157 – Requirements

157 (1) Every employer must ensure, in respect of each workplace under its control, that
(a) no employee’s exposure to a hazardous substance exceeds the threshold limit value for that substance, as adjusted if necessary to reflect the length of the employee’s work period, or the biological exposure index for that substance;
(b) automated detection and warning systems are in place, if feasible, to alert employees of any potential exposure to a hazardous substance;

(c) hazardous substances are stored

(i) in an area, designated by the employer for that purpose, that is

(A) designed and constructed to provide for the safe containment and protection of its contents,

(B) clearly identified by appropriate signage,

(C) designed and maintained — including through the provision of adequate ventilation and lighting — to allow for its safe occupancy and the safe movement of employees, equipment and material, and

(D) designed and equipped to permit effective emergency response having regard to the nature of each substance being stored, including, if any of the substances is flammable or combustible, by being equipped with a suitable fire suppression system,

(ii) in containers that are designed and constructed to protect persons from the substances' hazardous effects, and

(iii) in a manner that ensures that

(A) the substances and their containers cannot readily fall, become dislodged, suffer damage or be exposed to extreme temperatures, and

(B) if the mixing of multiple substances would create a health or safety hazard to persons, those substances are prevented from mixing in the event of container leakage, breakage or other similar circumstance;

(d) any storage area designated under subparagraph (c)(i) in which a flammable or combustible substance is to be dispensed or transferred also meets the following criteria:

(i) its ventilation conforms to the applicable provisions of National Fire Protection Association publication NFPA 30, Flammable and Combustible Liquids Code,

(ii) its exhaust air is discharged outdoors, to an area in which the exhaust will not pose a risk to the health or safety of any person, and the storage area is provided with makeup air,

(iii) any makeup air duct that passes through a fire separation is equipped with a fire damper that is fitted to close automatically on detection of fire or the arming of a related fire suppression system, and

(iv) any doors to or within the area are self-closing;

(e) hazardous substances are removed from storage and used in as small a quantity as is feasible;

(f) any hazard posed by a hazardous substance, including as a result of its production, storage, handling, use or disposal, is confined to as small an area as is feasible;

(g) signs warning of the presence of hazardous substances are posted in conspicuous places, including all access points to the area in which the substances are present;

(h) any production, storage, handling, use or disposal of a hazardous substance is done in accordance with the safety data sheet for that substance, if any, or another document containing hazard information in respect of that substance;

(i) any handling, storage or use of a hazardous substance that is at risk of igniting from static electricity conforms to the National Fire Protection Association publication NFPA 77, Recommended Practice on Static Electricity;

(j) any words or symbols that identify the contents of a container as a hazardous substance are removed once the container has been completely cleaned of that substance;

(k) if an employee's skin, hair or clothing is likely to become contaminated by a hazardous substance in the course of their work,

(i) a shower is available to them, outside of the accommodations area, for the purpose of decontamination, and

(ii) they are allowed sufficient time during their normal working hours to use the decontamination shower or other cleaning facilities;

(l) appropriate emergency eye-wash stations and showers that conform to and have been installed in accordance with ANSI/International Safety Equipment Association (ISEA) standard Z358.1, American National Standard for Emergency Eyewash and Shower Equipment are provided in any work area where a person's eyes or skin may be exposed to a hazardous substance, having regard to the risk of exposure and the hazard information for that substance;

(m) no person enters any accommodations area while wearing clothing that is likely to have been contaminated by a hazardous substance, other than a space within that area that has been designated by the employer for the removal of contaminated clothing;

(n) any person who handles, cleans or disposes of clothing at a workplace does so in a manner that minimizes exposure of persons to hazardous substances, including by

(i) storing clothing that is wet or likely to have been contaminated with a hazardous substance separately from clothing that is not wet or contaminated, and

(ii) laundering clothing that is likely to have been contaminated with a hazardous substance separately from other clothing;

(o) any use of a device that is capable of emitting energy in the form of electromagnetic waves conforms to the applicable safety code, including any addendums, published by the Department of Health;

(p) any non-destructive testing activity that involves a device that is capable of emitting energy in the form of electromagnetic waves is carried out by a person certified by the Department of Natural Resources' National Non-Destructive Testing Certification Body;

(q) every piping system that contains a hazardous substance is

(i) designed to control static electricity,

(ii) fitted with valves or other safety devices to ensure its safe operation,

(iii) marked using any method, including colour coding or signage, to identify the hazardous substance it contains and, if applicable, the direction of the flow, and

(iv) despite paragraph 87(1)(e), inspected before it is placed in service and then at least once a year; and

(r) if an employee is carrying out work on a piping system that contains a hazardous substance,

(i) the following engineering controls are fitted on pipes as necessary to prevent the inadvertent discharge of the substance:

(A) a blank or blind, in conjunction with valves or other blocking seals that are secured in the closed position to prevent the substance from reaching the blank or blind,

(B) a double block and bleed system, consisting of two valves or other blocking seals that are secured in the closed position and located on each side of a valve

or other mechanism that is secured in the open position to allow for bleed-off between the two seals, or

(C) another engineering control that has been approved by a professional engineer,

(ii) the location of any blank or blind referred to in clause (i)(A) is clearly marked on the pipe and all valves and other seals and mechanisms referred to in clause (i)(A) or (B) are clearly marked to indicate the position they are in, and

(iii) any engineering control referred to in clause (i)(B) or (C) is monitored for leaks throughout the work.

Securing of valves, seals and mechanisms

(2) Each valve or other seal or mechanism referred to in subparagraph (1)(r)(i) must be secured in the open or closed position, as the case may be, using a positive mechanical device that is designed to resist being opened inadvertently, other than as a result of excessive force.

Records of exposure

(3) Every employer must retain all records of exposure referred to in paragraph 205.022(g) (or 210.022(g)) of the Act for 40 years after the day on which the exposure is first documented.

General

The requirements of Part 18: Equipment, Machines and Devices of the *OHS Regulations* apply to equipment used for the handling of hazardous substances, particularly those requirements for competency, use, inspection, testing and maintenance.

TLV Adjustments

With respect to paragraph 157(1)(a) of the *OHS Regulations*, as the TLVs listed in ACGIH are based on 8 hours a day, 40 hours a week, the alternative calculation methods within ACGIH must be used if a person has potential for exposure for longer than that period (e.g., working 21 days with 12 hour shifts with 21 days off).

Automated Detection and Warning Systems

With respect to paragraph 157(1)(b) of the *OHS Regulations*, refer to the requirements and associated guidance under section 23 of the *OHS Regulations* for emergency alert systems.

Handling, Storage and Use of Hazardous Substances

- With respect to paragraphs 157(1)(c), (d), (e), (f), (g), (h) and (i) of the *OHS Regulations*, additional guidance is provided in the following:

- *IMDG Code* provides guidance on separation and segregation of incompatible substances (e.g., oxygen and acetylene).
- *NFPA (1) Fire Code* provides guidance for storage of materials and other hazardous substances, including waste, explosives, flammable and combustible liquids, aerosols and dusts.
- With respect to paragraph 157(1)(d) of the *OHS Regulations*, refer to the requirements and associated guidance for fire and explosion and ventilation under section 26 and Part 16: Ventilation of the *OHS Regulations*, respectively.
- With respect to paragraph 157(1)(i) of the *OHS Regulations*, additional guidance for equipment and material that may collect electric charge, such as fibre-reinforced plastics is provided in *ISO 80079-36 Explosive atmospheres – Part 36: Non-electrical equipment for explosive atmospheres – Basic methods and requirements*.
- Refer also to the requirements and associated guidance for storage and handling of hazardous substances provided for sections 44 and 45 of the *Framework Regulations*.

Static Electricity Hazards for Non-Combustible Liquids and Vapours

With respect to paragraph 157(1)(i) of the *OHS Regulations*, *NFPA 77 Recommended Practice on Static Electricity* also includes requirements for the assessment and control of static electricity ignition hazards from the storage, use and handling of non-combustible liquids and vapours (e.g., wet steam). The NFPA standard should also be applied to those systems.

Emergency Eye-Wash Stations and Showers

With respect to paragraph 157(1)(l) of the *OHS Regulations*, refer to the additional guidance provided in informative appendices A and B of *ANSI/ISEA Z358.1 American Standard for Emergency Eyewash and Shower Equipment*.

Radioactive Materials and Equipment

- With respect to paragraph 157(1)(o) of the *OHS Regulations*, the safety codes and their associated addenda are on the federal Department of Health website.⁸⁴ In addition, the *TDG Act*, *Nuclear Safety and Control Act* and the *Radiation Health and Safety Act* (for NL), as well as their associated regulations, must be consulted for the procurement, licensing, containment, transportation, storage, operation, maintenance and disposal of radioactive materials and devices, including the certification, training and instruction of persons responsible for these materials and devices.
- While the Canadian Nuclear Safety Commission (CNSC) has legislative control of nuclear fuel cycle materials and man-made radionuclides, NORMs are exempt from CNSC jurisdiction, except for their import, export and transportation of the material. NORMs may be found in the liquids and gases from hydrocarbon-bearing geological formations or in water treatment facilities. NORM are regulated onshore (subject to provincial requirements) and offshore

⁸⁴ <https://www.canada.ca/en/services/health/publications/health-risks-safety.html>

(subject to the *OHS Regulations*). As exposure to hazardous substances, including exposure to radiation, is a prescribed risk under the *Accord Acts*, operators and employers are required to develop a program for its management. There should be a program in place for routine monitoring or testing of areas where NORMs may be present. In addition, testing for NORMs should be completed before any intrusive work on equipment is undertaken. Additional guidance on the principles and procedures for the detection, classification and management of NORMs and requirements for transportation are provided in Health Canada's *Canadian Guidelines for the Management of Naturally Occurring Radioactive Materials*.

Qualification and Certification of Non-Destructive Testing Persons

With respect to paragraph 157(1)(p) of the *OHS Regulations*, persons that do not hold the required certification must apply to the *National Non-Destructive Testing Certification Body* of the federal Department of Natural Resources for consideration and approval.

Work on Piping Systems

With respect to paragraph 157(1)(r) of the *OHS Regulations*, additional guidance is provided in UK Health and Safety Executives publication *HSG 253 The safe isolation of plant and equipment*. The following should be considered if implementing this guidance:

- The method of isolation must be an “engineering control” and provide isolation from the hazard. As examples, the use of freeze plugs or hot-tapping methods would not be considered an “engineering control”.
- Refer to the definition of “hazardous substance” in the *Accord Acts*, which includes chemical, physical and biological substances. If the isolation is on equipment containing hazardous energy, refer also to the requirements of subsection 144(3) of the *OHS Regulations*.
- With respect to isolations in confined spaces, refer to paragraph 133(1)(g) and subsection 133(2) of the *OHS Regulations*.
- With respect to clause 157(1)(r)(i)(C) of the *OHS Regulations*, refer to the definition of “professional engineer”. When a professional engineer is approving an engineering control, they should also be reviewing and approving the specific isolation procedures for the particular piping section being isolated.
- With respect to subparagraphs 157(1)(r)(i) and (iii) of the *OHS Regulations*, isolations should either be a “positive isolation” or a “proved isolation” as described in Figure 4 of the referenced standard. “Non-proved isolations” should not be used as they have no means to confirm the effectiveness of the valve closure before breaking into the system and no means to monitor. The standard also states that a single block and bleed should not be used as an isolation method for work on a live plant containing hazardous substances unless a risk assessment has shown it to be acceptable (e.g., small amount of inventory with low possibility of escalation and with very low potential for harm if a release were to occur).
- At any time, any potential exposures to hazardous substances must not exceed the TLV or the biological exposure index according to paragraph 157(1)(a) of the *OHS Regulations*.

Section 158 – Identification

158 (1) For the purpose of paragraph 205.022(c) (or 210.022(c)) of the Act, any container that contains a hazardous substance — other than a hazardous product — is to be clearly marked with the substance’s generic name and hazardous properties.

Hazard information

(2) If a safety data sheet or other document that identifies, and sets out hazard information in respect of, a hazardous substance — other than a hazardous product — that is stored, handled or used at a workplace may be obtained from the supplier by the employer with control over the workplace, the employer must obtain that document and make it available to every employee at the workplace.

Transportation of Dangerous Goods

Any documentation accompanying the hazardous substances that are being transported by air or by water (marine) must also comply with the *TDG Act*. As such, any requirements with respect to concurrent transport of dangerous goods and persons on a passenger craft must be adhered to.

Availability and Use of Hazard Information

- With respect to subsection 158(2) of the *OHS Regulations*, hazard information, including safety data sheets, labels or other documents, should account for any differences in language at the workplace and should be made available to those that would require to use them for normal or emergency operations.
- With respect to subsection 158(2) and Part 10: Work Permit of the *OHS Regulations* and the *Accord Acts*⁸⁵, if a hazardous substance is being used or generated as part of the work, persons must be provided with the necessary information to ensure their health and safety. This would typically be accomplished by ensuring that persons review the safety data sheets before doing the work.

Sections 159 – 161 – Labelling and Safety Data Sheets

Hazardous products – labelling

159 (1) Paragraph 205.022(d) (or 210.022(d)) of the Act does not apply in respect of
(a) a manufactured article, as defined in section 2 of the Hazardous Products Act;
(b) wood or any product made of wood;

⁸⁵ C-NLAAIA 205.013(c), 205.019(1)(d); CNSOPRAIA 210.013(c), 210.019(1)(d)

(c) hazardous waste — or the container that contains it — if a sign that clearly and legibly sets out the product identifier and up-to-date hazard information in respect of the waste is posted in a conspicuous place near it;

(d) a portable container containing a hazardous product that is filled from a container that is labelled in accordance with the Act and these Regulations if

(i) the hazardous product is to be used immediately, or

(ii) the hazardous product is to be used only during the work shift in which the portable container is filled, it remains under the control of the employee who filled the portable container and is used only by them and the portable container has applied to it a label that sets out the product identifier for the product;

(e) a laboratory sample, as defined in subsection 5(1) of the Hazardous Products Regulations, that is not in a container received from the supplier, as defined in section 2 of the Hazardous Products Act, if the hazardous product in question is identified with sufficient clarity to permit employees to obtain hazard information in respect of it;

(f) a hazardous product that the employer intends to export — or the container that contains it — if a sign that clearly and legibly discloses the following information is posted in a conspicuous place near the product:

(i) the product identifier for the hazardous product,

(ii) up-to-date hazard information in respect of the hazardous product, and

(iii) the fact that a document referred to in paragraph 205.022(e) (or 210.022(e)) of the Act or paragraph 160(1)(c) in respect of the hazardous product is available at the workplace;

(g) any of the following hazardous products, if a sign that clearly and legibly discloses the product identifier is posted in a conspicuous place near the product:

(i) a fugitive emission produced at the workplace,

(ii) a hazardous product in a process or reaction vessel,

(iii) a hazardous product in a pipe or piping system, or

(iv) a bulk shipment, as defined in subsection 5.5(1) of the Hazardous Products Regulations, that has been received at the workplace and has not been transferred to a container; or

(h) any other hazardous product that is not in a container, if a sign that clearly and legibly discloses the information referred to in subparagraphs (f)(i) to (iii) is posted in a conspicuous place near the product.

Requirements

(2) For the purpose of paragraph 205.022(d) (or 210.022(d)) of the Act, the information that each label must disclose is the information that is required to be disclosed on a label under the Hazardous Products Regulations and the hazard symbols that the label must have displayed on it — and the manner of displaying those symbols — are those required by those Regulations.

Exceptions

(3) Despite subsection (2), the label need only set out

(a) the product identifier and up-to-date hazard information in respect of hazardous waste or the container that contains it;

(b) the information referred to in subparagraphs (1)(f)(i) to (iii) in respect of

(i) a hazardous product that is produced at the workplace or the container that contains it, or

(ii) a container that is not received from a supplier, as defined in section 2 of the Hazardous Products Act, or the hazardous product that it contains

(iii) a hazardous product or container that was previously labelled in accordance with subsection (2) if that label became illegible or was lost, or

(iv) a hazardous product or container for which the employer is actively seeking a label that conforms to subsection (2); or

(c) the information referred to in subparagraphs (1)(f)(i) and (ii) in respect of

(i) a product listed in Schedule 1 to the Hazardous Products Act or the container that contains it, or

(ii) a nuclear substance, as defined in section 2 of the Nuclear Safety and Control Act or the container that contains it.

Hazardous products - safety data sheets

160 (1) Paragraph 205.022(e) (or 210.022(e)) of the Act does not apply in respect of

(a) a manufactured article, as defined in section 2 of the Hazardous Products Act;

(b) wood or any product made of wood;

(c) the following hazardous products, if the employer makes available a document containing the product identifier and detailed, up-to-date hazard information in respect of the product:

(i) a product listed in Schedule 1 to the Hazardous Products Act, or

(ii) a nuclear substance, as defined in section 2 of the Nuclear Safety and Control Act;

(d) a hazardous product that is produced at the workplace and is a fugitive emission or an intermediate product undergoing reaction within a process or reaction vessel;

(e) hazardous waste; or

(f) any hazardous product for which the employer is actively seeking the document referred to in that paragraph, as long as any label affixed to, printed on or attached to the product or container that contains information about the product is not removed, defaced, modified or altered.

Information required

(2) The information that must be disclosed for the purpose of subparagraph 205.022(e)(v) (or 210.022(e)(v)) of the Act is all information not referred to in subparagraphs 205.022(e)(i) to (iv) (or 210.022(e)(i) to (iv)) of the Act that is required to be included on a safety data sheet under the Hazardous Products Regulations.

Exemptions from requirement to disclose

161 (1) Subject to subsection (2), if an employer has filed a claim under subsection 11(2) of the Hazardous Materials Information Review Act for an exemption from a requirement under the Act to disclose information, it must disclose in place of that information on any safety data sheet or other document, label or sign

(a) if there has been no final determination in respect of the claim, the date on which the claim for exemption was filed and the registry number assigned to the claim under section 10 of the Hazardous Materials Information Review Regulations; or

(b) if the final determination in respect of the claim is that the claim is valid, a statement that an exemption has been granted and the date on which the exemption was granted.

Product identifier

(2) If the claim for exemption is in respect of a product identifier, the employer must disclose, in place of the product identifier on any safety data sheet or other document, label or sign, a code name or code number assigned by the employer to identify the hazardous product.

Additional guidance on safety data sheets and labelling is provided on the [Health Canada](#) website and the [CCOHS](#) website.

Section 162 – Instruction and Training

162 The instruction and training that every employer must provide to its employees includes

(a) if the employee is likely to handle or be exposed to a hazardous substance, training with respect to the content required on labels and safety data sheets and the purpose and significance of that content;

(b) if the employee installs, operates, maintains or repairs a piping system that contains a hazardous substance, or any component of such a system, training with respect to the significance of the colour-coding, signage or other markings referred to in subparagraph 157(1)(q)(iii); and

(c) if the employee is one referred to in paragraph (a) or (b), instruction with respect to procedures for the safe storage, handling, use and disposal of the hazardous substances to which they may be exposed, including procedures to be followed in an emergency involving a hazardous substance or when a fugitive emission is present.

- Pursuant to the *Accord Acts*⁸⁶, all persons must be trained in the *Globally Harmonized System of Classification and Labelling of Chemicals (GHS)* and as such, persons should have WHMIS 2015 training or equivalent. This training must be supplemented with awareness of the

⁸⁶ C-NLAAIA 205.013(f)(h)(k), 205.019(1)(j); CNSOPRAIA 210.013(f)(h)(k), 210.019(1)(j)

hazardous substances in use at the particular workplace and any associated instruction and training on particular hazardous substances.

- Additional instruction and training must consider the following:
 - Any recommendations stemming from the investigation and assessment done pursuant to section 156 of the *OHS Regulations*, including awareness of new hazardous substances and additional instruction and training for using those new substances, as recommended.
 - Any updated information on safety data sheets, including awareness of the changes and additional instruction and training, if necessary.
 - If specific training should also be delivered (e.g., NORM, H₂S, radiation safety awareness, gas monitoring training) to provide additional awareness in the safe storage, handling, use and disposal of specific hazardous substances.
- Guidance for *WHMIS/GHS*, *TDG - Air* and *TDG - Marine* training is provided in the COP TQOP.

Section 163 – Information Required in an Emergency

163 For the purposes of subsection 205.023(1) (or 210.023(1)) of the Act, a medic is a prescribed medical professional.

No guidance required at this time.

PART 32: DIVING

Section 164 – Definitions

164 The following definitions apply in this Part.

decompression table means a table or set of tables that shows a schedule of rates for safe descent and ascent and decompression stop times, having regard to the breathing mixture to be used by a diver during a dive.

dive contractor means an employer that exercises direction and control over diving operations at a workplace.

dive team means all divers, standby divers, dive support personnel and dive supervisors on a dive project.

dive safety specialist means a person designated under subsection 168(1).

This Part provides specific requirements for dive programs and in addition to it, the *OHS Regulations* apply in their entirety to such programs. Pursuant to Part III.1 of the *Accord Acts*, a workplace includes “any dive site from which, and any underwater area at which, a diving operation is done by an employee in connection with a work or activity for which an authorization has been issued.” Pursuant to Part III.1 of the *Accord Acts*, a dive support vessel is a marine installation or structure. In addition to the definitions provided in this Part, refer to the definitions of “diving operation”, “dive project”, “dive site”, “light dive craft” and “specialized dive physician” in Part 1 of the *OHS Regulations*. In addition, there are sections of the *Framework Regulations* that apply to diving and they need to be considered.

Section 165 – Diving Program

Occupational health and safety program

165 The risks associated with diving operations are prescribed risks for the purpose of paragraph 205.02(2)(a) (or 210.02(2)(a)) of the Act and the occupational health and safety program in respect of a workplace from which a dive project is carried out must include

- (a) procedures for consulting with employees who perform a variety of roles in the diving operations, including members of the dive team, with respect to the management of risks to divers’ health and safety;***
- (b) procedures for obtaining the agreement of the dive safety specialists designated in respect of the dive project with respect to the hazards identified, the risks assessed and the hazard control measures to be implemented;***
- (c) procedures for safely carrying out each task associated with the dive project, including with regard to the equipment to be used;***
- (d) procedures for ensuring divers’ safe and controlled entry into and exit from the water;***
- (e) procedures for carrying out decompression in a manner that will minimize decompression sickness or other adverse effects on divers, including having regard to repetitive factor and residual inert gases;***
- (f) procedures for treating decompression sickness, including decompression sickness that results from planned or unplanned omitted decompression, and communicating with a specialized dive physician in respect of that treatment;***
- (g) procedures for responding to hazardous weather or water conditions;***
- (h) procedures for aborting and resuming dives;***
- (i) procedures for calculating — in a manner that allows for leakage, waste and other unplanned depletions — the quantities of breathing mixtures required by divers, including for both primary and secondary use and for therapeutic treatment;***
- (j) procedures for storing breathing mixtures that, among other things, identify a single Canadian or international standard to be used for the colour-coding of all gas cylinders and quads or other banks associated with the dive project;***
- (k) procedures for providing breathing mixtures to divers;***

(l) procedures for ensuring that all materials or objects introduced into or used in diving bells or compression chambers do not contain or produce gases or vapours that may be harmful to divers;

(m) procedures for maintaining divers' thermal balance and comfort, including by heating their breathing mixtures if necessary and ensuring the continued supply of heat in the event of any failure of the primary thermal control system;

(n) procedures for installing barriers or isolating energy sources as necessary to protect divers from contact with hazards;

(o) procedures for ensuring that the dive contractor is made aware of any seismic work being carried out in the vicinity of the workplace that may pose a risk to divers' health or safety and for communicating with the persons carrying out that seismic work;

(p) procedures for assessing seabed or seawater contamination levels in areas in which contamination is a known hazard; and

(q) if the workplace is a dynamically positioned vessel,

(i) procedures for responding to changes in its station keeping status,

(ii) procedures for operating in close proximity to marine installations or structures or other physical obstacles,

(iii) procedures for guarding against thruster wash and suction effect,

(iv) procedures for preventing equipment entanglement, and

(v) procedures for repositioning the vessel that address, among other things, the maximum increments for repositioning and heading change while divers are in the water.

Hazard Identification and Risk Assessment

With respect to section 165 of the *OHS Regulations* and to the *Accord Acts*⁸⁷, a project-specific hazard identification and risk assessment must be carried out during the planning stage of the project by the dive contractor as follows:

- It should include participation from all workplace parties, including the operator, DSSs and other key contractors that may be involved. The dive team, marine crew and any other pertinent personnel should also be engaged and consulted as part of the assessment.
- It should be specific to the site of operations and the particular diving project and should account for the hazards that may exist, as well as the hazards that may develop during the course of the work and the actions necessary to control and mitigate any identified hazards.
- It should be communicated and made readily available to all workplace parties to ensure they are fully aware of the risks associated with the operation.
- The hazard identification and risk assessment should be amended, as necessary, to address any changes to the initial work scope or unplanned operations that may arise while the diving operation is underway.
- Additional guidance on factors to be considered during the risk assessment is provided in the following:

⁸⁷ C-NLAAIA 205.009(2), 205.015(2)(a) and 205.02(2)(a); CNSOPRAIA 210.009(2), 210.015(2)(a) and 210.02(2)(a)

- *IMCA D014 International Code of Practice for Offshore Diving*
- *CSA Z1002 Occupational health and safety – Hazard identification and elimination and risk assessment*
- *IOGP RP 411 Recommended Practices for Diving Operations*

General

- Refer to Part 18: Equipment, Machines and Devices, Part 27: Hazardous Energy and Part 28: Compressed Gas of the *OHS Regulations* for requirements for equipment, including pressure equipment, piping systems, compressed gases and hazardous energy. In addition, refer to requirements for competency, use, inspection and maintenance.
- Refer to the *Framework Regulations* and the associated *Guideline for the Framework Regulations* for other requirements for diving.

Diving Procedures

- With respect to section 165 of the *OHS Regulations*, procedures should effectively manage all risks associated with the diving operation and be based on recognized standards/guidelines, incorporating best practices such as those developed by:
 - IMCA
 - Diving Medical Advisory Committee
 - UK Health and Safety Executive
 - IOGP
 - Other recognized bodies
- All operational activities should be planned, organized, documented, performed and verified.
- Procedures and equipment should also consider any requirements of classification society rules in respect of the ship's type and classification. This includes any associated IMO circulars or resolutions and recommendations found in *IOGP RP 411 Recommended Practices for Diving Operations*.

Consultation

With respect to paragraph 165(a) of the *OHS Regulations*, procedures should demonstrate that personnel are engaged in the discussion surrounding the safety decisions and the risks to which they are subjected, and there should be a mechanism to allow for feedback. Examples of where the personnel should be engaged are as follows:

- Participation in risk assessments.
- Assisting in development of safe work procedures.
- Inclusion in safety discussions.
- Review and input to the dive project plan, etc.
- Post dive project review for lessons learned and improvement.

Given the nature of project work and the introduction of new or different employees, every effort should be made to consult with every employee that will be on the project.

Procedures for Each Task

- With respect to paragraph 165(c) of the *OHS Regulations*, procedures should cover all key work activities, including those that are routine and non-routine. Key work activities may include the type of diving (e.g., surface-supplied, saturation) and the associated work scopes to be done (construction, maintenance, inspection).
- The dive contractor should also consider topics addressed in section 7 of *IMCA D014 - International Code of Practice for Offshore Diving*, including all referenced guidance notes.

Decompression Procedures

With respect to paragraph 165(e) of the *OHS Regulations*, decompression procedures and schedules should be used that are derived from the procedures and schedules of an organization that are accredited to produce decompression methods used for occupational or military diving application. Decompression methods used in the recreational diving industry should not be considered for occupational diving practices. The diving contractor should also consider requirements for proximity to (re)compression chambers following surfacing in DMAC 22 *Proximity to a Recompression Chamber After Surfacing* and general requirements in Section 8.2 of *NORSOK U-100 Manned Underwater Operations*.

Adverse Physical and Environmental Condition Procedures

With respect to paragraph 165(g) of the *OHS Regulations*, procedures should include limits for working in adverse physical and environmental conditions and should account for the capability of the vessel or installation. Additional guidance is provided in section 7.4 of *IMCA D014 - International Code of Practice for Offshore Diving*.

Quantity of Breathing Mixtures

With respect to paragraph 165(i) of the *OHS Regulations*, guidance on calculating quantities of breathing mixtures are provided in *IMCA D050 - Minimum Quantities of Gas Required Offshore*. Project-specific quantities should be based on a risk assessment.

Storing of Breathing Mixtures

With respect to paragraph 165(j) of the *OHS Regulations*, additional guidance for the colour-coding and storage of gas cylinders, quads, etc. associated with a dive project is provided in the following:

- *IMCA D043 - Marking and Colour Coding of Gas Cylinders, Quads and Banks for Diving Applications*

- *IMCA D023 – Diving Equipment Systems Inspection Guidance Note for Surface Orientated (Air) Diving Systems*
- *IMCA D024 - Diving Equipment Systems Inspection Guidance Note for Saturation (Bell) Diving Systems*
- *IMCA D040 - Diving Equipment Systems Inspection Guidance Note for Mobile/Portable Surface Supplied Systems*
- *IMCA D009 - Protective Guarding of Gas Cylinder Transport Containers (Quads)* (should also be considered when developing procedures for gas storage).

Quality of Breathing Mixtures

With respect to paragraphs 165(k) and 172(1)(i) of the *OHS Regulations*, procedures should be in place for:

- handling and managing breathing gases, including mixing, blending and transfer of gases; and
- maintaining quality control of breathing gases, including analysis for correct oxygen and balance gas content and purity standards.

Hazardous Substances in Diving Bells and Compression Chambers

With respect to paragraph 165(l) of the *OHS Regulations*, in addition to establishing procedures to ensure that all materials or objects introduced into or used in diving bells or compression chambers do not contain or produce gases or vapours, consideration should be given to providing a means of monitoring the bell atmosphere for hydrocarbons and H₂S as recommended in section 6.25 of *IMCA D024 - Diving Equipment Systems Inspection Guidance Note for Saturation (Bell) Diving Systems*. The living chambers and other compression chambers should also be monitored for hazardous substances, depending on risk/potential presence.

Thermal Balance and Comfort

With respect to paragraph 165(m) of the *OHS Regulations*, thermal control procedures should ensure that all dive team members are fully aware of the hazards of cold water on a diver (refer to section 167 of the *OHS Regulations*) and the associated emergency response to any loss of heating. Procedures should address the capacity and accuracy of the thermal control systems to ensure thermal balance and comfort for the divers during all phases of a normal dive, including sufficient heating supply redundancy and breathing mixture heating redundancy.

Isolations of Energy Sources

With respect to paragraph 165(n) of the *OHS Regulations*, procedures should be developed based on appropriate hazard identification and risk assessment and consider the reliability of remote isolations and the integrity and testing of such isolations. Additional guidance is provided in *IMCA D044 - Guidelines for Isolation and Intervention: Diver Access to Subsea Systems*.

Seismic Activity

With respect to paragraph 165(o) of the *OHS Regulations*, any potential planned seismic activity must be accounted for during project planning and measures should be implemented in procedures which consider the guidance in *DMAC 12 Safe Diving Distance from Seismic Surveying Operations*.

Seabed/Seawater Contamination

With respect to paragraph 165(p) of the *OHS Regulations*, additional guidance is provided in *IMCA D021 - Diving in Contaminated Waters*. Refer also to Part 31: Hazardous Substances of the *OHS Regulations*.

Dynamic Positioning

With respect to paragraph 165(q) of the *OHS Regulations*, additional guidance is provided in *IMCA D010 - Diving Operations from Vessels Operated in Dynamically Positioned Mode*, with particular attention paid to umbilical management.

Section 166 – Prohibitions

166 It is prohibited to carry out the following diving activities at or from any workplace:
(a) diving using a self-contained underwater breathing apparatus (SCUBA); and
(b) surface-supplied diving using a breathing mixture that contains helium.

It should also be noted that types of diving systems commonly referred to as 'SCUBA replacement' are also included under the prohibition of SCUBA. Any SCUBA that is used in the offshore that is not related to petroleum activities, that is used near shore or that is used in a training facility used by offshore workers is not regulated by *Regulator*. Medical treatment is not considered 'diving', or a 'diving activity' to which the prohibition applies. The provision does not prohibit the use of a mixture that contains helium for medical treatment.

Section 167 – Instruction

167 The instruction that every dive contractor must provide to all dive team members includes instruction on the hazards of diving in cold water and the appropriate emergency response to any loss of heating to a diver, their breathing mixture or their equipment.

Given the cold water temperatures experienced in the *Offshore Area*, particularly with respect to saturation diving, a loss of heating or breathing air supply to a diver is an IDLH situation. Protocols and instructions should be developed with diver involvement and communicated at the start of the program. For example, this should include the communication of measures to prevent freezing of the breathing air supply (e.g., heating, pre-use inspections of equipment and recognition of signs of impending freezing). The dive contractor should consider making it a requirement in their protocols that all divers and supervisors log their review of protocols and instructions on the first dive of each offshore rotation. Refer also to requirements and associated guidance for thermal stress in section 40 of the *OHS Regulations*.

Section 168 – Dive Safety Specialists

168 (1) The operator of a workplace from which a dive project is to be carried out and the dive contractor that exercises direction and control over the diving operations at that workplace must each designate in writing a competent person as a dive safety specialist, to be present at the workplace for the duration of the dive project and be available during all dives to advise on any matter related to the safety of the project.

Requirements

(2) Each dive safety specialist must

(a) conform to the competencies set out for offshore dive safety specialists in CSA Group standard Z275.4, Competency standard for diving, hyperbaric chamber, and remotely operated vehicle operations; and

(b) have no other duties that will interfere with their ability to provide prompt advice.

Independence

(3) The dive safety specialist designated by the operator must be independent of the dive contractor and the dive safety specialist designated by the dive contractor must be independent of the operator.

Different persons

(4) The same person may not be designated as a dive safety specialist by both the operator and dive contractor in respect of the same dive project.

Dive Safety Specialist - Operator

The operator DSS is an important position in the Canadian offshore diving regulatory regime. Once a dive project is proposed, the operator project team will need the support of the DSS. The role is

important for communicating critical knowledge of diving to the operator's project team, which may lack understanding of diving risks, and for providing diving technical support to the project, engineering, and worksite personnel to plan and execute diving activities to required standards.

When selecting an individual to fill this position, the operator should be satisfied through a review of their qualifications and experience that the DSS has the competence relevant to the category and type of diving operation proposed for the program. The DSS should be engaged sufficiently early and throughout the duration of the dive program to allow for full evaluation of the project engineering, familiarization with work scopes and participation in risk assessments. The DSS must be involved in the review of the contractor's Dive Project Plan, Safety Plan and project-specific procedures and review of the dive contractor's project documentation plans, including crewing, equipment selection, daily dive plans, dive logs and safety-related incidents and reports.

The DSS is usually the operator's signing party on a permit to work and must verify that planned barriers and isolations are in place prior to diving. At the dive site, the DSS should monitor the dive contractor to ensure compliance with the Dive Project Plan, and should specifically:

- attend project safety and daily meetings;
- attend worksite safety and operational meetings;
- ensure all relevant certification is current;
- ensure that relevant audits and inspections have been completed and that action items have been satisfactorily addressed;
- ensure any issues raised during the hazard identification and risk assessment processes or safety meetings are addressed prior to starting the relevant phase of work;
- verify that work procedures and management of change processes are followed; and
- report on the work done, lessons learned, and recommended improvements for future operations.

It is advisable for the operator to clarify this role and these responsibilities in a role description, contract, etc. prior to commencement of the project.

The operator's DSS should not be an employee of the dive contractor or be on secondment from the dive contractor. It is acceptable for the operator's DSS to have worked previously with the dive contractor provided it was in the past and they are no longer on hire or contract with the dive contractor.

Dive Safety Specialist – Dive Contractor

The dive contractor's DSS should be a senior person onboard the diving support vessel, such as the offshore construction manager or another suitably qualified person. The dive contractor's DSS must be fully fluent in the dive contractor's policies and procedures and should be very familiar with the condition of the vessel(s) and the capabilities and limitations of the diving system.

Certification of Dive Safety Specialists

Certification for DSSs should be obtained from the DCBC.

Letter from Operator Dive Safety Specialist

With respect to paragraph 165(b) of the *OHS Regulations*, an application for authorization should include a letter from the operator's DSS, attesting to the fact that this review has been completed and that they are satisfied with the plans for the program.

Section 169 – Emergency Response Plan

169 (1) The emergency response plan developed under section 18 in respect of a workplace from which a dive project is carried out must include provisions developed by the dive contractor — in consultation with the dive safety specialists for the project and, as the case may be, the installation manager referred to in section 193.2 (or 198.2) of the Act or the offshore construction manager and dive vessel master — that

- (a) set out procedures for responding to all vessel or dive system emergencies that have the potential to compromise divers' safety;***
- (b) set out procedures for responding to chamber system emergencies, including fire, loss of pressure, atmospheric contamination and life-support system malfunction;***
- (c) set out procedures to be followed in the case of any loss of communication;***
- (d) set out procedures for ensuring that any emergency at the workplace does not impede the provision of life support to divers, including during evacuation, recovery, decompression and observation for decompression sickness;***
- (e) set out procedures in relation to the rescue of a diver;***
- (f) if the dive project involves saturation diving, set out procedures*
 - (i) for locating and recovering a lost diving bell,***
 - (ii) for responding to the loss of atmospheric pressure within a diving bell, and***
 - (iii) in relation to emergency hyperbaric evacuation, including the recovery and transport to a hyperbaric reception facility of self-propelled hyperbaric lifeboats, their reception at that facility and the replenishment of resources on the lifeboats; and*****
- (g) address any other matters that are necessary for preparing for and responding to emergencies that have the potential to compromise divers' safety.***

Procedures

(2) The dive contractor must ensure that detailed emergency response procedures covering all reasonably foreseeable emergencies are readily available to all persons at the workplace who may have a role in carrying them out.

Availability of plan

(3) In addition to conforming to subsection 18(3), every dive contractor must ensure that the emergency response plan for the workplace from which the dive project for which it exercises direction or control over diving operations is carried out is made readily available to all persons, including those not at the workplace, who may have a role in responding to a dive emergency.

Emergency Response Plan

Because of the coordination required with other contractors at the workplace, the emergency response plans of the operator and all contractors should be combined. Guidance on emergency response plans, in general, is provided under section 18 of this Guideline. Emergency response plans for diving-related emergencies must consider the results of the risk assessment required by section 165 of the *OHS Regulations* and should consider the guidance provided in Section 9 of *IMCA D014 - International Code of Practice for Offshore Diving*.

Hyperbaric Evacuation and Recovery

With respect to subparagraph 169(1)(f)(iii) of the *OHS Regulations*, hyperbaric evacuation and recovery plans should be clear and concise, and follow industry best practices as described in *IMCA D052 - Guidance on Hyperbaric Evacuation Systems* and *IOGP Report 478 – Performance of Saturation Diving Emergency Hyperbaric Evacuation and Recovery*. Refer also to the requirements for a self-propelled hyperbaric lifeboat under paragraph 172(3)(f) of the *OHS Regulations*. Plans should incorporate the following:

- The location and depth of the work.
- The means to retrieve self-propelled hyperbaric lifeboats should be realistic and demonstrated to be effective (e.g., towing trials, mating trials, drills, calculations).
- It should be based on the worst-case scenario of evacuation from a diving vessel (e.g., both diving bells deployed and all divers evacuated).
- A description of equipment critical to safety in the hyperbaric evacuation system, along with reference to associated design standards, performance objectives, and maintenance, inspection and testing requirements. This should include:
 - the hyperbaric evacuation system, including hyperbaric lifeboats and the hyperbaric reception facility;
 - onboard life support equipment and associated capacity; and
 - a list of dependent systems which support the hyperbaric evacuation system.
- The number of personnel required and their associated competency, including those involved with operating the hyperbaric reception facility. The hyperbaric reception facility should have local standby crew of sufficient number to successfully run operations and provide support in an emergency. The intent being that resources are available in a timely manner (e.g., resources available locally in an emergency rather than relying on out-of-province or out-of-country personnel).
- A description of and reference to procedures for the launch, support, recovery of chamber occupants and support crew of the hyperbaric evacuation system(s).

- A description of and reference to procedures for the recovery to, and transfer into, a dedicated hyperbaric reception facility, either fixed or portable, for final controlled decompression.
- A description of and reference to the capability and associated procedures for providing specialized medical intervention inside the hyperbaric reception facility should it be required.

Section 170 – Emergency Drills and Exercises

170 The plan established under section 30 for any workplace from which a dive project is carried out must include provisions, developed by the dive contractor, requiring the conduct of exercises and drills with respect to all reasonably foreseeable dive emergencies, including

(a) diver evacuation drills — including, if the dive project involves saturation diving, drills involving the boarding of a self-propelled hyperbaric lifeboat — to be conducted prior to the first dive being carried out under the dive project and then at least once a month;

(b) exercises involving the simulation by the members of the dive team of the procedures for dealing with a diver who has suffered injury or decompression sickness, including communication with a specialized dive physician, to be conducted at least once a month;

(c) if the dive project involves the use of dynamic positioning equipment, drills completed on the diving vessel simulating the loss of dynamic positioning capability, to be conducted at least once a month;

(d) if the dive project involves saturation diving,

(i) drills involving the location and recovery of a lost diving bell, to be conducted prior to the first dive being carried out under the dive project and then at least once every three months, and

(ii) drills involving the launch and manoeuvring of self-propelled hyperbaric lifeboats, to be conducted at least once every six months; and

(e) drills or exercises in respect of all other reasonably foreseeable diving emergencies, to be conducted at least once a month.

Drills should be practical wherever possible, involving all necessary personnel to test the adequacy of procedures, interfaces, communications and equipment. Before the start of the diving operation, all personnel should be familiar with, and drilled in, their tasks in connection with potential emergencies. Drills should include the emergency response scenarios under section 165 of the *OHS Regulations*. Reference should also be made to the guidance on emergency response drills and exercises provided under section 30 of this Guideline. Additional guidance is provided in the following:

- *IMCA C013 - First Response and Other Emergency Drills.*
- Section 9 of *IMCA D014 - International Code of Practice for Offshore Diving.*
- Section 3.9 of *IMCA M103 – Guidelines for the Design and Operation of Dynamically Positioned Vessels.*
- *IMCA M117 - Guidelines for the Training and Experience of Key DP Personnel.*

With respect to subparagraph 170(d)(ii) of the *OHS Regulations*, hyperbaric lifeboats should be launched at a point in time preceding the dive project, such that the six-month requirement will not be exceeded at any point during the duration of the dive project.

Section 171 – Dive Project Plan

171 (1) Every dive contractor must, in respect of each dive project for which it exercises direction or control over the diving operations, in consultation with the dive safety specialists for the project and, as the case may be, the installation manager referred to in section 193.2 (or 198.2) of the Act or the offshore construction manager and dive vessel master, establish, maintain and implement a written dive project plan that sets out, in detail, all operational and safety elements of the proposed dive project, including

(a) a description of each dive to be carried out that includes an indication of

(i) the diving technique to be used,

(ii) the tasks to be carried out,

(iii) any specialized equipment to be used,

(iv) the estimated and maximum time to be spent at each depth,

(v) the number of divers involved, and

(vi) the hours each diver will be expected to work, including the frequency and duration of their breaks;

(b) the composition of the dive team and the qualifications and any specialized training required of its members;

(c) the hierarchy of command for the project;

(d) a list of legislation, standards and codes of practice that are applicable to any aspect of the dive project;

(e) a list of all vessels to be used in the dive project, including rescue vessels to be on standby;

(f) the decompression tables to be used;

(g) the types of equipment, including personal protective equipment, that are to be worn or used by members of the dive team and the quantity of each that is required to ensure sufficient availability for standby divers;

(h) procedures, approved by a specialized dive physician, for carrying out the medical checks referred to in paragraphs 172(2)(b) and (3)(b);

(i) schematic diagrams indicating, for each vessel to be used, the distance at various depths from a diver to the vessel's propulsion system components and other hazards to the diver and their umbilical, as well as the corresponding safe umbilical lengths;

(j) a description of the diving system and any dynamic positioning equipment to be used;

(k) a description of the potential failure modes of the diving system and any dynamic positioning equipment to be used, the consequences of such failures and the mitigation measures to be taken, including an indication of which of the system's or equipment's components require redundancy, as determined on the basis of a failure modes and effects analysis;

(l) schedules for inspecting the diving system and its components and the positions of those responsible for carrying out those inspections;

- (m) a description of all subsea lifts planned;***
- (n) the means of communication to be used among members of the dive team and employees on the bridge, at the dive control station and at the dynamic positioning control station, and to support the provision of medical and emergency response services, including secondary means to be used in the case of a failure of the primary means or a loss of power, and procedures to be followed in the case of a total loss of communication;***
- (o) a copy of the emergency response plan developed in respect of the workplace under section 18;***
- (p) the method by which the dive project plan is to be communicated to the dive team and any other persons who may be affected by the plan;***
- (q) procedures for managing any changes that require deviation from the plan; and***
- (r) any other information that is necessary to plan for safe diving operations.***

Dive team

- (2) For the purpose of paragraph (1)(b), the composition of the dive team must be determined having regard to the risk assessment carried out in accordance with the occupational health and safety program and that team must include***
- (a) no fewer than two dive supervisors on shift at the dive control station at all times during a dive, with the exception of breaks, during which one supervisor may be replaced at the dive control station by another competent person;***
 - (b) sufficient dive support personnel to support the divers and operate and maintain all equipment; and***
 - (c) in the case of surface-supplied diving, sufficient divers to ensure the availability of standby divers who satisfy the requirements set out in paragraph 172(2)(c).***

Means of communication

- (3) All means of communication referred to in paragraph (1)(n) must be dedicated and continuous and, if used between a dive supervisor and a diver, must***
- (a) have sufficient sound quality to permit breathing and speech to be clearly heard without distortion;***
 - (b) if the diver is using a breathing mixture that contains a substance that distorts the voice, be equipped with a voice descrambler; and***
 - (c) be equipped with a recording device that continuously records all transmissions while a dive is in progress.***

Dive Project Plan

With respect to the subsection 171(1) of the *OHS Regulations*, the following is noted with respect to the dive project plan:

- It must accompany an application for authorization to do diving activities and supplement the operator's program documentation that is submitted as part of the application pursuant to paragraph 8(j) of the *Framework Regulations*.
- The scale and complexity should be proportionate to the scope of the dive project and should provide a sufficient level of detail to allow a reader to fully understand the planned approach to the dive project, without going into the minute details that would be included in the specific procedures.
- The dive project plan should contain sufficient detail to provide an overview of the various work scopes proposed for the project and the diving techniques to be used, including all of the requirements listed under paragraph 171(1)(a) of the *OHS Regulations*. The specific underwater tasks and activities the diver is being deployed to do for the project should be adequately described, including references to the dive contractor's procedures and task plans. Examples are as follows:
 - Installing, repairing or inspecting subsea systems and structures.
 - Welding and cutting.
 - Bolting and use of hydraulic/pneumatic tools.
 - Using inspection and non-destructive examination equipment.
 - Seabed excavation.
 - Rigging and lifting underwater.
- With respect to paragraph 171(1)(c) of the *OHS Regulations*, an organizational chart should be provided.
- With respect to paragraph 171(1)(d) of the *OHS Regulations*, the legislation and latest codes of practice are provided on the *Regulator's* websites⁸⁸. In addition, the legislation, standards and codes of practice are referred to in applicable sections of this Guideline. The dive project plan must clearly list the industry standards and codes of practice that are being applied to the program. For example, this list should include:
 - IMCA guidance notes, specifically *IMCA D014 - International Code of Practice for Offshore Diving*.
 - Codes and standards related to dive system and marine vessel (IMO and classification society rules).
 - Codes and standard related to training and competency (dive crew, technical crew, marine crew).
- With respect to paragraph 171(1)(g) of the *OHS Regulations*, any equipment required under Part 8: Personal Protective Equipment of the *OHS Regulations* and any other equipment applicable to diving in the area of operation (e.g., neck dams, helmet shrouds, hot water systems) should be described.
- With respect to paragraph 171(1)(j) of the *OHS Regulations*, the diving system and all of its components should be described and include:
 - The design standards used, the date of manufacture, certification, pressure ratings, fire protection, etc.
 - General arrangement drawings of the diving system.

⁸⁸ C-NLOPB – www.cnlopb.ca; CNSOPB – www.cnsopb.ns.ca

- For a dynamically positioned vessel, the type, features and capability of this system should be described, along with reference to the procedures required by paragraph 165(q) of the *OHS Regulations*. Refer also to requirements for dynamic positioning systems on a vessel used in a diving project found in section 95 of the *Framework Regulations*. If the diving system is installed on a drilling, production or accommodations installation, refer to section 149 of the *Framework Regulations*.
- With respect to paragraph 171(1)(k) of the *OHS Regulations*, the dive project plan should also include commitments with respect to the associated periodic review of the failure modes and effects analysis and the disposition of any associated observations or findings.
- With respect to paragraph 171(1)(l) of the *OHS Regulations*, should refer to any standards that were adopted for inspection, testing and maintenance of the equipment. Additional guidance for planned maintenance system for diving systems is provided in:
 - section 4.15.2 of *IMCA D014 - International Code of Practice for Offshore Diving*; and
 - section 7.2 of *IMCA D018 - Code of Practice for The Initial and Periodic Examination, Testing and Certification of Diving Plant and Equipment*.
- With respect to paragraph 171(1)(p) of the *OHS Regulations*, should also describe the records maintained to demonstrate how the plan was communicated (e.g., sign-off, attendance sheets, meeting minutes).
- Additional guidance for dive project plans in general is also provided in Section 7.1 of *IMCA D014 - International Code of Practice for Offshore Diving* and *IOGP RP 411 Recommended Practices for Diving Operations*.

Dive Team

With respect to subsection 171(2) of the *OHS Regulations*, there must be sufficient personnel available to do the diving operation safely. The number of personnel on the dive team must be determined by doing a risk assessment and should consider the diving method, nature of the work, depth of the dive, equipment being used and number of hours planned to do the work. In determining the size of the dive team, the diving contractor and operator should consider the relevant principles described in Section 5 of *IMCA D014 - International Code of Practice for Offshore Diving*.

Means of Communication

With respect to the subsection 171(3) of the *OHS Regulations*, additional guidance for communication systems is provided in the following:

- *IMCA D023 – Diving Equipment Systems Inspection Guidance Note for Surface Orientated (Air) Diving Systems*.
- *IMCA D024 - Diving Equipment Systems Inspection Guidance Note for Saturation (Bell) Diving Systems*.
- *IMCA D040 - Diving Equipment Systems Inspection Guidance Note for Mobile/Portable Surface Supplied Systems*.

Section 172 – Dive Contractor Obligations

172 (1) Every dive contractor must ensure, with respect to all diving operations under its direction and control, that

(a) the diving system used conforms to the annex to International Maritime Organization Resolution A.831(19), Code of Safety for Diving Systems, 1995;

(b) each member of the dive team and the pilot of any remotely operated vehicle being deployed conforms to the applicable competencies set out in CSA Group standard Z275.4, Competency standard for diving, hyperbaric chamber, and remotely operated vehicle operations;

(c) each diver and dive supervisor holds a valid standard first aid certificate or advanced first aid certificate and a valid certificate in first aid oxygen administration;

(d) each diver has been certified, within the 12-month period ending on the last day of the diving operation, as being medically fit to dive by one of the following physicians and has confirmed that their medical condition has not changed since their most recent certification:

(i) a physician who is licensed to practise medicine in Canada and meets the competencies of a Level 1 Physician set out in CSA Group standard Z275.4, Competency standard for diving, hyperbaric chamber, and remotely operated vehicle operations, or

(ii) a specialized dive physician who bases their certification on their review of a medical fitness certification issued in a jurisdiction outside of Canada within the same 12-month period;

(e) a specialized dive physician is readily available at all times to provide medical advice from a remote location in Newfoundland and Labrador (or Nova Scotia) and to be transported to the workplace, if necessary, to provide medical treatment, including to a diver in a compression chamber;

(f) any person performing first aid on a diver has unimpeded access to a means of communicating with the specialized dive physician;

(g) appropriate equipment is available at the workplace to permit the specialized dive physician, from a remote location, to

(i) communicate directly with a diver inside a compression chamber,

(ii) observe and examine a diver inside a compression chamber by means of visual and auditory aids, and

(iii) use available monitoring or clinical assessment technologies on a diver;

(h) the data transfer rate at the workplace is sufficient to permit continuous monitoring of a person inside a compression chamber and to allow the results of ongoing medical testing, such as electrocardiograms, to be transferred to the specialized dive physician, as determined through testing before the start of the diving operations;

(i) breathing mixtures that conform to CSA Group standard Z275.2, Operational safety code for diving operations or European Committee for Standardization (CEN) standard EN 12021, Respiratory equipment — Compressed gases for breathing apparatus are available in the quantities calculated in accordance with paragraph 165(i);

(j) each diver has independent primary and secondary breathing mixture supplies, each of which can be isolated from the supplies of other divers;

(k) breathing mixtures are available to divers at a rate appropriate to the depth and circumstances of the dive but no less than 62.5 L per minute;

(l) breathing mixtures are stored in compressed gas cylinders that have been certified by a competent person who is independent of the operator, dive contractor and manufacturer as being safe for that use;

(m) the applicable colour code referred to in paragraph 165(j) is posted in a conspicuous place in all breathing mixture storage areas;

(n) the oxygen content of each breathing mixture is analyzed by a member of the dive team on receipt of the mixture and immediately prior to each dive for which that mixture is to be used and any breathing mixture found to contain more than 25% oxygen by volume is handled as if it were pure oxygen;

(o) if a remotely operated vehicle is deployed while divers are in the water, there is a dedicated and continuous means of communication between the dive supervisor and the vehicle's pilot and a monitor at the dive control station displays the same picture as seen by the pilot;

(p) if a dive is being carried out from a dynamically positioned vessel,

(i) the vessel is equipped with

(A) an indicator that continuously displays its station keeping status,

(B) a visual and audible alarm system that warns of station keeping status changes, and whose alarms are visible and audible on the bridge, at the dive control station and in any other location where knowledge of such a change would be important for ensuring diver safety, and

(C) a fixed means of communication between the vessel's bridge and the dive control station and between the dive control station and the dynamic positioning control station that is capable of working even in the event of a total loss of power to the vessel, and

(ii) there is a dedicated and continuous means of communication between the dive control station and the dynamic positioning control station for the duration of the dive and employees at each station inform those at the other station immediately of any changes in operational circumstances;

(q) divers' breathing patterns are continuously monitored and their activities continuously observed and recorded for the duration of each dive;

(r) every diver's location in the water is continuously monitored for the duration of each dive;

(s) effective means of assisting and recovering divers are available for the duration of each dive;

(t) any dive during which a diver loses thermal balance or there is a failure of a thermal control system is immediately suspended and all divers are returned to the diving bell, if safe, or to the surface, even if the loss or failure is expected to be temporary;

(u) decompression is carried out only in accordance with the applicable decompression table identified in the dive project plan, except in extenuating circumstances and in consultation with a specialized dive physician;

(v) no diver travels by air within 24 hours after a dive or while suffering from decompression sickness, unless approved by a specialized dive physician; and

(w) the medical report associated with each diver's certification under paragraph (d) is readily available, in the case of an emergency, to members of the dive team who hold a diving medical

technician certificate and to the specialized dive physician referred to in paragraph (e), in an official language understood by that physician.

Surface-supplied diving

(2) If the diving operation involves surface-supplied diving, the dive contractor must also ensure that

(a) there is, at all times, at least one member of the dive team who holds a valid diving medical technician certificate and is not on a mandatory rest period on the surface and readily available to provide assistance to the divers;

(b) medical checks are carried out by a member of the dive team who holds a diving medical technician certificate, or by a medic under the direction of the specialized dive physician, on each diver at the beginning and end of each shift during which they dive;

(c) except in the case of an emergency, each standby diver has had 12 consecutive hours of rest since their most recent dive and no residual inert gas in their tissue as calculated in accordance with the applicable decompression table set out in the dive project plan;

(d) no dive is carried out at pressures greater than 50 msw or if the partial pressure of oxygen exceeds 1.4 ATA;

(e) sufficient double-lock deck compression chambers that have an inside diameter of at least 1.524 m and that can accommodate all divers who need to undergo decompression at any one time, as well as all other persons needing to be in the chamber with the divers to carry out the decompression procedures or provide medical care to them, are available at the workplace to allow for decompression in accordance with the applicable decompression table identified in the dive project plan; and

(f) if diving occurs from a light dive craft, the time needed to transport a diver from the surface to the deck compression chamber or medical room on the primary vessel from which the light dive craft is deployed does not exceed 15 minutes.

Saturation diving

(3) If the diving operation involves saturation diving, the dive contractor must also ensure that

(a) each diver holds a valid diving medical technician certificate;

(b) medical checks are carried out by a member of the dive team who holds a diving medical technician certificate, or by a medic under the direction of the specialized dive physician, on each diver immediately before they enter the compression chamber and immediately after they exit it after decompression;

(c) at least two diving bells are available, each of which

(i) is capable of sustaining the lives of the divers in it and protecting them against hypothermia for at least 24 hours,

(ii) is equipped with an emergency locating device whose signals the marine installation or structure from which the dive operation is carried out, and all rescue vessels on standby, are equipped to receive and interpret,

(iii) has suitable protective devices fitted to its main umbilical to control loss of atmospheric pressure in the diving bell if any of the components in the umbilical are ruptured, and

- (iv) has its internal atmosphere continuously monitored for contaminants and oxygen and carbon dioxide levels by both a primary and secondary monitoring system for the duration of each dive, with the data displayed both in the diving bell and at the dive control station, and the oxygen and carbon dioxide levels being recorded at least hourly;***
 - (d) the relative humidity in all living chambers is maintained between 40% and 60% at all depths, regardless of the number of divers in the chamber;***
 - (e) no pressurization is scheduled to last more than 28 days; and***
 - (f) a hyperbaric evacuation system that includes the following is readily available for the evacuation and reception of all divers:***
 - (i) a hyperbaric reception facility, and***
 - (ii) self-propelled hyperbaric lifeboats that are equipped with a life support package sufficient to sustain the lives of the divers and for which a mating trial with the reception facility has been conducted.***
-

Diving System

With respect to paragraph 172(1)(a) of the *OHS Regulations*, the diving system should also consider the requirements outlined in the *IMO International Code of Safety for Diving Operations 2023 (2023 Diving Code)* and meet any survey and certification requirements in the referenced IMO code(s). Diving systems should also conform to the appropriate national, international and IMCA standards. The following IMCA standards to consider should include, but not be limited to the following:

- *IMCA D018 - Code of Practice for The Initial and Periodic Examination, Testing and Certification of Diving Plant and Equipment.*
- *IMCA D023 – Diving Equipment Systems Inspection Guidance Note for Surface Orientated (Air) Diving Systems.*
- *IMCA D024 - Diving Equipment Systems Inspection Guidance Note for Saturation (Bell) Diving Systems.*
- *IMCA D040 - Diving Equipment Systems Inspection Guidance Note for Mobile/Portable Surface Supplied Systems.*
- *IMCA D053 - Diving Equipment Systems Inspection Guidance Note for the Hyperbaric Reception Facility (HRF) forming part of a Hyperbaric Evacuation System (HES).*

The diving system should be audited annually to ensure conformance with IMCA standards referenced above. Guidance on dive system auditing is provided in *IMCA D011 – Guidance on Auditing of Dive Systems*.

Dive Team Competency

With respect to paragraphs 172(1)(b) and (c) of the *OHS Regulations*, the following should be noted:

- Certification for diving positions can be obtained from the DCBC.

- Guidance for first aid training is provided in section 34 of this Guideline.

Medical Fitness to Dive

With respect to paragraph 172(1)(d) of the *OHS Regulations*, dive supervisors do not require dive medicals.

Section 173 – Diving Record

173 (1) Every dive contractor must make and sign a record that sets out, in respect of each dive carried out under its direction or control,

- (a) the date and location of the dive;**
- (b) the names of all divers, standby divers and dive supervisors;**
- (c) the task carried out;**
- (d) a list of the tools and equipment used that includes, in respect of each piece of equipment that is part of the diving apparatus, its type and serial number;**
- (e) the breathing mixture used;**
- (f) the time the diver began their descent from the surface;**
- (g) the maximum depth attained;**
- (h) the time spent at the maximum depth;**
- (i) the time the diver began their ascent from the maximum depth;**
- (j) the time the diver reached the surface;**
- (k) the surface interval, in the case of a repetitive dive;**
- (l) the type of decompression carried out and the decompression table used;**
- (m) the environmental conditions during the dive; and**
- (n) any remarks, including with respect to any unusual occurrences during the dive.**

Retention of record

(2) The dive contractor must retain the record for five years after the day on which the dive is completed.

Retention of recordings

(3) The dive contractor must retain all recordings referred to in paragraphs 171(3)(c) and 172(1)(q) for 48 hours after the diver has returned to the surface or living chamber, as the case may be, or any longer period that is necessary to enable the operator to investigate an occupational disease, accident, incident or other hazardous occurrence under subsection 205.017(2) (or 210.017(2)) of the Act.

Every diver and every dive supervisor engaged in a diving program should maintain a logbook in accordance with *IMCA D014 - International Code of Practice for Offshore Diving* and *IMCA D022 –*

Guidance for Dive Supervisors, respectively. Other key personnel involved in the diving program should also maintain logbooks.

5.0 Bibliography

Incorporated by Reference

1. *ACGIH Industrial Ventilation: A Manual of Recommended Practice for Design*
2. *ACGIH TLVs and BEIs: Based on the Documentation of the Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices*
3. *ANSI/ASHRAE 55, Thermal Environmental Conditions for Human Occupancy*
4. *ANSI/ASHRAE 62.1, Ventilation for Acceptable Indoor Air Quality*
5. *ANSI/ASSP A10.3, Safety Requirements for Powder-Actuated Fastening Systems*
6. *ANSI/ASSP A10.11, Safety Requirements for Personnel and Debris Nets*
7. *ANSI/CAN/UL 15027-2, Standard for Immersion Suits – Part 2: Abandonment Suits*
8. *ANSI/ISEA Z358.1, American National Standard for Emergency Eyewash and Shower Equipment*
9. *ANSI/ISEA Z89.1, American National Standard for Industrial Head Protection*
10. *ASME A17.1/CSA B44, Safety code for elevators and escalators*
11. *ASME B20.1, Safety Standard for Conveyors and Related Equipment*
12. *ASME B30.9, Slings*
13. *ASME B30.10, Hooks*
14. *ASME B30.20, Below-the-Hook Lifting Devices*
15. *ASME B30.26, Rigging Hardware*
16. *ASTM F2413, Standard Specification for Performance Requirements for Protective (Safety) Toe Cap Footwear*
17. *CAN/CGSB 155.20, Workwear for protection against hydrocarbon flash fire and optionally steam and hot fluids*
18. *CGA V-1, Standard for Compressed Gas Cylinder Valve Outlet and Inlet Connections*
19. *Codex Alimentarius Commission's "Recommended International Code of Practice: General Principles of Food Hygiene", CAC/RCP 1-1969*
20. *CSA B167, Overhead cranes, gantry cranes, monorails, hoists, and jib cranes*
21. *CAN/CSA-B311, Safety Code for Manlifts*
22. *CSA B335, Safety standard for lift trucks*
23. *CSA C22.2 No. 144, Ground Fault Circuit Interrupters*
24. *CSA C22.2 No. 60745, Hand-Held Motor-Operated Electric Tools – Safety (series)*
25. *CSA C22.2 No. 62841, Electric motor-operated hand-held tools, transportable tools and lawn and garden machinery – Safety (series)*
26. *CSA W117.2, Safety in welding, cutting, and allied processes*
27. *CSA Z107.56, Measurement of noise exposure*
28. *CSA Z11, Portable ladders*
29. *CSA Z1210, First aid training for the workplace – Curriculum and quality management for training agencies*
30. *CSA Z1220, First aid kits for the workplace*
31. *CSA Z142, Code for power press operation: Health, safety, and safeguarding requirements*
32. *CSA Z180.1, Compressed breathing air and systems*
33. *CSA Z195, Protective footwear*
34. *CSA Z259 Fall protection (series)*
35. *CSA Z275.2, Operational safety code for diving operations*

36. *CSA Z275.4, Competency standard for diving, hyperbaric chamber, and remotely operated vehicle operations*
37. *CSA Z432, Safeguarding of machinery*
38. *CSA Z460, Control of hazardous energy — Lockout and other methods*
39. *CSA-Z797, Code of practice for access scaffold*
40. *CSA Z94.1, Industrial protective headwear — Performance, selection, care, and use*
41. *CSA Z94.2, Hearing protection devices - Performance, selection, care, and use*
42. *CSA Z94.3, Eye and face protectors*
43. *CSA Z94.4, Selection, use, and care of respirators*
44. *CSA Z96, High visibility safety apparel*
45. *Department of Health's Guidelines for Canadian Drinking Water Quality*
46. *EN 12021, Respiratory equipment — Compressed gases for breathing apparatus*
47. *EN 12492, Mountaineering equipment – Helmets for mountaineers – Safety requirements and test methods*
48. *EN 353-2, Personal protective equipment against falls from a height – Part 2: Guided type fall arresters including a flexible anchor line*
49. *EN 567, Mountaineering equipment – Rope clamps – Safety requirements and test methods*
50. *IMO Code of Safety for Diving Systems, Resolution A.831(19)*
51. *IMO International Code for Fire Safety Systems (FSS Code)*
52. *IMO International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW)*
53. *IMO International Life-Saving Appliance Code (LSA Code), Resolution MSC.48(66)*
54. *IMO Resolution MSC.81(70), Revised Recommendation on Testing of Life-Saving Appliances*
55. *IRATA International code of practice for industrial rope access*
56. *ISO 20345, Personal protective equipment — Safety footwear*
57. *NFPA 30 Flammable and Combustible Liquids Code*
58. *NFPA 77 Recommended Practice on Static Electricity*
59. *NFPA 1971, Standard on Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting*
60. *NFPA 1981, Standard on Open-Circuit Self-Contained Breathing Apparatus (SCBA) for Emergency Services*
61. *NFPA 1983, Standard on Life Safety Rope and Equipment for Emergency Services (Chapters 1 through 3, 24 through 28 and Annexes A and K of NFPA 2500 Standard for Operations and Training for Technical Search and Rescue Incidents and Life Safety Rope and Equipment for Emergency Services constitute the 2022 edition of NFPA 1983)*
62. *NFPA 2112, Standard on Flame-Resistant Clothing for Protection of Industrial Personnel Against Short-Duration Thermal Exposures from Fire*
63. *NIOSH Manual of Analytical Methods*
64. *TP 13008, Training Standards for Marine First Aid and Marine Medical Care*

Codes of Practice

1. *Atlantic Canada Offshore Petroleum Industry Safe Lifting Practice Respecting the Design, Operation and Maintenance of Materials Handling Equipment*
2. *Atlantic Canada Offshore Petroleum Code of Practice for the Training and Qualifications of Offshore Personnel (COP TQOP)*

3. *Fatigue Management in the Canada-Newfoundland and Labrador Offshore Petroleum Industry*
4. *Code of Practice for Transportation of Employees by Helicopter to or from a Workplace*
5. *Code of Practice for Transportation of Employees via Vessel to or from a Workplace*

Other Documents Referenced in this Guideline

1. *ABS Guide for Certification of Lifting Appliances, August 2024*
2. *ACGIH Industrial Ventilation: A Manual of Recommended Practice for Design, April 2023 (this document is also incorporated by reference in the OHS Regulations)*
3. *ACGIH Industrial Ventilation: A Manual of Recommended Practice for Operation and Maintenance, January 2020*
4. *ANSI A14.3 American National Standard for Ladders - Fixed -Safety Requirements, October 2018*
5. *ANSI/ASHRAE 62.1, Ventilation for Acceptable Indoor Air Quality, August 2022 (this document is also incorporated by reference in the OHS Regulations)*
6. *ANSI/IES RP-7-21 Recommended Practice: Lighting Industrial Facilities, July 2021*
7. *API RP 14F Recommended Practice for Design, Installation, and Maintenance of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class 1, Division 1 and Division 2 Locations, October 2018*
8. *API RP 14FZ Recommended Practice for Design, Installation, and Maintenance of Electrical Systems for Fixed and Floating Offshore Petroleum Facilities for Unclassified and Class I, Zone 0, Zone 1 and Zone 2 Locations, May 2013 (Reaffirmed 2021)*
9. *API RP 67 – Oilfield Explosives Safety, October 2019*
10. *API Standard 2015 Requirements for Safe Entry and Cleaning of Petroleum Storage Tanks, August 2024*
11. *Canadian Association of Petroleum Producers (CAPP) Atlantic Canada Medical Assessment for Fitness to Work Offshore, May 2016*
12. *Canadian Biosafety Handbook, May 2016*
13. *Canadian Guidelines for the Management of Naturally Occurring Radioactive Materials, 2011*
14. *CAN/BNQ 2910-500 – Explosives – Magazines for Industrial Explosives, April 2015*
15. *CAN/CGSB-65.17 Helicopter Passenger Transportation Suit Systems, December 2020*
16. *CAN/CGSB 65.7 Lifejackets, June 2007 (withdrawn)*
17. *CAN/CGSB 65.16 Immersion Suit Systems, November 2005 (withdrawn)*
18. *CSA B354.6 Mobile elevating work platforms – Design, calculations, safety requirements and test methods, May 2017*
19. *CSA B354.7 Mobile elevating work platforms – safety principles, inspection, maintenance and operation, May 2017*
20. *CSA B354.8 Mobile elevating work platforms – operator (driver) training, May 2017*
21. *CSA C22.2 No. 2556 Wire and Cable Test Methods, April 2021*
22. *CSA W117.2, Safety in welding, cutting, and allied processes, January 2019 (this document is also incorporated by reference in the OHS Regulations)*
23. *CSA Z1002 Occupational health and safety – Hazard identification and elimination and risk assessment, September 2012, reaffirmed 2022*
24. *CSA Z1003/BNQ 9700-803 Psychological health and safety in the workplace – prevention, promotion and guidance to staged implementation, January 2013*
25. *CSA Z1006 Management of Work in Confined Spaces, August 2023*
26. *CSA Z1007 Hearing loss prevention program (HLPP) management, March 2022*

27. *CSA Z462 Workplace Electrical Safety, March 2024*
28. *CSA Z463 – Maintenance of Electrical Systems, August 2018*
29. *CSA Z94.3.1 Guideline for selection, use, and care of eye and face protectors, September 2016*
30. *DMAC 12 Safe Diving Distance from Seismic Surveying Operations, June 2020*
31. *DMAC 22 Proximity to a Recompression Chamber After Surfacing, October 1992*
32. *DNV-OS-A301 Human Comfort, July 2021*
33. *DNV Rules for Certification of Lifts in Ships, Mobile Offshore Units and Offshore Installations, 2008*
34. *Dropped Object Prevention Scheme Recommended Practice, March 2020*
35. *EN 81 Safety Rules for the Construction and Installation of Lifts (series, dates vary)*
36. *European Union Directive 2006/42/EC on machinery*
37. *Explosives Act (Canada)*
38. *HSG 253 The safe isolation of plant and equipment, UK Health and Safety Executive, 2006*
39. *IADC HSE Case Guidelines for Mobile Offshore Drilling Units, January 2015*
40. *IEC 60079-10-1 Explosive Atmospheres – Part 10-1: Classification of areas — Explosive gas atmospheres, December 2020*
41. *IEC 60079-10-2 Explosive atmospheres – Part 10-2: Classification of areas - Explosive dust atmospheres, January 2015*
42. *IEC 60079-29-2 Part 29-2: Explosive Atmospheres - Gas detectors — Selection, installation, use and maintenance of detectors for flammable gases and oxygen, March 2015*
43. *IEC 60092 – Electrical Installations in Ships (series, dates vary)*
44. *ILO Maritime Labour Convention (MLC), 2006*
45. *ILO Code of Practice: Ambient Factors in the Workplace, 2001*
46. *IMCA C013 - First Response and Other Emergency Drills, September 2021*
47. *IMCA D009 – Protective Guarding of Gas Cylinder Transport Containers (Quads), June 2023*
48. *IMCA D010 – Diving Operations from Vessels Operating in Dynamically Positioned Mode, June 2023*
49. *IMCA D011 – Guidance on Auditing of Dive Systems, January 2017*
50. *IMCA D014 – International Code of Practice for Offshore Diving, August 2023*
51. *IMCA D018 – Code of Practice for The Initial and Periodic Examination, Testing and Certification of Diving Plant and Equipment, August 2022*
52. *IMCA D021 – Diving in Contaminated Waters, October 2021*
53. *IMCA D022 – Guidance for Dive Supervisors, August 2016*
54. *IMCA D023 – Diving Equipment Systems Inspection Guidance Note for Surface Orientated (Air) Diving Systems, August 2022*
55. *IMCA D024 – Diving Equipment Systems Inspection Guidance Note for Saturation (Bell) Diving Systems, August 2022*
56. *IMCA D040 – Diving Equipment Systems Inspection Guidance Note for Mobile/Portable Surface Supplied Systems, July 2015*
57. *IMCA D043 – Marking and Colour Coding of Gas Cylinders, Quads and Banks for Diving Applications, November 2007*
58. *IMCA D044 – Guidelines for Isolation and Intervention: Diver Access to Subsea Systems, October 2009*
59. *IMCA D050 – Minimum Quantities of Gas Required Offshore, April 2021*
60. *IMCA D052 – Guidance on Hyperbaric Evacuation Systems, August 2018*
61. *IMCA D053 – Diving Equipment Systems Inspection Guidance Note for the Hyperbaric Reception Facility (HRF) forming part of a Hyperbaric Evacuation System (HES), October 2018*

62. *IMCA M103 – Guidelines for the Design and Operation of Dynamically Positioned Vessels, August 2022*
63. *IMCA M117 – Guidelines for the Training and Experience of Key DP Personnel, August 2023*
64. *IMO Code for the Construction and Equipment of Mobile Offshore Drilling Units (IMO MODU Code), as amended*
65. *IMO Code on Alerts and Indicators. Resolution A.1021(26), as amended*
66. *IMO MSC.1/Circ.982 Guidelines on Ergonomic Criteria for Bridge Equipment and Layout, December 2000*
67. *IMO MSC.1/Circ.1321 Guidelines for Measures to Prevent Fire in Engine Rooms and Cargo Pump Rooms, June 2009*
68. *IMO International Code for Fire Safety Systems (FSS Code), as amended (this document is also incorporated by reference in the OHS Regulations)*
69. *IMO International Code of Safety for Diving Operations 2023 (2023 Diving Code), as amended*
70. *IMO International Convention for the Safety of Life at Sea (SOLAS), as amended*
71. *IMO International Convention on Maritime Search and Rescue, as amended*
72. *IMO International Convention on Standards of Training, Certification and Watchkeeping for Seafarers (STCW), as amended (this document is also incorporated by reference in the OHS Regulations)*
73. *IMO International Life-Saving Appliance Code (LSA Code), Resolution MSC.48(66), as amended (this document is also incorporated by reference in the OHS Regulations)*
74. *IMO International Maritime Dangerous Goods (IMDG) Code, as amended*
75. *IMO International Safety Management (ISM) Code, as amended*
76. *IMO/WHO/ILO and IMO’s Medical First Aid Guide for Use in Accidents Involving Dangerous Goods*
77. *International Chamber of Shipping and International Transport Workers Federation Guidance on Eliminating Shipboard Harassment and Bullying, November 2016*
78. *IOGP Dropped Object Scenarios, February 2018*
79. *IOGP RP 411 Recommended Practices for Diving Operations, January 2021*
80. *IOGP Report 478 – Performance of Saturation Diving Emergency Hyperbaric Evacuation and Recovery, January 2018*
81. *ISO 2631 Mechanical vibration and shock - Evaluation of human exposure to whole-body vibration, May 1997*
82. *ISO 5349-1 Mechanical vibration -- Measurement and evaluation of human exposure to hand-transmitted vibration -- Part 1: General requirements, May 2001*
83. *ISO 5349-2 Mechanical vibration - Measurement and evaluation of human exposure to hand-transmitted vibration - Part 2: Practical guidance for measurement at the workplace for hand-transmitted vibration, August 2001*
84. *ISO 12402-2 Personal floatation devices – Part 2: Lifejackets, performance level 275 – Safety requirements, September 2020*
85. *ISO 12402-3 Personal floatation devices – Part 3: Lifejackets, performance level 150 – Safety requirements, September 2020*
86. *ISO 12402-10 Personnel flotation devices – Part 10: Selection and application of personal flotation devices and other relevant devices, October 2020*
87. *ISO 15027 – 1: Immersion suits - Part 1: Constant wear suits, requirements including safety, November 2012*
88. *ISO 15027 - 2: Immersion suits - Part 2: Abandonment suits, requirements including safety, November 2012*

89. *ISO 15544 Oil and gas industries - Offshore production installations - Requirements and guidelines for emergency response, June 2024*
90. *ISO 17776 Petroleum and natural gas industries - Offshore production installations - Major accident hazard management during the design of new installations, December 2016*
91. *ISO 20283-5 Mechanical vibration- Guidelines for the measurement, reporting and evaluation of vibration with regard to habitability on passenger and merchant ships, December 2016*
92. *ISO 22159 Personal equipment for protection against falls - Descending devices, May 2007*
93. *ISO 35101 petroleum and natural gas industries – Arctic operations – Working Environment, October 2017*
94. *ISO 45001 Occupational health and safety management systems – requirements, March 2018*
95. *ISO 80079-36 Explosive atmospheres – Part 36: Non-electrical equipment for explosive atmospheres – Basic methods and requirements, February 2016*
96. *LR Code for Lifting Appliances in a Marine Environment, July 2024*
97. *National Building Code of Canada, March 2022*
98. *NFPA 1 – Fire Code, 2024*
99. *NFPA 30 Flammable and Combustible Liquids Code, May 2023 (this document is also incorporated by reference in the OHS Regulations)*
100. *NFPA 51 Standard for the Design and Installation of Oxygen – Fuel Gas Systems for Welding, Cutting, and Allied Processes, 2023*
101. *NFPA 51B Standard for Fire Prevention During Welding, Cutting, and Other Hot Work, May 2023*
102. *NFPA 70B Standard for Electrical Equipment Maintenance, January 2023*
103. *NFPA 70E Standard for Electrical Safety in the Workplace, May 2023*
104. *NFPA 77 Recommended Practice on Static Electricity, May 2023 (this document is also incorporated by reference in the OHS Regulations)*
105. *NFPA 101 Life Safety Code, 2024*
106. *NFPA 1851, Standard on Selection, Care, and Maintenance of Protective Ensembles for Structural Fire Fighting and Proximity Fire Fighting, October 2019*
107. *NFPA 1983 (NFPA 2500), Standard on Life Safety Rope and Equipment for Emergency Services, September 2021 (this document is also incorporated by reference in the OHS Regulations)*
108. *NFPA (Fire) 2113 Standard on Selection, Care, Use, and Maintenance of Flame-Resistant Garments for Protection of Industrial Personnel Against Short-Duration Thermal Exposures from Fire, 2025*
109. *NORSOK S-002: Working Environment, December 2021*
110. *NORSOK U-100 Manned Underwater Operations, October 2015*
111. *Norwegian Institute of Public Health - Safe, Sufficient and Good Potable Water Offshore: A guideline to design and operation of offshore potable water systems, 5th edition, January 2017*
112. *Transportation of Dangerous Goods Act*
113. *UKOOA Industry Guidelines for First-Aid and Medical Equipment on Offshore Installations, December 2000*
114. *Workplace NL Harassment Prevention Guide, April 2023*
115. *World Health Organization (WHO) International Medical Guide for Ships, 3rd Edition*
116. *World Health Organization (WHO) Ship Sanitization Guidance, April 2011*