



Incident Reporting and Investigation Guidelines

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Foreword

The Canada-Nova Scotia Offshore Petroleum Board and Canada-Newfoundland and Labrador Offshore Petroleum Board (the Boards) have issued these guidelines to assist operators and other workplace parties to comply with the requirements of the Accord Acts, the regulations, and the terms and conditions of Board approvals and authorizations for the reporting and investigation of incidents that occur in the Offshore Area.

The Boards may develop or adopt guidance, standards and recommended practices to support and complement the regulations that they enforce. In all cases, the intent of the Boards is to provide additional information and guidance to the operator so that they may better understand the expectations of the Boards with respect to responsiveness to and compliance with the regulatory requirements.

The authority to issue guidelines and interpretation notes with respect to regulations is specified by subsection 156(1) of the *Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act (CNSOPRAIA)* and subsection 151.1 of the *Canada-Newfoundland Atlantic Accord Implementation Act (C-NAAIA)*.¹

In many instances, these guidelines identify a means or method toward achieving regulatory compliance. These means or methods may be based on a number of criteria, including:

- the mandatory requirements of the Accord Act and the regulations,
- the experience of the Boards in how compliance may be achieved, or
- industry best practice

Guidelines are not statutory instruments and the description of a means or method in these guidelines is not mandatory, unless referencing a Regulatory or Board requirement. The onus is on the operator to comply with the Act and the regulations and to be able to demonstrate to the appropriate Board the adequacy and effectiveness of the methods employed to achieve compliance.

The Boards are interested in ensuring that these guidelines reflect lessons learned through audits and assessments, advancements in technology and improvements to best practice. Amendments will be made in an effort to ensure that these guidelines are continuously improved.

¹ References to the C-NAAIA or CNSOPRAIA in this document are to the federal versions of the Accord Acts

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1.0 Acronyms

CAPP	Canadian Association of Petroleum Producers
C-NAAIA²	<i>Canada-Newfoundland Atlantic Accord Implementation Act</i>
C-NLOPB	Canada-Newfoundland and Labrador Offshore Petroleum Board
CNSOPB	Canada-Nova Scotia Offshore Petroleum Board
CNSOPRAIA³	<i>Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act</i>
CSA	Canadian Standards Association
DPR	<i>Newfoundland Offshore Petroleum Drilling and Production Regulations, 2009 and Nova Scotia Offshore Petroleum Drilling and Production Regulations, 2009</i>
DVR	<i>Newfoundland Offshore Area Petroleum Diving Regulations, 1988 and Nova Scotia Offshore Area Petroleum Diving Regulations, 1995</i>
GR	<i>Newfoundland Offshore Area Petroleum Geophysical Operations Regulations, 1995 and Nova Scotia Offshore Area Geophysical Operations Regulations, 1995</i>
INST	<i>Newfoundland Offshore Petroleum Installation Regulations, 1995 and Nova Scotia Offshore Petroleum Installation Regulations, 1995</i>
IRF	International Regulator's Forum
ISO	International Organization for Standardization
MODU	Mobile Offshore Drilling Unit
NEB	National Energy Board
NL	Newfoundland and Labrador

² References to the C-NAAIA or CNSOPRAIA in this document are to the federal versions of the Accord Acts

³ References to the C-NAAIA or CNSOPRAIA in this document are to the federal versions of the Accord Acts

NS	Nova Scotia
OGP	<i>International Association of Oil & Gas Producers</i>
OSH (NL)	<i>Newfoundland Offshore Petroleum Area Occupational Safety and Health Regulations, 1989 (Draft)</i>
OSH (NS)	<i>CNSOPB Occupational Health and Safety Requirements, December 2000</i>
TQSP	<i>CAPP (Canadian Association of Petroleum Producers) Canadian East Coast Offshore Petroleum Industry Standard Practice for the Training and Qualification of Personnel, November 2010</i>
WCA	<i>Worker's Compensation Act of Nova Scotia</i>
WHSCA	<i>Workplace Health, Safety and Compensation Act of Newfoundland and Labrador</i>

2.0 Definitions

Accord Acts	<i>the Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act and Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation (Nova Scotia) Act, Canada-Newfoundland Atlantic Accord Implementation Act and the Canada-Newfoundland and Labrador Atlantic Accord Implementation (Newfoundland and Labrador) Act</i>
authorization	an authorization issued by the Boards pursuant to the Accord Acts ⁴
barrier	technical, human or organizational safeguards that are put in place to prevent, mitigate or control health, safety or environmental risks
Boards	the Canada-Newfoundland and Labrador Offshore Petroleum Board and the Canada-Nova Scotia Offshore Petroleum Board
committee	an occupational health and safety committee comprised of employer and worker representatives

⁴C-NAAIA 138(1)(b) and CNSOPRAIA 142(1)(b)

whose primary role is to monitor the health, safety and welfare of workers at the workplace⁵

dependent contractor

a person, whether or not employed under a contract of employment and whether or not furnishing the person's own tools, vehicles, equipment, machinery, material or any other thing, who performs work or services for another on such terms and conditions that the person is in a position of economic dependence upon the other, under an obligation to perform duties mainly for the other, and in a relationship with the other more closely resembling that of an employee than an independent contractor⁶

employee

a person who is employed by, or contracted to perform work under the supervision of, an employer and includes a dependent contractor⁷

employer

a person who employs one or more employees or contracts for the services of one or more employees, and includes a contractor or subcontractor⁸

hazard

any existing or potential practice or condition that may result in injury or illness to a person, damage to property or an adverse environmental effect

hazardous substance

a chemical, biological or physical agent that, by reason of a property that the agent possesses, is hazardous to the safety or health of a person exposed to it⁹

incident

Any event that caused or, under slightly different circumstances, would likely have caused harm to personnel, an unauthorized discharge or spill or an imminent threat to the safety of an installation, vessel or aircraft. It also includes any event that impairs the function of any equipment or system critical to the safety of personnel, the installation, vessel or aircraft or any event that impairs the

⁵ C-NAAIA 152; Section 37 of the Newfoundland and Labrador Occupational Health and Safety Act; C-NLOPB Other Requirements Respecting Occupational Health & Safety and OSH (NS) Element 1, Part 5

⁶ OSH (NS) Element 1, Part 1, Section 1.1

⁷ OSH (NL) 1.1; OSH (NS) Element 1, Part 1, Section 1.1

⁸ OSH (NL) 1.1; OSH (NS) Element 1, Part 1, Section 1.1

⁹ OSH (NL) 1.1; OSH (NS) Element 1, Part 1, Section 1.1

	function of equipment or system critical to the protection of the natural environment ¹⁰
management system	the management system that integrates operations and technical systems with the management of financial and human resources to ensure compliance with the Accord Acts and the regulations ¹¹
Officer	the Chief Conservation Officer, the Chief Safety Officer, a Conservation Officer or a Safety Officer as appointed by the relevant Board pursuant to the Accord Acts ¹²
offshore area	the area defined in the Accord Acts ¹³
operator	the holder of an authorization to carry on work or activity under the Accord Acts ¹⁴
physical environmental conditions	the meteorological, oceanographic and related physical conditions, including ice conditions, that might affect a work or activity ¹⁵
representative	a health and safety representative who provides a similar function as a committee in a workplace ¹⁶
risk	a measure of probability and severity of a hazard
shall	indicates an expectation that an operator must meet to be considered in compliance with the acts and regulations
should	refers to a recommended method which provides an example of how an operator can meet an expectation, but does not prevent an operator from selecting alternative best practices
support craft	a vessel, vehicle, aircraft (including helicopters), standby vessel or other craft used to provide transportation for or assistance to persons on the site where a work or activity is conducted ¹⁷

¹⁰ OSH (NL) 15; OSH (NS) Element 1, Part 1, Section 1.1; INST 70; DPR 1(1) definition of "incident" and "near-miss"; GR 27 & 28; DVR 6

¹¹ DPR 5; C-NLOPB Other Requirements Respecting Occupational Health & Safety, Section 2 & 3 and OSH (NS) Element 1, Part 3 & 4

¹² C-NAAIA 140 and CNSOPRAIA 144

¹³ C-NAAIA 2; CNSOPRAIA 2

¹⁴ C-NAAIA 137, 138, 138.1; CNSOPRAIA 140, 142, 142.1; DPR 1(1) GR2; INST 2; DVR 2

¹⁵ DPR 1(1)

¹⁶ C-NAAIA 152; Section 37 of the Newfoundland and Labrador Occupational Health and Safety Act; C-NLOPB Other Requirements Respecting Occupational Health & Safety and OSH (NS) Element 1

¹⁷ DPR 1(1)

workplace any working area, or place, including an installation or marine vessel, where an employee is or is likely to be engaged in any occupation and includes any vehicle or mobile equipment used or likely to be used by an employee in an occupation¹⁸

3.0 Purpose and Scope

The objective of these guidelines is to assist operators in the reporting and investigation of incidents in a manner that complies with the requirements of the accord acts and regulations and the terms and conditions of Board approvals and authorizations. These guidelines describe:

- what constitutes an incident that is reportable to the Board;
- the process for the operator to report an incident;
- the Boards' expectations for incident investigations conducted by the operator, and
- the process for periodic reporting of statistics and reports describing continual improvement initiatives based on the results of incident trending and analysis

These guidelines apply to all operations in the offshore area conducted under the authority of an authorization issued by the Boards.¹⁹ This includes, but is not limited to, all operations on:

- Installations
 - Production Installations, e.g.
 - Fixed production platforms (manned and unmanned)
 - Floating production platforms (e.g. floating production, storage and offloading vessels)
 - Drilling Installations, e.g.
 - Mobile Offshore Drilling Units (MODU) (e.g. drill ships)
 - Column-stabilized MODU's (i.e. semi-submersible drill rigs)
 - Self-elevating MODU's (i.e. jack-up drill rigs)
 - Well intervention vessels
 - Diving Installations
 - Accommodation Installations
- Vessels
 - Conducting geophysical or other data gathering activities e.g. geotechnical, geological, environmental monitoring, etc.

¹⁸ OSH (NL) 1.1; C-NLOPB Other Requirements Respecting Occupational Health & Safety; OSH (NS) Element 1, Part 1, Section 1.1

¹⁹ C-NAAIA; CNSOPRAIA; DPR; INST; GR; DVR; OSH (NL); OSH (NS)

- Conducting construction activities e.g. installation of offshore installations or equipment, rock dumping, dredging, pipe laying, etc. in support of an authorization
- Support vessels, including but not limited to standby, supply, personnel transport and ice management vessels used in support of an authorization
- Aircraft
 - Conducting geophysical activities
 - Helicopters used for personnel transportation.
 - Conducting other activities in the vicinity of an installation.

Clarification on reporting of incidents is provided in Section 5.0.

4.0 Management System Requirements

Operators of drilling and production installations shall ensure that the installations are designed, constructed, tested, maintained and operated in a manner that ensures that all incidents are prevented.²⁰ Operators are also required to have a management system that includes processes for the internal reporting and analysis of hazards, minor injuries, incidents and near-misses and for taking corrective actions to prevent their recurrence.²¹ The processes shall be effective and documented and should be designed such that personnel are encouraged to report hazards and incidents. The processes for the investigation of incidents should:

- establish the roles and responsibilities of personnel, including those of workers and worker representatives, involved in the incident investigation process and the subsequent review of incident investigation reports
- specify qualifications, training and competency requirements for personnel involved in incident investigations or the subsequent review of incident investigation reports
- specify the composition and requirements for investigation teams
- provide clear criteria for the internal and external communication of incidents and investigation results
- specify requirements for conducting incident investigations and outline expected outcomes, such as the identification of root cause(s), corrective and preventive actions
- specify how incidents and subsequent corrective and preventive actions are tracked and communicated to all levels of the organization

²⁰ DPR 25(a), 45(a) and 45(b)

²¹ DPR 5(2)(c)(f); C-NLOPB/CNSOPB Drilling and Production Guidelines, ISO 9001:2000, CSA Z1000-06 and ISO 14001:2004

- specify performance monitoring criteria for incidents, such as measures for ensuring corrective and preventive actions are implemented in a timely manner
- specify a mechanism for assessing the effectiveness of any preventative and corrective actions taken
- specify how results from incident investigations are utilized for the continual improvement of quality, health, safety and environmental management systems
- describe the monitoring, auditing and review of the effectiveness of the incident investigation process

5.0 Reporting of Incidents

Operators are required to have adequate and effective processes for internal and external reporting of hazards and incidents.²² To maintain a healthy and safe workplace, each person must take responsibility for these processes as appropriate for their role in the workplace.

5.1 Reporting by an Employee

When an employee becomes aware of a hazard or incident, the employee is expected to report the occurrence to their supervisor/employer, the operator, or both.²³ The operator is responsible to define the reporting processes in the management system, and to ensure that employees are trained and encouraged to report accordingly.²⁴

The reporting mechanisms in place shall not result in undue hardship for employees, and discrimination or reprisal against an employee as a result of reporting a hazard or incident is not permitted.²⁵

As an additional protection, in the event that a reported hazard or incident has not been addressed by the supervisor/employer or operator, an employee may report the hazard or incident directly to the appropriate Board:

- C-NLOPB Duty Officer (709) 682-4426 or incident@cnlopb.ca
- CNSOPB Duty Officer (902) 496-4444 or incident@cnsopb.ns.ca

5.2 Reporting to the Committee or Representative

The committee or representative shall be notified of all health and safety related incidents as soon as possible but no later than 24

²² OSH (NL) Part XV; OSH (NS) Element 2, Part 15; DPR 5(1)(c)(f); INST 70; GR 27 & 28; DVR 6;

²³ OSH (NL) 15.2; OSH (NS) Element 2, Part 15, Section 15.2; C-NAAIA 161(2); CNSOPRAIA 166(2)

²⁴ DPR 5(2)(f)(g)

²⁵ OSH (NL) Part X; OSH (NS) Element 2, Part 10

hours after the operator becomes aware of any incident.²⁶ It is the operator's responsibility to ensure committees or representatives are promptly notified and can carry out their obligations with regard to health and safety related incidents.

5.3 Operator Reporting to the Board

The Accord Acts, the regulations, and the terms and conditions of Board approvals and authorizations contain different requirements and definitions for the reporting and investigation of hazardous occurrences, accidents, incidents and near misses which may occur in the offshore area. To provide clarity to operators and other workplace parties, an incident has been defined in these guidelines as:

“Any event that caused or, under slightly different circumstances, would likely have caused harm to personnel, an unauthorized discharge or spill or an imminent threat to the safety of an installation, vessel or aircraft. It also includes any event that impairs the function of any equipment or system critical to the safety of personnel, the installation, vessel or aircraft or any event that impairs the function of equipment or systems critical to the protection of the natural environment.”²⁷

An operator shall notify the relevant Board of all incidents, which occur on any installation, vessel or aircraft in the course of conducting any work or activity related to an authorization.

Further clarification on reporting requirements for support craft (including helicopters) are as follows:²⁸

- An incident shall be reported if the support craft is in the offshore area and conducting any work or activity related to an authorization.
- An incident shall be reported at any time while the support craft is engaged in transporting personnel (via air or sea) to or from an installation or vessel.

An operator is required to notify the relevant Board of any incident.²⁹ This section describes three types of notifications to the Boards – immediate verbal notification, immediate written notification and written notification (within 24 hours).

²⁶ OSH (NL) 15.3; OSH (NS) Element 2, Part 15, Section 15.3

²⁷ OSH (NL) 15; OSH (NS) Element 1, Part 1, Section 1.1; INST 70; DPR 1(1) definition of "incident" and "near-miss"; GR 27 & 28; DVR 6

²⁸ OSH (NL) 15; DPR 76

²⁹ OSH (NL) 15.2; OSH (NS), Element 2, Part 15, Section 15.2 ;INST 70;DPR 76(1);DVR 6 (j); GR 27

In addition, the appropriate Board shall be notified without delay before a press release or press conference related to an incident.³⁰

5.3.1 Immediate Verbal Notification

Immediately after the operator has taken actions to ensure the safety of personnel and the environment, the operator shall contact the appropriate Board's on-call duty officer for incidents that involve the following:

- Fatality
- Missing Person
- Major Injury
- Medical Evacuation (MEDEVAC)
- Fire/Explosion
- Collision
- Loss of Well Control
- Major Hydrocarbon Release
- Unauthorized Discharge or Spill greater than 25 L
- Adverse Environmental Conditions
- Security
- Implementation of Emergency Response Plans
- Major Impairment/Damage
- Near Miss with potential for fatality

Further information and guidance on reporting on the above classifications is provided in Section 6.0.

Operators should direct all Immediate Verbal Notifications to the C-NLOPB Duty Officer at (709) 682-4426 or to the CNSOPB Duty Officer at (902) 496-4444. The Duty Officers are on call 24 hours a day, seven days a week.

The operator shall provide the duty officer with their contact information, a brief description of the incident and the consequences of the incident, immediate (and ongoing) response efforts, any further actions planned, and any other relevant information the duty officer requests.³¹

As soon as reasonably practicable following the verbal notification, the operator shall provide written notification to the C-NLOPB or to the CNSOPB as described in Section 5.3.3.

³⁰ DPR 76(1)(b)

³¹ OSH (NL) 15.4; OSH (NS) Element 2, Part 15, Section 15.4; INST 70, DPR 76(1); C-NAAIA 189-192; CNSOPRAIA 194-197

5.3.2 Immediate Written Notification

The following incidents shall be reported immediately by email to incident@cnlopb.ca or to the CNSOPB by email to incident@cnsopb.ns.ca:

- Well Control Incident
- Unauthorized Discharge or Spill of 25 L or less

5.3.3 Written Notification

For all incidents, the operator shall provide a written notification to the relevant Board as soon as reasonably practicable but no later than 24 hours after the operator becomes aware of any incident.³²

The written notification may be submitted to the C-NLOPB by email to incident@cnlopb.ca or to the CNSOPB by email to incident@cnsopb.ns.ca.

E-mailed notifications should contain a short descriptive title and any incident identification number assigned by the operator. In accordance with the Accord Acts, the Boards have set the form of the written notification to include the following information³³:

- Date and time of the incident
- Operator
- Operator contact name and phone number
- Operator's internal reference number
- The installation, vessel or aircraft name
- Location (latitude and longitude)
- Well/Field (if applicable)
- List of other agencies notified
- Actual and potential incident classifications (as per Section 6.0)
- Description of the incident (including events leading up to the incident and any other relevant information)
- Description of site operations and relevant environmental conditions at time of incident
- Immediate response action(s) taken, including statement regarding implementation of emergency response procedures
- Planned response action to be taken

³² OSH (NL) 15.4, OSH (NS) Element 2, Part 15, Section 15.4; DPR 76, INST 70, DVR 6 (j), GR 27

³³ C-NAAIA 49; CNSOPRAIA 52; OSH (NL) 15.4, OSH (NS) Element 2, Part 15, Section 15.4; DPR 76, INST 70, DVR 6 (j), GR 27

- For injuries/illnesses and non-occupational medevacs, the name of affected worker³⁴, nationality, occupation and employer
- For hydrocarbon releases, leaks of hazardous substances, unauthorized discharges and spills, information on materials released, volumes released and information / observations of environmental impact.
- For incidents onboard diving installations, the supplementary [Diving Incident Report Form](#)³⁵ is required to be completed and submitted.³⁶

An operator shall use the [Incident Notification Form](#)³⁷ posted on the C-NLOPB website (<http://www.cnlopb.ca/>) and the CNSOPB website (www.cnsopb.ns.ca) for this purpose. Further information on the classification of incidents is located in Section 6.0.

5.4 Reporting to Other Authorities

The Boards, as lead regulatory agencies for offshore oil and gas activities, typically coordinate communications regarding incidents. Where a written incident notification is submitted to the Board, it should specify any other authorities that have been notified.

In some instances, direct contact by an operator with other authorities may be required (e.g. federal or provincial departments or other regulatory agencies). The operator is responsible for ensuring that all authorities are appropriately contacted. If a health, safety, or environmental occurrence does not directly trigger incident reporting to the Board, but requires written notification to another authority, the operator should notify the Board and provide a copy of the written notification.

A list of some of the common authorities is included below; however, this list is not exhaustive.

5.4.1 Joint Rescue Coordination Centre

If the incident involves, or has the potential to involve, any element of marine search and rescue or a medevac, the operator should ensure that immediate notification is made to the 24-hour contact number for the Joint Rescue

³⁴ Pursuant to C-NAAIA 119 and CNSOPRAIA 122, providing the name of the affected worker is not a violation of privacy legislation, and it is necessary to allow the Board to monitor and follow-up on reported injuries and potential injuries. All injury reports are privileged pursuant to the Accord Acts.³⁴ If the operator has concerns of internet security, the names of affected workers may be submitted to the Board via means other than email.

³⁵ http://www.cnsopb.ns.ca/sites/default/files/pdfs/diving_incident.doc

³⁶ DVR 6(1)(i) and (j), SCHEDULE III

³⁷ http://www.cnsopb.ns.ca/sites/default/files/pdfs/incident_notification.doc

Coordination Centre (JRCC), Halifax, which can be obtained from www.ccg-gcc.gc.ca.

5.4.2 Canadian Coast Guard

For marine pollution incidents, the Operator should ensure that immediate notification is to the applicable 24 hour regional contact number of the Canadian Coast Guard. Contact information can be obtained from www.ccg-gcc.gc.ca.

5.4.3 Transport Canada Marine Safety

The operator should ensure that all incidents involving fatalities, missing persons or injury/illness to personnel working on a Canadian flagged vessel or installation regulated under Part II of the Canada Labour Code are reported to the Canadian Coast Guard Regional Operations Centre who will then transfer the notification to Transport Canada Marine Safety. In addition, the master or owner of a Canadian flagged vessel, which has sustained damage affecting the seaworthiness or efficiency of that vessel, should report the matter directly to the regional director of Transport Canada Marine Safety.³⁸

5.4.4 Transport Canada Aviation

The operator should ensure that all aviation emergencies and incidents are reported to Transport Canada Aviation in accordance with their requirements as outlined on the following website:
<http://www.tc.gc.ca/eng/civilaviation/opssvs/emergencies-incidentreporting-menu.htm>

5.4.5 Royal Canadian Mounted Police

The operator should ensure that all incidents involving criminal activity (including serious injuries), terrorism, fatalities or missing persons are reported to the Royal Canadian Mounted Police (RCMP). The RCMP may be contacted at, (709) 772-5400 in Newfoundland & Labrador or (902) 426-7766 in Nova Scotia.

5.4.6 Environment Canada

Environment Canada administers regulations concerning various chemical substances and classes of substances

³⁸ Canada Shipping Act, 2001

under the *Canadian Environmental Protection Act*. The operator shall ensure that all incidents reported to Environment Canada in compliance with a federal regulation (e.g. halocarbon releases) are reported in writing to the relevant Board.

5.4.7 Workplace/Workers' Compensation

Employers' obligations under the WHSCA and WCA include mandatory reporting of injuries and illnesses to the Workplace Health, Safety and Compensation Commission (WHSCC) of Newfoundland and Labrador or to the Workers' Compensation Board (WCB) of Nova Scotia where circumstances may entitle a worker to compensation.³⁹ The legislation, guidelines, reporting information and standardized report forms are available from the WHSCC at www.whscc.nf.ca or from the WCB at www.wcb.ns.ca. Reporting of injuries or illnesses to these agencies should be in accordance with their relative requirements.

5.4.8 Certifying Authority

In accordance with the regulations, the operator shall ensure that any deterioration of the installation or any impairment or damage to critical equipment that could impair the safety of the installation or damage the environment are reported to the certifying authority and to the relevant Board.⁴⁰

6.0 Classification of Incidents Reported to the Boards

This section describes the classification of incidents that an operator shall report to the relevant Board and provides clarity on the manner in which these incidents shall be reported. An incident has been defined in these guidelines as:

“Any event that caused or, under slightly different circumstances, would likely have caused harm to personnel, an unauthorized discharge or spill or an imminent threat to the safety of an installation, vessel or aircraft. It also includes any event that impairs the function of any equipment or system critical to the safety of personnel, the installation, vessel or aircraft or any event that impairs the function of equipment or systems critical to the protection of the natural environment.”⁴¹

³⁹ C-NAAIA 152; WHSCA 56; CNSOPRAIA 157; WCA 86

⁴⁰ INST 67; DPR 76

⁴¹ OSH (NL) 15; OSH (NS) Element 1, Part 1, Section 1.1; INST 70; DPR 1(1) definition of “incident” and “near-miss”; GR 27 & 28; DVR 6

As a single incident may have multiple consequences (e.g., hydrocarbon release combined with a spill), the actual incident classifications that apply shall be specified for each incident. In addition, each incident must be assessed and assigned potential incident classifications where there may have been no actual consequences, or where the actual consequences were less serious than they might have been under similar circumstances.

Where appropriate, these guidelines have incorporated criteria from the International Regulator's Forum (IRF) Performance Measurement Working Group to facilitate measuring and comparing offshore safety performance among participating IRF countries. By incorporating international criteria for incident reporting, the Boards are able to perform effective trending and analysis that will aid in efforts to improve industry performance, not only within our own jurisdictions, but across jurisdictions. The Boards may share incident related information with other regulators, however, the manner of release and sharing of data will not contravene the relevant privilege provisions of information disclosure specified in the Accord Acts. Reports from the IRF performance measurement working group are posted on the IRF website:

<http://www.irfshoresafety.com/country/performance/>.

6.1 Fatality

All fatalities on an installation, vessel or aircraft as described in Section 3.0 shall be reported via the immediate verbal notification process described in Section 5.3.1⁴² and shall also be reported to the RCMP and the Province's Chief Medical Examiner. If the Chief Medical Examiner determines that the death was due to natural causes then this incident will not be classified as a fatality. Any work-related death that occurs within one year after the incident shall be reported via the written notification process described in Section 5.3.3 as a fatality.⁴³

6.2 Missing Person

All missing persons on an installation, vessel or aircraft as described in Section 3.0 shall be reported via the immediate verbal notification process described in Section 5.3.1⁴⁴ and shall also be reported to the RCMP.

6.3 Occupational Illness

An occupational illness is any abnormal condition or disorder caused by prolonged or repeated exposure to environmental factors associated with employment. Occupational illnesses may

⁴² OSH (NL) 15.4, OSH (NS) Element 2, Part 15, Section 15.4; INST 70; DPR 76(1); DVR 6 (j), GR 27

⁴³ IRF (www.irfshoresafety.com/country/performance/scope.aspx)

⁴⁴ OSH (NL) 15.4, OSH (NS) Element 2, Part 15, Section 15.4; INST 70; DPR 76(1); DVR 6 (j), GR 27

be caused by inhalation, absorption, ingestion or direct contact with a hazard, as well as exposure to physical and psychological hazards. The effects of ordinary workplace stress (i.e. inherent to job duties) are not considered to be a psychological hazard.⁴⁵ Occupational illnesses are different from occupational injuries (refer to Section 6.4) in that occupational injuries are caused by instantaneous events in the work environment or events close in time. Cases resulting from anything other than instantaneous events are considered occupational illnesses. Occupational illnesses shall be reported via the written notification process described in Section 5.3.3.⁴⁶

6.4 Occupational Injuries

An occupational injury is any injury which results from a work incident or from a single instantaneous exposure in the work environment. Conditions resulting from one-time exposure to chemicals or the aggravation of pre-existing medical conditions or previous injuries are also considered to be injuries. Injuries and fatalities that occur while the worker is onsite at the offshore installation or vessel and off duty/off-shift are included. Self-inflicted injuries or fatalities are not included.⁴⁷ Injuries that occur while a person is in transit to and from the offshore installation, vessel or aircraft are included (i.e. from the time a person boards a support craft prior to their hitch to the time they debark the support craft at the end of their hitch). There are four classifications of occupational injury for the purpose of these guidelines. They are as follows:

6.4.1 Major Injury

An occupational injury that results in one or more of the following:

- **Amputation:** Includes whole or partial amputation of parts of the body (does not include loss of fleshy tip of finger, nail, or tooth)
- **Skeletal injuries:** Includes bone fractures (including chipped or cracked bone or hairline fracture) and dislocation of shoulder, hip, knee or spine. They do not include fractures to fingers, toes, or a broken nose
- **Burns:** Only if the injured person becomes unconscious, is admitted to the hospital, or requires resuscitation
- **Injuries to internal organs:** Only if the injured person becomes unconscious, is admitted to the hospital, or requires resuscitation
- Eye injuries resulting in loss of sight (permanent or temporary)

⁴⁵ IRF (www.irfoffshoresafety.com/country/performance/scope.aspx); OSH (NL) 15.1 and OSH (NS) Element 2, Part 15, Section 15.1

⁴⁶ OSH (NL) 15.4; OSH (NS) Element 2, Part 15, Section 15.4

⁴⁷ IRF (www.irfoffshoresafety.com/country/performance/scope.aspx); OSH 15.1 and OSH (NS) Element 2, Part 15, Section 15.1.

- Eye injuries resulting from a penetrating eye injury or a chemical or hot metal burn to the eye
- Any acute illness caused by exposure to chemicals or biological agents or anything that produces a significant negative physiological effect e.g. decompression illness, loss of hearing, and radiation sickness
- Hypothermia or heat induced illness (unconsciousness)
- Any injury resulting in unconsciousness, resuscitation, or admittance to the hospital⁴⁸

Major injuries shall be reported via the immediate verbal notification process described in Section 5.3.1⁴⁹.

6.4.2 Lost/Restricted Workday Injury

An occupational injury other than a “Major Injury” which results in a person being unfit for work on any day after the day of occurrence of the injury or unfit for full performance of the regular job on any day after the injury. Any day includes rest days, weekend days, leave days, public holidays, or days after ceasing employment.⁵⁰ Lost/restricted workday injuries shall be reported via the written notification process described in Section 5.3.3. The number of lost/restricted workdays associated with an injury shall be reported on the quarterly statistics report described in Section 8.0.

6.4.3 Medical Treatment Injury

Cases that are not severe enough to be reported as lost/restricted workday cases but are more severe than requiring simple first aid treatment are considered to be medical treatment injuries.⁵¹ Medical treatment injuries shall be reported on the quarterly statistics report described in Section 8.0. Medical treatment injuries that have the potential for at least a lost/restricted workday injury shall be reported as a “Near Miss” via the written notification process described in Section 5.3.3.

6.4.4 First Aid Injury

Cases that are not sufficiently serious to be reported as medical treatment or more serious cases but nevertheless require minor first aid treatment, e.g. dressing on a minor

⁴⁸ IRF (www.irfshoresafety.com/country/performance/scope.aspx)

⁴⁹ OSH (NL) 15.4; OSH (NS) Element 2, Part 15, Section 15.4; INST 70, DPR 76(1); DVR 6 (j); GR 27

⁵⁰ IRF (www.irfshoresafety.com/country/performance/scope.aspx); OSH (NL) 15.4; OSH (NS) Element 2, Part 15, Section 15.4; INST 70; DPR 76(1); DVR 6 (j); GR 27

⁵¹ IRF (www.irfshoresafety.com/country/performance/scope.aspx); OSH (NL) 15.1 and OSH (NS) Element 2, Part 15, Section 15.1.

cut, removal of a splinter from a finger are considered to be first aid injuries.⁵² First aid injuries shall be reported on the quarterly statistics report described in Section 8.0. First aid injuries that have the potential for at least a lost/restricted workday injury shall be reported as a “Near Miss” via the written notification process described in Section 5.3.3.

6.5 Medical Evacuation (MEDEVAC)

A medical evacuation is required when the injury or illness is such that a person requires immediate medical attention at an onshore medical facility. Normally this involves the use of a dedicated helicopter, but may involve the use of a helicopter currently in the field. Any medical evacuations from an offshore installation or vessel shall be reported via the immediate verbal notification process described in Section 5.3.1 whether they are occupational or non-occupational⁵³. If the injury/illness is occupational, the operator shall provide the details of the condition in the report and report the injury/illness using the classifications noted above. However, if the injury/illness is determined to be non-occupational (i.e. the result of a medical condition not related to the injured person’s employment), the written notification shall contain a statement to this effect and the individual’s name. These instances will be recorded as non-occupational medevacs and shall not give cause to undertaking an investigation in accordance with Section 7.0.

6.6 Fire/Explosion

If a fire or explosion occurs on an installation, vessel or aircraft as described in Section 3.0 and results in an injury to personnel, major/damage impairment as described in Section 6.17 or if the fixed fire suppression systems are activated manually or automatically, the event shall be reported via the immediate verbal notification process described in Section 5.3.1.⁵⁴ All other fires or explosions that occur without these consequences shall be reported via the written notification process described in Section 5.3.3).

6.7 Collision

Any collision with an offshore installation, vessel or aircraft which results in an injury to personnel or major/damage impairment as described in Section 6.17, shall be reported via the immediate

⁵² IRF (www.irfoffshoresafety.com/country/performance/scope.aspx); OSH (NL) 15.1 and OSH (NS) Element 2, Part 15, Section 15.1.

⁵³ OSH (NL) 15.4 and OSH (NS) Element 2, Part 15, Section 15.4; DPR 76(1)

⁵⁴ OSH (NL) 15.4; OSH (NS) Element 2, Part 15, Section 15.4; INST 70; DPR 76(1); GR 27; DVR 6

verbal notification process described in Section 5.3.1.⁵⁵ All other collisions that occur without these consequences shall be reported via the written notification process described in Section 5.3.3.

6.8 Loss of Well Control

Loss of well control is any incident that results in:

- An uncontrolled release of formation or other well fluids
- An uncontrolled flow between two or more exposed formations (this includes uncontrolled flow resulting from failures of either surface or subsurface equipment or procedures) or
- A flow of formation or other well fluids through a diverter⁵⁶

All losses of well control where the duration of the uncontrolled or diverted flow is greater than 5 minutes shall be reported to the relevant Board via the immediate verbal notification process described in Section 5.3.1.⁵⁷

6.9 Well Control Incident

All kicks and well control incidents shall be reported to the Board via the immediate written notification process described in Section 5.3.2.⁵⁸ This includes:

- Any unintended entry of water, gas, oil, or other formation fluid into the wellbore (e.g. a kick)⁵⁹
- An increase in well pressure with closed blowout preventer
- Implementation of well kill procedures

6.10 Hydrocarbon Release

Hydrocarbon release refers to an unintentional or uncontrolled release of gas or liquid hydrocarbons from the processing, storage or offloading systems on a production or drilling installation. A hydrocarbon release does not include releases that result from processes designed into the production and processing systems to respond to upset conditions (e.g. blowdown system).⁶⁰ Two types of hydrocarbon releases shall be reported:

⁵⁵ OSH (NL) 15.4; OSH (NS) Element 2, Part 15, Section 15.4; DPR 76(1)

⁵⁶ IRF (www.irfoffshoresafety.com/country/performance/scope.aspx)

⁵⁷ IRF (www.irfoffshoresafety.com/country/performance/scope.aspx)

⁵⁸ OSH (NL) 15.4; OSH (NS) Element 2, Part 15, Section 15.4; INST 70; DPR 76(1); Definition adopted from Norwegian Risk Trends Project

⁵⁹ Definition obtained from http://www.osha.gov/SLTC/etools/oilandgas/glossary_of_terms/glossary_of_terms_k.html

⁶⁰ IRF (www.irfoffshoresafety.com/country/performance/scope.aspx)

- A **Major Hydrocarbon Release** is defined as:
 - A gas release rate above 1 kg/sec for at least 5 minutes duration
 - The amount of gas released is greater than 300 kg or
 - The amount of liquid released is greater than 300 L.

Major hydrocarbon releases shall be reported via the immediate verbal notification process described in Section 5.3.1.

- A **Significant Hydrocarbon Release** is defined as:
 - A gas release rate between 0.1 kg/sec and 1 kg/sec and lasts for 2 to 5 minutes
 - The amount of gas released is between 1 kg and 300 kg or
 - The amount of liquid released is between 5 L and 300 L.

Significant hydrocarbon releases shall be reported via the written notification process described in Section 5.3.3.⁶¹

For converting gas release volumes to gas release rates, the following formula can be utilized⁶²:

$$GR_{Rate} = 132.52 \cdot \left\{ \frac{d}{1000} \right\}^2 \cdot \sqrt{D_{Gas} - P_{Gas}}$$

where

GR_{Rate}	= gas release rate (kg/sec)
d	= equivalent hole diameter (mm)
D_{Gas}	= gas density (kg/m ³)
P_{Gas}	= operating pressure (bara)

6.11 Leak of Hazardous Substance

A hazardous substance is a chemical, biological or physical agent that, by reason of a property that the agent possesses, is hazardous to the safety or health of a person exposed to it (e.g. release of hydrogen sulphide (i.e. H₂S) in excess of 10 ppm, loss of containment of flammable materials, etc.) A leak of a hazardous substance on an installation, vessel or aircraft as described in

⁶¹ C-NAAIA 160, 161; CNSOPRAIA 165, 166; OSH (NL) 15.4; OSH (NS) Element 2, Part 15, Section 15.4; INST 70; GR 27, 28; DPR 76(1)

⁶² IRF (www.ifoffshoresafety.com/country/performance/scope.aspx)

Section 3.0 shall be reported via the written notification process described in Section 5.3.3.⁶³

6.12 Unauthorized Discharge

An unauthorized discharge occurs when:

- A substance or mixture is discharged from a production or drilling installation in an amount or at a concentration in excess of the limits described in the Operator's Environmental Protection Plan, or the substance or the manner of discharge is not described in that plan⁶⁴
- A toxic fluid is discharged from a diving installation or an accommodations installation⁶⁵
- A discharge occurs from a geophysical vessel that constitutes a threat to the environment⁶⁶

Unauthorized discharges greater than 25 litres in volume shall be reported via the immediate verbal notification process described in Section 5.3.1. Unauthorized discharges of 25 litres or less shall be reported via the immediate written notification process described in Section 5.3.2.

6.13 Spill

Any discharge of petroleum (including but not limited to crude oil, natural gas, condensate, lubricants, hydraulic oils, fuels, petroleum based synthetic drilling fluids, or any other refined petroleum product) that enters the sea shall be reported as a spill.⁶⁷

Spills greater than 25 litres in volume shall be reported via the immediate verbal notification process described in Section 5.3.1. Spills of 25 litres or less shall be reported via the immediate written notification process described in Section 5.3.2.

6.14 Adverse Environmental Conditions

A forecast of or actual physical environmental conditions or icebergs/pack ice that may result in or have resulted in loads or load effects in excess of those for which the offshore installation, vessel or aircraft was designed shall be reported to the relevant Board via the immediate verbal notification process described in

⁶³ IRF (www.irfshoresafety.com/country/performance/scope.aspx)

⁶⁴ In respect of the definition of pollution as per DPR 1(1); C-NLOPB/CNSOPB/NEB Environmental Protection Plan Guidelines, March 2011

⁶⁵ INST 70(1)

⁶⁶ GPR 27

⁶⁷ AIANL 160, 161; AIANS 165, 166; Newfoundland Offshore Area Oil and Gas Operations Regulations Section 6; DPR 76(1); INST 70; GR 27, 28

Section 5.3.1. The relevant Board shall also be notified via the immediate verbal notification process described in Section 5.3.1 if precautionary measures, such as down-manning, securing the well or depressurization of flow lines, is initiated due to threatening Physical Environmental Conditions.⁶⁸

6.15 Security

If there is a significant threat, breach or incident regarding security on an installation or vessel, the Chief Safety Officer and appropriate law enforcement agencies shall be notified as soon as possible. Security issues shall be reported via the immediate verbal notification process described in Section 5.3.1.⁶⁹

6.16 Implementation of Emergency Response Plans

The implementation of emergency response plans in response to an imminent threat to the safety of personnel, the safety of the installation, vessel or aircraft or to the environment shall be reported to the Boards via the immediate verbal notification process described in Section 5.3.1.⁷⁰ This would include, but not be limited to the following events:

- Overdue contact with a vessel or aircraft
- Person overboard
- Unauthorized vessel entering the safety zone of an installation or a vessel that is unable to be reached by radio or for which a support craft is sent to intercept
- Precautionary evacuation or downmanning
- Securing the well or depressurization of flow lines
- Emergency landings of helicopters
- Alert to search and rescue resources
- Deployment of search and rescue helicopter or requesting emergency response standby for landing in response to in-flight issues with a helicopter

6.17 Major Impairment/Damage

All damages or impairments that compromise the ongoing integrity or emergency preparedness (from a safety or environmental perspective) of an offshore installation, vessel or aircraft are considered reportable.⁷¹ This includes the impairment of critical systems but does not include the impairment of individual pieces of

⁶⁸ OSH (NL) 15.4 ; OSH (NS) Element 2, Part 15, Section 15.4; INST 70; DPR 76

⁶⁹ C-NLOPB "Requirements Respecting the Security of Offshore Facilities", Subsection 3(f), 9(j); CNSOPB Safety Directive - Security of Offshore Installation and Facilities

⁷⁰ OSH (NL) 15.4; OSH (NS) Element 2, Part 15, Section 15.4; INST 70; DPR 76(1)

⁷¹ IRF (www.irfshoresafety.com/country/performance/scope.aspx); OSH 15.4 (NL), OSH (NS) Element 2, Part 15, Section 15.4; INST 67 and 70; DPR 76

equipment, unless collectively or individually they have the ability to impair all or part of a critical system. It does not include the reporting of damage or impairment to equipment where there are redundant systems in place such that functionality and availability of the system is not lost. Any damage or impairment, which results in production shut-in or drilling suspension, is considered reportable. In addition, any damage or impairment to environmentally critical equipment, which results in the inability to meet established limits, is considered reportable. Some examples of major impairment/damages include (but are not limited to):

- Loss of mooring, stability or buoyancy
- Failure in dynamic positioning systems
- Impairment of fire protection system
- Explosion, collapse or bursting of any closed vessel or associated pipework.
- Impairment of waste treatment system
- Loss or damage to a support craft
- Failure of any load-bearing parts and critical components of cranes or elevating devices
- Structural damage to structures from impact, erosion, corrosion or cracks
- Total power failure, coupled with a start failure of emergency power generators.

Major impairment/damages shall be reported via the immediate verbal notification process described in Section 5.3.1.

6.18 Impairment/Damage to Critical Equipment

All impairments to at least one piece of safety or environmentally critical equipment on an offshore installation, vessel or aircraft shall be reported via the written notification process described in Section 5.3.3.⁷² This does not include the reporting of safety or environmentally critical equipment which has been taken out of service for planned inspection, testing and/or maintenance, unless it is out of service for a period longer than its expected unavailability period as determined by the installation's safety plan. If the damage or impairment compromises the ongoing integrity or emergency preparedness of an offshore installation, vessel or aircraft, then it should be reported as a "Major Impairment/Damage". Some examples of impairments include, but are not limited to:

⁷² OSH 15.4 (NL), OSH (NS) Element 2, Part 15, Section 15.4; INST 67 and 70; DPR 76.

- Failures or unsuccessful tests of the safety system of a production installation or of any component of the safety system⁷³
- Impairment of firefighting or lifesaving equipment
- Failure of load bearing parts of containers, lifting devices, elevating devices or loose lifting gear
- Failure of primary and/or secondary retention of equipment at height
- Damage to subsea equipment

Each incident involving impairments to safety or environmentally critical equipment shall be investigated, its root cause and causal factors identified and corrective action taken.⁷⁴ A final investigation report is not required to be submitted, unless the Boards have requested one or have agreed to another method for communication of this information.

6.19 Contact with Fishing Gear

For geophysical, geological, environmental or geotechnical programs, any contact with fishing gear shall be reported via the written notification process described in Section 5.3.3.⁷⁵ In addition to the information requirements described in 5.3.3, the incident description should include the exact time and location of initial contact and loss of contact and a description of any identifying markings which may be observed on affected gear. These instances may not give cause to undertaking an investigation as described in Section 7.0 of this guideline.

6.20 Helicopter Occurrences

All occurrences where a helicopter has to return to base or suspend operations upon landing at an offshore facility, as a result of an issue with the aircraft or the flight crew or cases where the designated search and rescue helicopter becomes unavailable shall be reported to the Boards.

The following incidents involving helicopters in the offshore area shall be reported via the immediate verbal notification process described in Section 5.3.1 and investigated in accordance with Section 7.0:⁷⁶

- A “reportable aviation accident” as per Section 2(1) of the Transportation Safety Board Regulations⁷⁷

⁷³ DPR 76; INST 67

⁷⁴ DPR 76(2)(a); INST 67

⁷⁵ GR 27, 28

⁷⁶ OSH (NL) 15.4(d)&(g), OSH (NS) Element 2, Part 15, Section 15.4(d)&(g); DPR 1(1) definition of “incident” and “near-miss”; DPR 76

⁷⁷ <http://www.tsb.gc.ca/eng/incidents-occurrence/aviation/index.asp>

- Fatality, missing person or major injury as per Sections 6.1, 6.2 or 6.4.1
- Fire/explosion or collision meeting criteria for immediate verbal notification as per Sections 6.6 and 6.7
- Adverse environmental conditions as per Section 6.14
- Implementation of emergency response plans in response to an imminent threat to the safety of personnel or the helicopter as per Section 6.16 (e.g. helicopter SAR or airport emergency response resources are deployed for a helicopter flight occurrence or as a precaution)
- Major impairment/damage that compromise the ongoing integrity or emergency preparedness of the helicopter as per Section 6.17 (e.g. loss of engine, loss of communication systems, impairment to liferafts, etc)
- Near miss with potential for a fatality (i.e. potential for loss of the helicopter)

The following incidents involving helicopters in the offshore area shall be reported via the written notification process described in Section 5.3.3 and investigated in accordance with Section 7.0:

- A “reportable aviation incident” as per Section 2(1) of the Transportation Safety Board Regulations⁷⁸
- Occupational illness or lost/restricted workday injury as per Sections 6.3 and 6.4.2
- Fire/explosion or collision meeting criteria for immediate written notification as per Section 6.6 and 6.7
- Leak of hazardous substance as per Section 6.11
- Impairment/damage to critical equipment as per Section 6.18 (e.g. impairment of safety critical sensors)
- Near miss as per Section 6.21 (e.g. small leaks from lubrication systems for safety critical equipment, improper loading of a helicopter, improper carrying of freight in a passenger cabin, flying with impaired personal protective equipment)

In addition, if an incident has not been reported to the Boards as described above, the Boards must be notified in each case where:

- A helicopter has to return to base or suspend operations upon landing at an offshore facility, as a result of an issue with the aircraft or the flight crew
- The designated SAR helicopter resources become unavailable during a passenger flight
- Passengers are debriefed following a flight⁷⁹

⁷⁸ OSH (NL) 15.4(d)&(g), OSH (NS) Element 2, Part 15, Section 15.4(d)&(g); DPR 1(1) definition of “incident” and “near- miss”; DPR 76; <http://www.tsb.gc.ca/eng/incidents-occurrence/aviation/index.asp>

⁷⁹ Recommendation # 8 of the “Offshore Helicopter Safety Inquiry”

- The helicopter contractor notifies the operator (e.g. notice to operators) in relation to a helicopter flight occurrence
- The operator becomes aware of a media report, or intends to engage the media (e.g. press release / press conference) in relation to a helicopter flight occurrence

6.21 Near Miss

All incidents that, if under slightly different circumstances, would likely have had potential to result in the following on an installation, vessel or aircraft shall be reported as near misses:

- An occupational injury/illness which could be classified as at least a lost/restricted workday injury
- Unauthorized discharge or spill
- Hydrocarbon release
- Fire/explosion
- Major impairment/damage to safety or environmentally critical equipment⁸⁰

A near miss shall be reported via the written notification process described in Section 5.3.3⁸¹. However, if the near miss had a potential for a fatality it shall be reported via the immediate verbal notification process described in Section 5.3.1. Examples of near misses include, but are not limited to the following:

- Missing or ineffective safety or environmentally critical barrier
This would include, but not be limited to failures in personal protective equipment and failures in management system elements such as control of work, management of change, maintenance, competence assurance, etc.⁸²
- Dropped objects in areas where personnel could be present
- A large object drifting in an uncontrolled manner in dangerous proximity to an installation
- Free fall of elevating devices⁸³
- Unplanned musters in response to the emergency shutdown of a facility for false alarms. On production or drilling installations, if there is a potential for hydrocarbon releases or pollution and may result in impairment/damage to critical equipment then this shall be reported via the written

⁸⁰ OSH (NL) 15.4, OSH (NS) Element 2, Part 15, Section 15.4; INST 70; DPR 1(1) definition of "incident" and "near-miss"; DPR 76

⁸¹ OSH 15.4 (NL); OSH (NS) Element 2, Part 15, Section 15.4; INST 70; DPR 76

⁸² A barrier is a technical, human or organizational safeguard that is put in place to prevent, mitigate or control health, safety or environmental risks. Barriers can be equipment, personnel or procedures identified during both major and on-site risk assessments which must be implemented to reduce risk to as low as reasonably practicable. This includes the design, maintenance and inspection of equipment, implementation of operating and maintenance procedures and training and competency of personnel. Barriers can also be those elements of a management system that are put in place to reduce risk by seeking to identify and improve deficiencies within a management system.

⁸³ OSH (NL) Part 4; Section 15.4

notification process described in Section 5.3.3. If there is no potential for a hydrocarbon release, pollution or impairment/damage to critical equipment (e.g. there is no emergency shutdown associated with a general platform alarm) then this shall be reported on the daily report for the associated installation.⁸⁴

7.0 Investigation of Incidents and Reporting to the Boards

7.1 Investigation Team

The investigation team should include, as appropriate, representatives of the operator, the facility owner, a worker representative from the committee (or the representative) and other expertise as required. The lead investigator should have formal training in the conduct of an investigation and the investigation process, should have formal management system training and should not have been involved with or contributed directly or indirectly to the incident. Formal incident investigation and management system training is also recommended for all members of an investigation team.⁸⁵ Dependent on the nature of the incident, consideration should be given to ensuring that personnel with particular expertise (i.e. technical, human and organizational) are engaged as part of the incident investigation.

7.2 Participation by the Committee or Representative

It is the Operator's responsibility to ensure committees or representatives can carry out their obligations with regard to health and safety related incidents and can request to be involved in any incident investigation under its mandate.⁸⁶ The operator should involve the committee or representative in investigations of all incidents relative to the committee or representative's mandate. In order that the committee or representative are effective in reviewing investigation reports and participating in incident investigations, the operator should provide appropriate management system training and incident investigation training to these individuals.⁸⁷ Once the investigation has been completed, the committee or representative shall be provided with a copy of the associated investigation report. The committee or representative may make recommendations in respect to any incident investigation that is related to their mandate.⁸⁸

⁸⁴ OSH (NL) 15.4; OSH (NS) Element 2, Part 15, Section 15.4; INST 70; DPR 76(1) & 84; DPG 84

⁸⁵ CAPP TQSP 3.2.9; DPR 72(a)

⁸⁶ OSH (NL) 15.3; OSH (NS) Element 2, Part 15, Section 15.3

⁸⁷ WHSCC Occupational Health and Safety Committees Handbook, July 2004; CAPP TQSP 3.2.9

⁸⁸ C-NLOPB Other Requirements Respecting Occupational Health & Safety; OSH (NS) Element 1

7.3 Conduct of the Investigation

Operators who are authorized to conduct drilling and production activities shall ensure that installations and support craft are designed, constructed, tested, maintained and operated to ensure that all incidents are prevented.⁸⁹ In addition, operators who are authorized to conduct drilling and production activities shall ensure that any incident or near-miss is investigated, its root cause and causal factors identified and corrective action taken to prevent their recurrence.⁹⁰ Operators who are authorized by the Boards to conduct other activities in the offshore areas are required to submit investigation reports for all incidents, unless specified otherwise in Section 6.0.

The following outlines the Board's expectations with respect to all incident investigations:

7.3.1 Preservation of Evidence

For serious incidents, operators should have procedures in place which ensure the suspension of all operations and for securing the scene until such time as the installation owner, operator, Board and other authorities, as applicable, allow the scene to be disturbed.

7.3.2 Sequence of Events

Once it is determined it is safe to do so and an incident investigation team has been assembled, the incident investigation team should collect all relevant evidence and facts related to the occurrence of an incident. This may include but not be limited to collection of physical evidence (such as procedures and work instructions, applicable policies, photographs, paper and digital records, technical specifications, vendor manuals, training and competency records, failed components, environmental conditions, quality assurance reports, audit/observation records, incident reports from similar incidents, etc), interviews with personnel that were directly involved in the incident or may have information to contribute and any other relevant information. Based on the information collected, the incident investigation team should reconstruct the sequence of events that led up to the incident, the incident itself and the response which was taken following the incident. The sequence of events should be used in interviews with personnel who were

⁸⁹ DPR 25(a), 45(a) and 45(b)

⁹⁰ DPR 5(2)(f) & 76(2)(a)

directly or indirectly involved with an incident. It is the Board's expectation that incident descriptions cover the who, what, when, where and why of an incident occurrence.

7.3.3 Causal Factor(s)

Typically, a causal factor is defined as any issue or element associated with the incident that, if corrected, could have prevented the incident from occurring or would have significantly mitigated its consequences. It could also be a barrier or safeguard that was either not in place or was in place, but was ineffective at preventing the incident.⁹¹ By reconstructing and analyzing the sequence of events and associated evidence leading up to and following an incident, the investigation team will be in a better position to identify the causal factors and to reinforce the measures that worked effectively in preventing or reducing the severity of an incident. It is the Board's expectation that all causal factors be identified in the body of the incident investigation report.

7.3.4 Root Cause(s)

Typically, a root cause is defined as a cause for which corrective measures will prevent or reduce the probability of a recurrence of an incident. It is also defined, as the most basic cause (or causes) that can reasonably be identified that management has control to fix and, when fixed, will prevent (or significantly reduce the likelihood of) the problem's recurrence.⁹² In every incident investigation, the investigation team should look carefully at the management system elements that may have contributed to the occurrence or severity of an incident. Understanding how management system elements contributed to an incident is critical to the prevention of future failures as management system problems have the potential to increase the likelihood of many types of incidents. For each causal factor, it is the Board's expectation that the investigation team determine the root cause and that root causes are selected using proven methods for conducting "root cause analysis" and that personnel are trained in the use of this method. Root cause(s) should point to making improvements to the management system that will not only reduce the occurrence of this event, but similar events.

⁹¹ TapRoot® The System for Root Cause Analysis, Problem Investigation and Proactive Improvement, 2000, Mark Paradies and Linda Unger, Chapter 3, pg. 45

⁹² TapRoot® The System for Root Cause Analysis, Problem Investigation and Proactive Improvement, 2000, Mark Paradies and Linda Unger, Chapter 3, pg. 52

7.3.5 Corrective Actions

A corrective action is defined as an action taken to eliminate or mitigate the cause of a system deficiency, hazard or risk (e.g. will fix an existing event) or it is an action (commonly referred to as a preventive action) taken to reduce the likelihood that an underlying system deficiency or hazard will cause a similar event (e.g. will fix a potential event).⁹³

Corrective actions should be specific, measurable, achievable, reasonable, and timely (SMART), and must be effective in preventing or reducing the likelihood of recurrence of existing and potential events. It is the Board's expectation that immediate corrective actions are taken and broader corrective action(s) are assigned that will address the root cause(s) associated with an incident. The investigation team should determine an appropriate timeline for the implementation of corrective actions. The timely implementation of corrective actions is a critical step in preventing incident recurrence. Following a specified period of implementation, corrective actions should be followed-up to verify their effectiveness.⁹⁴

7.3.6 Level of Investigation

All incidents should be investigated to a level appropriate to the potential consequences and not solely based on the actual consequences. Investigations should identify the underlying root causes of an incident and not stop at the immediate or noticeable causes.

If a technical flaw, procedural flaw or failure by an individual is identified erroneously as a root cause, this may lead to the assignment of corrective actions that do not address underlying problems. If the root cause(s) and associated corrective actions are not appropriately identified this may eventually lead to a major accident (e.g. Texas City Refinery Explosion, Deepwater Horizon). The incorrect assignment of root cause and associated corrective actions can lead to the potentially disastrous belief that underlying problems have been solved, when only symptoms have been addressed.⁹⁵

⁹³ Adopted from definition of corrective and preventive actions under ISO 9001:2000, CSA Z1000-06 and ISO 14001:2004

⁹⁴ TapRoot® The System for Root Cause Analysis, Problem Investigation and Proactive Improvement, 2000, Mark Paradies and Linda Unger, Chapter 3, pg. 81

⁹⁵ Section 1.2.1, 9.4.16 & 10.1.2 of the US Chemical Safety and Hazard Investigation Board Investigation Report of the March 23, 2005 BP Texas City Refinery Explosion and Fire, Report No. 2005-04-I-TX, March 2007

7.4 Investigation Reports Submitted to the Boards

The operator shall submit a completed incident investigation report with all the required information to the relevant Board and the committee or representative as soon as possible, and in any event, no later than twenty-one days following an incident.⁹⁶

For the purposes of submitting investigation reports, the Boards have prescribed a standard [Incident Investigation Report](#)⁹⁷ form, which is to be submitted in conjunction with the operator's internal investigation report.⁹⁸ The operator's internal investigation report is acceptable to be submitted as long as it includes all prescribed information and the report is submitted in an electronic format that is searchable. The investigation form and operator's report may be submitted by electronic mail to either the C-NLOPB at incident@cnlopb.ca or to the CNSOPB at incident@cnsopb.ns.ca. To ensure receipt of information sent to the above email accounts, emails should be no greater than 10 MB in size.

The investigation report should include, but not be limited to the following information and should correct, if necessary, any erroneous information submitted in the incident notification report:

- Date and time of the incident
- Operator
- Operator's internal reference number
- The installation, vessel or aircraft name
- Type of installation, vessel or aircraft (e.g. MODU, fixed installation, standby/supply vessel, helicopter, etc)
- Location (e.g. field, well or subsea manifold/gathering facility)
- Operation in progress (e.g. drilling/workover, geophysical survey, hydrocarbon production, ice management, maintenance, sea transport/standby)
- Actual and potential incident classifications (as per Section 6.0)
- For injuries/illnesses:
 - Name of affected worker⁹⁹
 - Nationality
 - Occupation
 - Employer

⁹⁶ OSH (NL) 15.4, OSH (NS) Element 2, Part 15, Section 15.4; INST 70; DVR 6; GR 27; P&C 67; DPR 76(2)

⁹⁷ http://www.cnsopb.ns.ca/sites/default/files/documents/data/incident_report.doc

⁹⁸ C-NAAIA 49; CNSOPRAIA 52; OSH (NL) 15.4, OSH (NS) Element 2, Part 15, Section 15.4; DPR 76, INST 70, DVR 6 (j), GR 27

⁹⁹ Pursuant to C-NAAIA 119 and CNSOPRAIA 122, providing the name of the affected worker is not a violation of privacy legislation, and it is necessary to allow the Board to monitor and follow-up on reported injuries and potential injuries. All injury reports are privileged pursuant to the Accord Acts.⁹⁹ If the operator has concerns of internet security, the names of affected workers may be submitted to the Board via means other than email.

- Duration of lost/restricted workdays (known or anticipated).
The final number of lost /restricted workdays shall be reported on the quarterly statistics report.
- Nature and severity
- Indicate if a medevac was provided
- For hydrocarbon releases, leaks of hazardous substances, unauthorized discharges and spills:
 - Material(s) spilled / released and volume and for ongoing releases, associated leakage rate
 - Source of spill/release
 - Post incident monitoring (environmental receptors/endpoints at risk)
 - Mitigation or response measures and their effectiveness
 - Environmental impacts
- For damages:
 - Type of equipment involved
 - Severity of damage (no impairment, impairment to critical equipment, impairment to critical equipment system, shutdown required)
 - Time to repair and mitigative measures in place until repaired
- Description of incident (including events leading up to the incident, the incident and events following the incident, including emergency response). The description should also include a summary of review of similar incidents (refer to Section 7.3 for further guidance)
- Description of causal factors (refer to Section 7.3.3 for further guidance)
- Name and titles of investigation team members:
 - Investigation Team Lead
 - Individuals who investigated the occurrence
 - Operator's representative
 - Committee member or Representative
- Relevant physical environmental factors at the time of the incident (maximum combined seas, significant wave height, temperature, visibility, wind, precipitation)
- Work schedule contributors (e.g. extensive overtime, fatigue, stress) for individuals involved in the incident).
- Experience contributors (e.g. training, competency, onshore/offshore experience, collective competency) for individuals involved in the incident).
- Description of the root cause(s) (refer to Section 7.3.4 for further guidance)
- Corrective actions taken to address root cause(s) (refer to Section 7.3.5 for further guidance)
- Identification if further investigation is required
- For diving incidents:

- The supplementary [Diving Incident Report](#)¹⁰⁰ form is also required to be completed and submitted.¹⁰¹

If further investigation is required (e.g. metallurgical analysis of a failed component), an incident investigation report is still required within twenty-one days. Operators are required to submit their completed investigation report to date, which includes all the above information. Any information left to be investigated and the associated reason for deferral shall be noted on the investigation report. Following completion of the further investigation, the final information regarding the root causes and additional actions to be taken shall be submitted.

If a change is to be made to an incident investigation report following management review, committee (or representative) review or operator review, the changes should be reviewed with and accepted by either the investigation team or the committee. Updated incident investigation reports following review and acceptance by the investigation team are to be provided to the relevant Board and the committee of the respective installations.

8.0 Quarterly Statistics Reports for the Boards

Operators shall submit a quarterly statistics report within 15 days of the end of each quarter throughout the year. In addition, the operator shall submit a final statistics report within 15 days of the date of completion of a program.

This report shall contain a list of major injuries, lost/restricted workday injuries, occupational illnesses, medical treatment injuries and first aid injuries along with exposure hours.¹⁰² Classifications shall be in accordance with Section 6.0. The report shall also contain a summary report of the number of lost/restricted workdays associated with a particular injury/illness by incident date and installation, vessel or aircraft. These statistics shall be recorded on the report prescribed by the Boards and emailed to either the C-NLOPB at incident@cnlopb.ca or to the CNSOPB at incident@cnsopb.ns.ca. The [Quarterly Statistics Report](#)¹⁰³ form is posted on C-NLOPB's website at www.cnlopb.ca and CNSOPB's website at www.cnsopb.ns.ca.

Exposure hours are calculated as follows:

- Installation/Vessel/Aircraft

$$\text{Exposure Hours} = POB - 12 - N$$

¹⁰⁰ http://www.cnsopb.ns.ca/sites/default/files/pdfs/diving_incident.doc

¹⁰¹ DVR 6(1)(i) and (j), SCHEDULE III

¹⁰² OSH (NL) 15.6; OSH (NS) Element 2, Part 15, Section 15.6; DVR 6(1)(k)

¹⁰³ http://www.cnsopb.ns.ca/data/quarterly_statistics_report.xls

- Personnel Transport

$$\text{Exposure Hours} = (6 \times F) + [(\# \text{ of Personnel Transported}) \times T]$$

In the above calculations:

- For clarification on what constitutes an installation, vessel or aircraft refer to Section 3.0
- For clarification on when reporting starts and ends refer to Section 5.3
- *POB* represents the average number of personnel on board during the period, but does not include the number of personnel being transported
- *T* represents the average transport time per return trip
- *N* represents the number of days worked during the period
- For personnel transport, $6 \times F$ is used to account for the flying time of pilots, where 6 is a constant representing an average return flight time of three hours with two pilots and *F* represents the number of flights for the transportation of personnel

9.0 Annual Reports for the Boards

In accordance with the Drilling and Production Regulations, the operator shall ensure that no later than March 31 of each year, an annual safety report¹⁰⁴ and an annual environmental report¹⁰⁵ based on the preceding year are submitted to the Board. Detailed guidance on the scope of these reports is provided in Sections 87 and 88 of the Drilling and Production Guidelines.

¹⁰⁴ DPR 88; OSH (NL) 15.6; OSH (NS) Element 2, Part 15, Section 15.6

¹⁰⁵ DPR 87

10.0 References

1. CAPP Canadian East Coast Offshore Petroleum Industry Standard Practice for the Training and Qualification of Personnel, November 2010
2. Canada-Newfoundland Atlantic Accord Implementation Act, 1987 (C-NAAIA)
3. Canada-Newfoundland and Labrador Atlantic Accord Implementation (Newfoundland and Labrador) Act, 1990
4. Canada-Newfoundland and Labrador “Offshore Helicopter Safety Inquiry”, Volume 1, October 2010
5. Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation Act, 1988 (CNSOPRAIA)
6. Canada-Nova Scotia Offshore Petroleum Resources Accord Implementation (Nova Scotia) Act, 1987
7. Canada Shipping Act, 2001
8. Canadian Environmental Protection Act, 1999
9. CSA Z1000-06 Occupational Health and Safety Management Systems
10. C-NLOPB Other Requirements Respecting Occupational Health & Safety, April 2007
11. C-NLOPB/CNSOPB Drilling and Production Guidelines, March 2011
12. CNSOPB Occupational Health and Safety Requirements, December 2000
13. C-NLOPB/CNSOPB/NEB Environmental Protection Plan Guidelines, March 2011
14. C-NLOPB/CNSOPB/NEB Safety Plan Guidelines, March 2011
15. International Regulator’s Forum (IRF) Performance Measurement Project (www.irfoffshoresafety.com/country/performance/scope.aspx)
16. ISO 9001.2000 Quality Management Systems
17. ISO 14001:2004 Environmental Management Systems
18. Newfoundland Offshore Area Petroleum Diving Regulations, 1988
19. Newfoundland Offshore Area Petroleum Geophysical Regulations, 1995
20. Newfoundland Offshore Area Petroleum Occupational Safety and Health Regulations, 1989 (Draft)
21. Newfoundland Offshore Area Oil and Gas Operations Regulations, 1988
22. Newfoundland Offshore Petroleum Drilling and Production Regulations, 2009
23. Newfoundland Offshore Petroleum Installation Regulations, 1995
24. Nova Scotia Offshore Area Petroleum Geophysical Operation Regulations, 1995
25. Nova Scotia Offshore Area Petroleum Diving Regulation, 1995
26. Nova Scotia Offshore Petroleum Drilling and Production Regulations, 2009
27. Nova Scotia Offshore Petroleum Installations Regulations, 1995
28. NEB\C-NLOPB\CNSOPB Offshore Waste Treatment Guidelines, 2010
29. “Requirements Respecting the Security of Offshore Facilities”, April 2007, C-NLOPB
30. TapRoot® The System for Root Cause Analysis, Problem Investigation and Proactive Improvement, 2000, Mark Paradies and Linda Unger
31. US Chemical Safety and Hazard Investigation Board Investigation Report of the March 23, 2005 BP Texas City Refinery Explosion and Fire, Report No. 2005-04-I-TX, March 2007
32. WHSCC Occupational Health and Safety Committees Handbook, July 2004