

OFFSHORE MAJOR ACCIDENT REGULATOR



Offshore Petroleum Regulator
for Environment & Decommissioning



Title	HSE Energy Division – Offshore Selection Criteria for Investigation of Notified & Reported Incidents Including Major Hazard Precursor Events		
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1.0 SCOPE

- 1.1 [HSE's published Incident Selection Criteria](#) indicates that HSE will select for investigation all relevant major hazard precursor events as identified within the HSE business plan, and the relevant work plans of each HSE operational directorate.
- 1.2 This document establishes the criteria to be used in Energy Division for selecting offshore oil and gas related incidents for investigation, including major hazard precursor events. It complements [HSE's published Incident Selection Criteria](#), which, in the event of any doubt in particular circumstances, take precedence.

2.0 POINTS RELEVANT TO SELECTING INCIDENTS FOR INVESTIGATION

- 2.1 Decision Taker - In Energy Division – Offshore, a decision to select, or not, a notified or reported incident must be taken at Band 2 Inspector level, or above, or by a Band 3 inspector deputising for a Band 2. The decision taker is normally an Inspection Management Team (IMT) leader or a Diving, Wells, Pipelines or Occupational Health Team Leader as appropriate.
- 2.2 Decision Timescales - The decision whether to investigate should be made in accordance with [SPC/Admin/84](#), which requires a decision within: 1 hour for a fatality; 3 working days for a major injury, occupational disease, dangerous occurrence or other serious incident; 5 working days for other incidents. Timescales are from when the Band 2 receives notification, or as soon as the information essential to making a decision becomes available.
- 2.3 Decision Recording – For incidents meeting the [SCR2015 definition of a major accident](#) and for major accident precursor events described in this document, the reasons and justification for selecting an incident for, or not for, investigation **must** be recorded by the decision taker and placed as a note on the COIN Case. This is required for regulatory audit-trail purposes and as part of complying with the obligations placed on HSE and OPRED under the [Implementing Regulation](#) [Implementing Regulation](#) for reporting statistics. . Example decision notes are provided in Section 11.0. The decision taker should inform, consult or involve relevant Energy Division and OPRED topic specialists and teams to assist in decision making judgements as necessary. Guidelines for such involvement are provided in this document. The investigation decision taken should subsequently be notified to all Energy Division and OPRED teams for their awareness, see section 2.6.
- 2.4 Investigation Procedure - Where a decision to select an incident for investigation is made, the [Incident Investigation Process](#) must be followed. [HSE's Corporate Investigation Procedure](#) must be used to investigate all incidents selected for investigation when HSE has primacy.
- 2.5 Initial Inquiries – must be undertaken to inform a decision to select an incident for investigation if one cannot be taken according to these criteria and based on the information first notified or reported by the duty holder. Refer to the [Additional Guidance in Stage 2 of HSE's Operational Procedures](#).
- 2.6 Communicating Investigation Decisions Across the OMAR Competent Authority – HSE and OPRED both have regulatory and enforcement responsibility and powers to regulate SCR2015 and PFEER and work together to provide a single regulatory face through the OMAR partnership. Each needs to keep the other appropriately informed. Investigation decisions HSE takes in relation to installations

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operating in external waters within scope of the SCR2015 regime should be communicated to OPRED. Investigation decisions should be communicated to: bst@beis.gov.uk

3.0 MAJOR ACCIDENTS

The circumstances leading to all notifications or reports of a major accident should be selected for investigation.

3.1 An offshore major accident is defined differently in law depending if it occurs in 'external' or 'internal' waters, but the definitions are nearly identical for all practical purposes. External waters are the territorial sea adjacent to Great Britain and any designated area within the United Kingdom continental shelf (UKCS). Internal waters are areas that do not meet the definition of external waters, for example river estuaries, sea lochs, the Minches, etc. A separate legislative regime applies in Northern Ireland, including the territorial sea around it. For relevant activities in the NI territorial sea, HSE will provide operational support to HSENI.

3.2 Regulation 2 of [SCR2015](#) defines a major accident in external waters.

3.3 Major Accident Definitions

SCR2015 Definition Applicable in External Waters	SCR2005 Definition Applicable in Internal Waters
<p><i>"major accident" means –</i></p> <p>(a) <i>an event involving a fire, explosion, loss of well control or the release of a dangerous substance causing, or with a significant potential to cause, death or serious personal injury to persons on the installation or engaged in an activity on or in connection with it;</i></p> <p>(b) <i>an event involving major damage to the structure of the installation or plant affixed to it or any loss in the stability of the installation causing, or with a significant potential to cause, death or serious personal injury to persons on the installation or engaged in an activity on or in connection with it;</i></p> <p>(c) <i>the failure of life support systems for diving operations in connection with the installation, the detachment of a diving bell used for such operations or the trapping of a diver in a diving bell or other subsea chamber used for such operations;</i></p> <p>(d) <i>any other event arising from a work activity involving death or serious personal injury to five or more persons on the installation or engaged in an activity on or in connection with it; or</i></p> <p>(e) <i>any major environmental incident resulting from any event referred to in paragraph (a), (b) or (d),</i></p> <p><i>and for the purposes of determining whether an event constitutes a major accident under paragraph (a), (b) or (e), an installation that is normally unattended is to be treated as if it were attended;</i></p>	<p><i>"major accident" means –</i></p> <p>(a) <i>a fire, explosion or the release of a dangerous substance involving death or serious personal injury to persons on the installation or engaged in an activity on or in connection with it;</i></p> <p>(b) <i>any event involving major damage to the structure of the installation or plant affixed thereto or any loss in the stability of the installation</i></p> <p>(c) <i>the collision of a helicopter with the installation</i></p> <p>(d) <i>the failure of life support systems for diving operations in connection with the installation, the detachment of a diving bell used for such operations or the trapping of a diver in a diving bell or other subsea chamber used for such operations; or</i></p> <p>(e) <i>any other event arising from a work activity involving death or serious personal injury to five or more persons on the installation or engaged in an activity in connection with it;</i></p>

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3.4 Interpretation of Terms

- 3.4.1 *“Significant Potential”*. In reaching a decision to select, or not, an incident for investigation on the basis of significant potential, judgements should be based on a comparison between the reported circumstances plus evidence from any initial inquiries and paragraph 4 of [HSE's published Incident Selection Criteria](#) (i.e. likelihood of a serious breach...including incidents considered liable to give rise to serious public concern with an initial EMM enforcement expectation of a notice or a prosecution). This is particularly relevant to notified or reported incidents featuring “...significant potential to cause death or serious personal injury..”
- 3.4.2 *“Serious Personal Injury” or “Major Injury”*. This is equivalent to the specified injuries that meet the conditions listed in [HSE's published Incident Selection Criteria](#), which are the same as a major injury defined by [RIDDOR Regulation 4\(1\)](#)
- 3.4.3 *“Installation” and “Activities in Connection With”*. For legal definitions relevant to these terms refer to [Regulation 4 of the Application Outside Great Britain Order 2013](#), [Regulation 3 of MAR](#), [Schedule 13 of SCR2015](#) (which extensively amends MAR) and [Regulation 2 of SCR2015](#).
- 3.4.4 *“Major Environmental Incident”*. Is defined by [Regulation 2 of SCR2015](#)
- 3.4.5 *“Work Offshore”*. Is defined by [RIDDOR Regulation 2\(3\)](#), which states that, “...a person at an offshore workplace is deemed to be at work at all times when that person is at that workplace in connection with that person's work.”
- 3.5 **Relationship between Major Accident, Major Incident and Major Incident Response** – Confusion can occur about the meaning and relationship of these terms and who is responsible for deciding when the relevant criteria are met. An offshore incident that meets the definition of a major accident is a major incident (this includes “significant potential” for one). It is for the Competent Authority, not the duty holder, to decide if any reported event is a major accident. A major accident, as defined, does not necessarily require a major incident response, [which could be declared by HSE](#) as required in response for any type of incident, but is usually unnecessary for most offshore major accidents.

4.0 MAJOR ACCIDENT PRECURSOR EVENTS

The circumstances leading to all notifications or reports by an employer or duty holder of the following types of occurrence should be selected for investigation. Major accident precursor events include:

- 4.1 **Notifications made under [SCR2015 Regulation 29](#)** that describe circumstances aligning with the definition of a major accident, and particularly where there was significant potential to cause a major accident.
- 4.1.1 *Note:* A duty holder must notify the competent authority, by the quickest practical means, where it has taken suitable measures to reduce risk to as low as is reasonably practicable when an activity significantly increased the risk of a major accident. An example of such a situation may be failure of multiple barriers against one of the major accident scenarios. Suitable action may range from suspension of activities through to the introduction of additional control measures. Regulation 29 does not require submission of a report within 10 working days, unless the circumstances trigger other incident reporting provisions (e.g. under [RIDDOR](#), [DCR](#), [MAR](#), [Implementing Regulation](#))
- 4.2 **A Fire, Explosion or Unintended Release of Oil, Gas or Hazardous Substances (ignited or not)** - which had the potential to cause a major accident as defined. This includes unintended releases or accumulations of flammable and toxic substances, including from a well or pipeline forming part of the installation. Section 9.0 provides for further guidance on making investigation decisions for these types of incident and supersedes the earlier [SPC/Tech/OSD/48](#) - Offshore hydrocarbon release investigation policy. *Investigation decision normally by IMT. Teams or topics to inform, consult, or assist in decision judgements: FERA, OPRED EOC, EER, Mechanical, E&C and, as appropriate, Process Integrity, Wells, Pipelines.*

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- 4.3 **A Dangerous Occurrence in Relation to a Borehole or Well** – as detailed by [RIDDOR Schedule 2, Part 1](#) Paragraph 20; which caused or had the potential to cause a major accident as defined, or where there is any other regulatory concern or uncertainty about the severity of a well safety or integrity incident, either because of its potential consequences or because human or technical failure may be a contributory factor. *Investigation decision normally by Wells team. Teams or topics to consult inform or assist in decision judgements: IMT (duty holder), IMT (well operator), OPRED EOC, FERA, EER.*
- 4.4 **A Lost or Unavailable SECE** – which caused, had the potential to cause, or would have failed on demand to prevent or to mitigate a major accident as defined where: (a) the SECE failed during an incident or; (b) the SECE was reported by the Independent Verifier to the duty holder as lost or unavailable (meaning that it is not meeting its required performance standard) and the duty holder took immediate remedial action to reduce risks to an acceptable level.
- 4.4.1 Such incidents should be selected for investigation based on professional judgement. Judgements should be based on a comparison between the reported circumstances, plus evidence from any initial inquiries, and paragraph 4 of [HSE's published Incident Selection Criteria](#) (ie likelihood of a serious breach...including incidents considered liable to give rise to serious public concern with an initial EMM enforcement expectation of a notice or a prosecution). *Investigation decision normally by IMT, or Pipelines team (e.g. pipeline emergency shutdown valve). Teams or topics to consult inform or assist in decision judgements: FERA, OPRED EOC, Verification; plus others as appropriate to the nature of affected SECE.*
- 4.4.2 Note: A lost or unavailable SECE is reportable under Section C of [Implementing Regulation](#). A SECE is generally to be understood at “system level” (e.g. emergency-shutdown system, fire extinguishing system or fire prevention system) and not at component level (e.g. smoke and gas detectors). However, there are instances where the failure of a single component of the system significantly reduces the integrity of the SECE or even the entire installation. The [guidance](#) provides examples.
- 4.5 **Any Danger to the Integrity of an Offshore Installation including;**
- 4.5.1 A significant loss of structural integrity or;
- 4.5.2 A detected condition that reduces the designed structural integrity of the installation or;
- 4.5.3 A detected condition that reduces the stability, buoyancy or station keeping of an offshore installation or;
- 4.5.4 A loss of protection against the effects of fire or explosion (including active and passive fire protection, blast walls etc.).

to the extent that it required remedial action to prevent or limit a potential major accident as defined.

Investigation decision normally by IMT. Teams or topics to inform, consult, or assist in decision judgements: OPRED EOC, Structural Integrity & Verification, Naval Architecture & Marine Engineering, FERA.

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- 4.5.5 Circumstances representing danger to the integrity of an installation are defined in [RIDDOR Schedule 2](#) Part 6 paragraphs 78, 79, 81, 84 and 85 and in [DCR Regulation 9](#) with the further detail as described in Para 62 (a) to (h) of the [Guidance to the Regulations \(HSE Publication L85\)](#). The circumstances are:

RIDDOR Schedule 2 Part 6	DCR Regulation 9 Guidance L85 Para 62
<p>78. <i>Collapses</i> - Any unintentional collapse or partial collapse of any offshore installation or of any plant on an offshore installation which jeopardises the overall structural integrity of the installation.</p> <p>79. <i>Equipment</i> - The failure of equipment required to maintain a floating offshore installation on station which could cause a specified injury to, or the death of, any person.</p> <p>81. <i>Weather Damage</i> - Any damage to or on an offshore installation caused by adverse weather conditions and which could cause a specified injury to, or the death of, any person.</p> <p>84. <i>Subsidence or Collapse of Seabed</i> - Any subsidence or collapse of the seabed likely to affect the foundations or the overall structural integrity of an offshore installation.</p> <p>85. <i>Loss of Stability or Buoyancy</i> - Any incident which causes the loss of stability or buoyancy of a floating offshore installation.</p>	<p>(a) extreme (e.g. storm) loading which may have caused damage to load-bearing parts of the structure;</p> <p>(b) the occurrence of environmental conditions exceeding design or site-specific limits;</p> <p>(c) significant wave contact with any part of the installation not designed to withstand wave loads;</p> <p>(d) unexpected behaviour (e.g. excessive movement, deflection, settlement etc.);</p> <p>(e) excessive scour or settlement of foundations;</p> <p>(f) loss of buoyancy or unintended flooding of spaces expected to remain buoyant;</p> <p>(g) degradation of stability which may be indicated by excessive inclination, undue sensitivity to weight shifts, or excessive movement; and</p> <p>(h) a failure within the mooring system.</p>
<p>Note that Para 85 should be taken to include a loss, or temporary loss, of station keeping, stability or buoyancy of a floating offshore installation that jeopardises the integrity of the installation or adjacent installations; or endangers the health and safety or a person on an installation.</p>	<p>Note that DCR Regulation 9 is concerned only with situations which require immediate action to avert loss of integrity. This does include seabed "punch through" by a leg of a jack up installation.</p>

- 4.6 **Vessel Collisions, or Potential Collisions** - with an offshore installation which caused damage to the installation or vessel or where, had a collision occurred, would have had enough energy to cause sufficient damage to the installation or vessel to jeopardize its overall structural integrity, stability, buoyancy, station keeping or process integrity; irrespective if the vessel infringed an installation's 500m safety zone (see also sections 4.5 and 7.0). *Investigation decision normally by IMT. Teams or topics to inform, consult, or assist in decision judgements: OPRED EOC, Naval Architecture & Marine Engineering, Structural Integrity & Verification, EER.*
- 4.7 **Aircraft Collisions, or Potential Collisions** – The appropriate lead agency in the investigation of all aircraft accidents is the Department for Transport (DfT) Air Accident Investigation Branch (AAIB). It may also be appropriate for HSE to undertake a separate or parallel investigations into incidents involving a collision or potential collision with or near an offshore installation that causes or has significant potential to cause a major accident as defined (see section 3.0). The investigation should be limited to matters within HSE's area of responsibility, which includes: [PFEER](#) Regulations 6(1)(c), 7, 9, 12, 13, 17; [MAR](#) Regulations 12, 13, 14, 19; and [DCR Regulation 11](#). *Investigation decision normally by IMT. Teams or topics to inform, consult, or assist in decision judgements: OPRED EOC, Naval Architecture & Marine Engineering, Structural Integrity & Verification, EER.*
- 4.7.1 Notes: HSE should be prepared to cooperate with AAIB to support its investigations. CAA and HSE share regulatory responsibility for aspects of offshore safety. A [Memorandum of Understanding](#)

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covers these. HSE regulates the safety of activities on offshore installations. This includes duty holders' provision of suitable arrangements for delivering a safe operating environment for helicopters on or in the vicinity of installations. It also includes arrangements for dealing with related emergencies and rescue and recovery. CAA regulates the safety of Air Operator Certificated (AOC) helicopter operators that support offshore installations, including civil AOC helicopter search and rescue operators. CAA has responsibility to ensure that offshore helicopter operators are competent to meet the requirements for the safe transportation of passengers. This includes all regulatory aspects of areas concerning the airworthiness of aircraft and the safety of flight operations.

- 4.8 **An Unplanned Emergency Evacuation** - of part or all personnel on board an offshore installation in the interests of safety as a result of, or where there is a significant risk of, a major accident as defined. This includes a precautionary reduction in personnel on-board. *Investigation decision normally by IMT. Teams or topics to inform, consult, or assist in decision judgements: OPRED EOC, EER.*
- 4.8.1 Note: The European Offshore Authorities Group (EUOAG) [guidance on the implementing regulation](#) makes clear that full or partial evacuation may be a response in the event of major accident or as precautionary measure. This includes reporting medevacs associated with a major accident reported under another category. Any emergency and unplanned evacuation due to bad weather, total loss of power, or a condition where there is a significant risk of a major accident is reportable.
- Until such time as UK is able to draft post BREXIT guidance on the matter, pre-existing European Guidance will prevail.
- 4.9 **The Dropping of Any Object** – on to an offshore installation or an attendant vessel, or into the water adjacent to an installation, or vessel: (i) which could have caused a specified injury to, or the death of any person or, (ii) which caused, or had the potential to cause, a major accident as defined. *Investigation decision normally by IMT. Teams or topics to inform, consult, or assist in decision judgements: OPRED EOC, Mechanical, Diving, Pipelines and, as appropriate, Wells, Naval Architecture & Marine Engineering, Structural Integrity & Verification.*
- 4.9.1 Each of the criteria in the definition of a major accident must be considered in the context of the particular dropped object incident to determine the potential it held to cause a major accident, besides impacts on topsides process plant and equipment this includes considering subsurface structures (e.g. ballast tanks, pipelines etc.) and subsea operations (e.g. diving).
- 4.9.2 The [DROPS Forum consequence calculator](#) can be used to determine potential for causing a specified injury. Major and fatal indicated outcomes should be selected for investigation if there is a likelihood that a serious breach of law took place or the EMM initial enforcement expectation indicates an improvement or prohibition notice.
- 4.10 **The Collapse, Overturning or Failure of Any Load-bearing Part of Any Lifting Equipment**, other than an accessory for lifting – that caused, or had the potential to cause a major accident as defined. This includes the failure of lowering equipment, or the failure of any load-bearing part, whether it is used for lifting/lowering goods, materials or people. Failure in this context refers to components which suffer structural, mechanical, electrical, hydraulic or pneumatic breakdown and also covers situations where power and/or control systems fail to maintain the load as intended, irrespective of whether the equipment is in operation or not. It does not include the failure of lifting accessories such as chains and slings, but the failure of these items could result in a dropped object (see 4.9) or other incident. *Investigation decision normally by IMT. Teams or topics to inform, consult, or assist in decision judgements: OPRED EOC, Mechanical, Electrical & Control.*

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- 4.11 **Danger in Diving Operations** – which caused, or had the potential to cause a major accident or events as detailed by [RIDDOR Schedule 2 Part 1](#) Paragraphs 13 to 17. *Investigation decision normally by Diving team. Teams or topics to inform, consult, or assist in decision judgements: IMT, OPRED EOC, EER, Naval Architecture & Marine Engineering, Electrical & Control.*

RIDDOR Schedule 2 Part 1

13. *The failure, damaging or endangering of—*
- (a) *any life support equipment, including control panels, hoses and breathing apparatus; or*
 - (b) *the dive platform, or any failure of the dive platform to remain on station,*
- which causes a significant risk of personal injury to a diver.*
14. *The failure or endangering of any lifting equipment associated with a diving operation.*
15. *The trapping of a diver.*
16. *Any explosion in the vicinity of a diver.*
17. *Any uncontrolled ascent or any omitted decompression which causes a significant risk of personal injury to a diver.*

- 4.12 **Dangerous Occurrence at a Pipeline or Pipeline Works Offshore** – as detailed by [RIDDOR Schedule 2 Part 1](#) Paragraphs 21 & 22; which caused or had the potential to cause a major accident as defined or where there is any other regulatory concern about the severity of a pipeline safety or integrity incident, either because of its potential consequences or because human or technical failure may be a contributory factor. *Investigation decision normally by Pipelines team. Teams or topics to inform, consult, or assist in decision judgements: IMT, OPRED EOC, FERA, EER.*

RIDDOR Schedule 2 Part 1

21. *In relation to a pipeline or pipeline works—*
- (a) *any damage to, accidental or uncontrolled release from or inrush of anything into a pipeline;*
 - (b) *the failure of any pipeline isolation device, associated equipment or system; or*
 - (c) *the failure of equipment involved with pipeline works,*
- which could cause personal injury to any person, or which results in the pipeline being shut down for more than 24 hours.*
22. *The unintentional change in position of a pipeline, or in the subsoil or seabed in the vicinity, which requires immediate attention to safeguard the pipeline's integrity or safety.*

- 4.12.1 **Note:** Pipeline isolation devices (e.g. riser emergency shutdown valves etc.) provide protection from incident escalation and are often categorised as safety and environmentally critical elements. Routine testing can reveal indications of their failure to operate satisfactorily on demand. Failures detected during testing of pipeline isolation devices to meet performance standards for adequately and timeously blocking fluid flow should be assessed by the pipeline operator. If the failure had the potential to cause a dangerous occurrence and the operator took immediate remedial action to reduce risks to an acceptable level, the failure should be reported by the pipeline operator according to RIDDOR.
- 4.13 **Falls by Persons Into Water** – on, from or in connection with an offshore installation which caused, or had the potential to cause a major accident as defined. *Investigation decision normally by IMT. Teams or topics to inform, consult, or assist in decision judgements: OPRED EOC, EER.*

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- 4.14 **Occupational Health Issues** - which caused, or had the potential to cause a major accident as defined and including, but not restricted to: diseases, occupational diseases, exposures to noise, vibration, carcinogens, mutagens, biological agents and radiation; malfunction of breathing apparatus. *Investigation decision normally by Occupational Health team. Teams or topics to inform, consult, or assist in decision judgements: IMT, OPRED EOC.*

5.0 FATALITIES, INJURIES, DISEASES AND EVENTS NOT RELATED TO A MAJOR ACCIDENT

The circumstances leading to all notifications or reports of the following incidents should be selected for investigation where they meet [HSE's published Incident Selection Criteria](#).

- 5.1 Offshore incidents involving work related fatalities.
- 5.2 [Major injuries](#), or cases of [occupational disease](#) and [diseases reportable offshore](#);
- 5.3 Incidents which indicate a likelihood of a serious breach of health and safety law including incidents considered liable to give rise to serious public concern with an initial EMM enforcement expectation of a notice or a prosecution.

Investigation decision normally by IMT. Teams or topics to inform, consult, or assist in decision judgements: Occupational Health, OPRED EOC. plus others as appropriate to the nature of the circumstances.

6.0 FATALITY APPARENTLY DUE TO 'NATURAL CAUSES'

[Initial inquiries](#) should be undertaken to determine if an investigation should proceed into the circumstances of a death offshore that is notified or reported as not arising out of or in connection with a work activity. *Investigation decision normally by IMT. Teams or topics to inform, consult, or assist in decision judgements, Occupational Health, OPRED EOC. plus others as appropriate to the nature of the circumstances.*

- 6.1 A connection with work may exist if there is potential for a major accident as defined, for example if:
- 6.1.1 The recovery, rescue and emergency response to a 'natural causes' or other death was relevant to an environment or at a location where special rescue/ recovery arrangements were used or expected to be in place as a result of a risk assessment or control of work arrangements. Examples include a 'natural causes' or other death in locations such as a confined space, crane cab, mud pit, tank or vessel; work at height; work inside a leg or column; work at a higher or lower level or other remote location which requires special access and egress arrangements.
- 6.1.2 The application and suitability of any special health and fitness criteria, additional to normal offshore medical requirements, where a 'natural causes' death occurs in an environment that was, or should have been, provided as part of a risk assessment for individuals to enable them to work in a particular stressful environment or is needed for access and egress (e.g. leg entry);

7.0 SAFETY ZONE INFRINGEMENTS

[Initial inquiries](#) must be made into the circumstances leading to all notifications or reports of a potentially illegal entry into an offshore installation's 500m Safety Zone, irrespective of whether the infringement is considered a precursor to a major accident. Initial inquiries indicating a serious breach of law took place should be selected for investigation. For example, persistent or repeated infringements; or a single serious event. *Investigation decision normally by IMT. Teams or topics to inform, consult, or assist in decision judgements: OPRED EOC, Naval Architecture & Marine Engineering, Structural Integrity & Verification, EER, FERA.*

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- 7.1 Under [Section 23\(2\) of the Petroleum Act 1987](#), if a vessel enters or remains in a safety zone in contravention of the regulations, then its owner and its master are potentially guilty of an offence and liable on conviction to a fine and/or imprisonment.
- 7.2 Vessels, which for this purpose legally include hovercraft, submersible apparatus and installations in transit, are prohibited from entering or remaining in a safety zone except with the consent of HSE; or in accordance with regulations made under [Section 23\(1\) of the Petroleum Act 1987](#), currently regulation 21H of MAR as amended by paragraph 14 of [Schedule 13 to SCR2015](#). This includes consent given by the duty holder to a vessel to enter a safety zone.
- 7.3 The extent of any investigation should be tailored to gathering evidence to support an enforcement decision in accordance with HSE's [Enforcement Policy Statement](#), using the [Enforcement Management Model](#) to inform a regulatory response that is appropriate to the nature, extent and seriousness of the contravention, including consideration of any persistent or repeated contravention.

8.0 COMPLAINTS & CONCERNS

All concerns meeting the criteria of HSE's policy should be selected for investigation. Refer to [HSE's policy](#). *Investigation decision normally by IMT. Teams or topics to inform, consult, or assist in decision judgements OPRED EOC, others dependant on nature of the concern raised.*

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9.0 ANNEX 1 – FURTHER GUIDANCE ON DECISIONS FOR OCCURRENCES INVOLVING FIRE, EXPLOSION or UNINTENDED RELEASE OF OIL, GAS OR HAZARDOUS SUBSTANCES (IGNITED OR NOT)

- 9.1 This section supersedes the earlier [SPC/Tech/OSD/48](#) - Offshore hydrocarbon release investigation policy.
- 9.2 **Fires and Explosions** – all fires and explosions are major accident precursor events that should be selected for investigation unless:
- 9.2.1 The fire or explosion did not cause, or have significant potential (see section 3.4.1) to cause death or serious personal injury to persons on the installation or engaged in an activity on or in connection with it, or;
- 9.2.2 The fire or explosion was a minor ignition, see section 9.3.
- 9.2.3 There is no indicated likelihood that a serious breach of law took place (see section 5.3)
- 9.3 **Minor Ignitions** – Some minor ignitions will not meet the definition of a major accident because they do not have significant potential to cause death or serious personal injury to persons on the installation or engaged in an activity on or in connection with it. Minor ignitions can be associated with, for example, rubbish fires, miscellaneous hot work & fabrication, electrical gear, lube oil, utility systems etc. Careful judgement should be exercised to determine if there was significant potential from an ignition (see section 3.4). Judgements should consider the source of ignition, type of substance ignited, escalation potential; and scale of emergency response and history of similar ignitions on the installation and across the industry. In the absence of significant potential, and if a serious breach is also excluded (see section 5.3), minor ignitions are not major accident precursor events that require selection for investigation.
- 9.4 **Unintended Releases of Hazardous Substances** – that are not petroleum hydrocarbons must be considered for any significant potential (see section 3.4.1) to cause a major accident as defined. Where it is judged that they have such potential, the circumstances should be selected for investigation. Examples of releases of hazardous substances include unintended release of toxic or asphyxiating gasses and vapours like hydrogen sulphide, (H₂S), carbon dioxide (CO₂) or fire suppressant surfactants and harmful chemicals as solids, liquids, aerosols, vapours etc.
- 9.5 **Unintended Hydrocarbon Releases (HCRs)** – Unintended HCRs that cause, or have significant potential (see section 3.4.1) to cause death or serious personal injury to persons on the installation or engaged in an activity on or in connection with it are major accident precursor events that should be selected for investigation.
- 9.6 **Incident Selection Decision Making for HCRs** – Often, the decision to select HCR events for investigation (or not) is straightforward to make based on information notified by the duty holder. The nature of the incident, its potential, and duty holder's immediate action in response to it are likely to indicate if the circumstances are a major accident precursor. Where any doubt exists, decisions **do not** depend on, and **do not** need to wait for any an initial severity classification for an HCR (ie minor, significant, major – see section 9.10.2). If information is limited, a decision can be based on the fluid characteristics involved and the immediate environment where the release occurred, for example:
- 9.6.1 A release of a gas from the high-pressure side of a compressor is a major accident precursor because of the nature of the failure and the potential risks created. The release is likely to be categorised subsequently as significant or major, but this fact and the quantity accumulated is unlikely to be known when the investigation decision needs to be made.
- 9.6.2 Several gas detection 'heads' triggered in a large module indicates a release that is a major accident precursor because of the accumulation of gas and the risks involved. The release is likely to be categorised subsequently as significant or major, but this fact and the quantity accumulated is unlikely to be known when the investigation decision needs to be made.

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- 9.6.3 Hydrocarbon accumulations into confined or congested areas indicate an event that is a major accident precursor because, if ignited, the explosion over-pressures could be destructive and harmful. This is sufficient information in itself to select the incident for investigation. The release is likely to be categorised subsequently as significant even if a low rate of release is involved.
- 9.6.4 A release from a valve stem in a crude oil system is unlikely to be a major accident precursor. The potential for fire and explosion is relatively lower than for a hydrocarbon gas accumulation, and the rate of release from the valve stem is likely to be relatively low. The release is likely to be subsequently categorised as minor.
- 9.7 **Clarifying Information Notified or Reported to Aid Decision-making.** It is not practical to give examples for all possible events and their relative severity. In general, all releases that are likely to be categorised as major or significant will also be major hazard precursor events. There will occasionally be some exceptions, including minor releases having significant potential, and significant releases not having such potential. In the absence of sufficient information notified or reported by the duty holder on which to base an investigation decision, judgements can be further informed by one or more of the following actions:
- 9.7.1 Speaking (e.g. by phone) to the Offshore Installation Manager to get more information about the nature of the incident and duty holder's immediate action on-board in response to it.
- 9.7.2 Undertaking [initial inquiries](#) if required and in accordance with HSE's corporate investigation procedure.
- 9.7.3 Consulting with technical specialists regarding the potential the incident held to escalate; typically including Process Engineering, Fire and Explosion, Control & Instrumentation and Mechanical specialist disciplines as appropriate.
- 9.7.4 Using the HCR 'ready reckoner', see section 9.11
- 9.7.5 Evaluating the number and nature of impairments or failures of the barriers against the relevant major accident scenarios described by the installation safety case, see section 9.10.
- 9.8 **Relationship between HCR Incidents and Other Major Accident Precursor Events** – HCR incidents can also involve other major hazard precursor events, which independently indicate that an investigation is required. For example:
- 9.8.1 One or more major injuries, including fatal injuries. See section 5.0
- 9.8.2 A lost, unavailable or failed SECEs. See section 4.4
- 9.8.3 A precautionary reduction in personnel on-board. See section 4.8
- 9.8.4 A notification made under SCR2015 regulation 29. See section 4.1
- 9.8.5 A serious breach. See section 5.3
- 9.8.6 Public or workforce concern. See section 8.0.
- 9.9 **Relationship between HCR Release Rate and Release Quantity** – Significant potential for a major accident arising from an HCR is closely related to the release rate and accumulation. Accumulations may create potential major accidents especially if the release rate is rapid, for example if they fill a module quickly, or if they are slow but nonetheless create an accumulation in an enclosed or congested space. On the other hand, a relatively larger quantity may present a relatively lower hazard if the release rate occurred over an extended period and a dangerous accumulation was not possible. The table in section 9.12 summarises the severity categorisations and the relationship between release rate and quantity.

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- 9.10 **Barrier Strength Evaluation** - The measures to prevent offshore major accidents or mitigate their effects can be thought of as a series of barriers that lie between a potential incident and harm to people or the environment should the risk occur. Identifying potentially failed or degraded barriers can assist to decide whether an incident meets the definition of a major accident and should be selected for investigation. A systematic approach can be taken by using the table in section 9.13, to make a judgement about and identify the likely strength of a typical list barriers and subsequently using the matrix in section 9.14 to categorise the overall severity of likely barrier failures.
- 9.10.1 A failed barrier may signify a lost or unavailable SECE, which could characterise a major accident precursor event requiring investigation in its own right. See section 4.4.
- 9.10.2 Significant barrier failures indicates a that significant potential and/or a serious legal breach are considerations. See sections 3.4.1 and 5.3. Serious legal breaches and major accidents can sometimes result from apparently negligible potential barrier failure. For example, in a hydrocarbon release, whilst the failure of a mitigation barrier may not have contributed to the release, it may be an important factor in determining the potential in an incident for escalation.
- 9.11 **Hydrocarbon Release Categorisation** - HCRs are eventually categorised according to three severity classifications: Major, Significant and Minor see 9.12 Table 1. The calculation of actual HCR release quantity and rate is frequently complex. All the required information is seldom to be available initially, when the investigation decision must be made, so an 'order of magnitude' approach is acceptable. The [Offshore Hydrocarbon Releases - ready reckoner](#) is a basic tool to assess the magnitude of an offshore release. The 'order of magnitude' determination will not necessarily reflect the final categorisation, which is informed by more facts than will be available at the time of the investigation decision.

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9.12 Table 1: HCR Release Severity Classification Criteria

Severity Classification	Release type	Criteria	
		Quantity (kg)	Rate (kg/second)
Major Releases	Gas Releases	Greater than 300	Greater than 1
	Two Phase	Greater than 300	Greater than 1
	Liquid	Greater than 9000	Greater than 10
Significant Releases	Gas Releases	Between 1 and 300	Between 0.1 and 1
	Two Phase	Between 1 and 300	Between 0.1 and 1
	Liquid	Between 60 and 9000	Between 0.2 and 10
Minor Releases	Gas Releases	Less than 1	Less than 0.1
	Two Phase	Less than 1	Less than 0.1
	Liquid	Less than 60	Less than 0.2

9.13 Table 2 – Barrier Strength Checklist

		Indicative Barrier Strength (✓ as applicable)			
		Present	Partially Failed	Failed or Absent	Not Known
Preventative Measure	Process Design				
	Competence				
	Maintenance of SECEs				
	Risk Assessments				
	Management of Change				
	Emergency Shutdown				
	Control of Work (inc. Isolations)				
	Supervision (inc. Contractors)				
	Safe Working Procedures				
	Safe Operation of plant (to design intent)				
Mitigation Measure	Emergency Command and Control				
	Fire and Blast Protection				
	Effective relief and blowdown				
	Emergency Response				
	Ignition Control				
	Detection				

9.14

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9.15 Table 3 – Barrier Strength Matrix

Prevention Measures	> 1 Failure	Ma	Ma	Ma	Ma	Ma	Ma	Ma	Barrier Strength Summary (✓ as applicable) Potential for major accident based on quantity accumulated and/or release rate (Table 1): <input type="checkbox"/> Major <input type="checkbox"/> Significant <input type="checkbox"/> Minor Extent of likely barrier failures from strength checklist and matrix (Tables 2 & 3): <input type="checkbox"/> Major <input type="checkbox"/> Significant <input type="checkbox"/> Minor <input type="checkbox"/> Negligible
	1 Failure	Ma	Ma	Ma	Ma	Ma	Ma	Ma	
	6 Partial	S	S	S	S	Ma	Ma	Ma	
	5 Partial	S	S	S	S	S	Ma	Ma	
	4 Partial	S	S	S	S	S	Ma	Ma	
	3 Partial	Mi	Mi	S	S	S	Ma	Ma	
	2 Partial	N	Mi	Mi	S	S	Ma	Ma	
	1 Partial	N	N	Mi	S	S	Ma	Ma	
	None Identified	N	N	Mi	S	S	Ma	Ma	
[Ma] Major Failure [S] Significant Failure [Mi] Minor Failure [N] Negligible Failure	None	1 Partial	2 Partial	3 Partial	4 Partial	1 Failure	> 1 Failure	Mitigation Measures	

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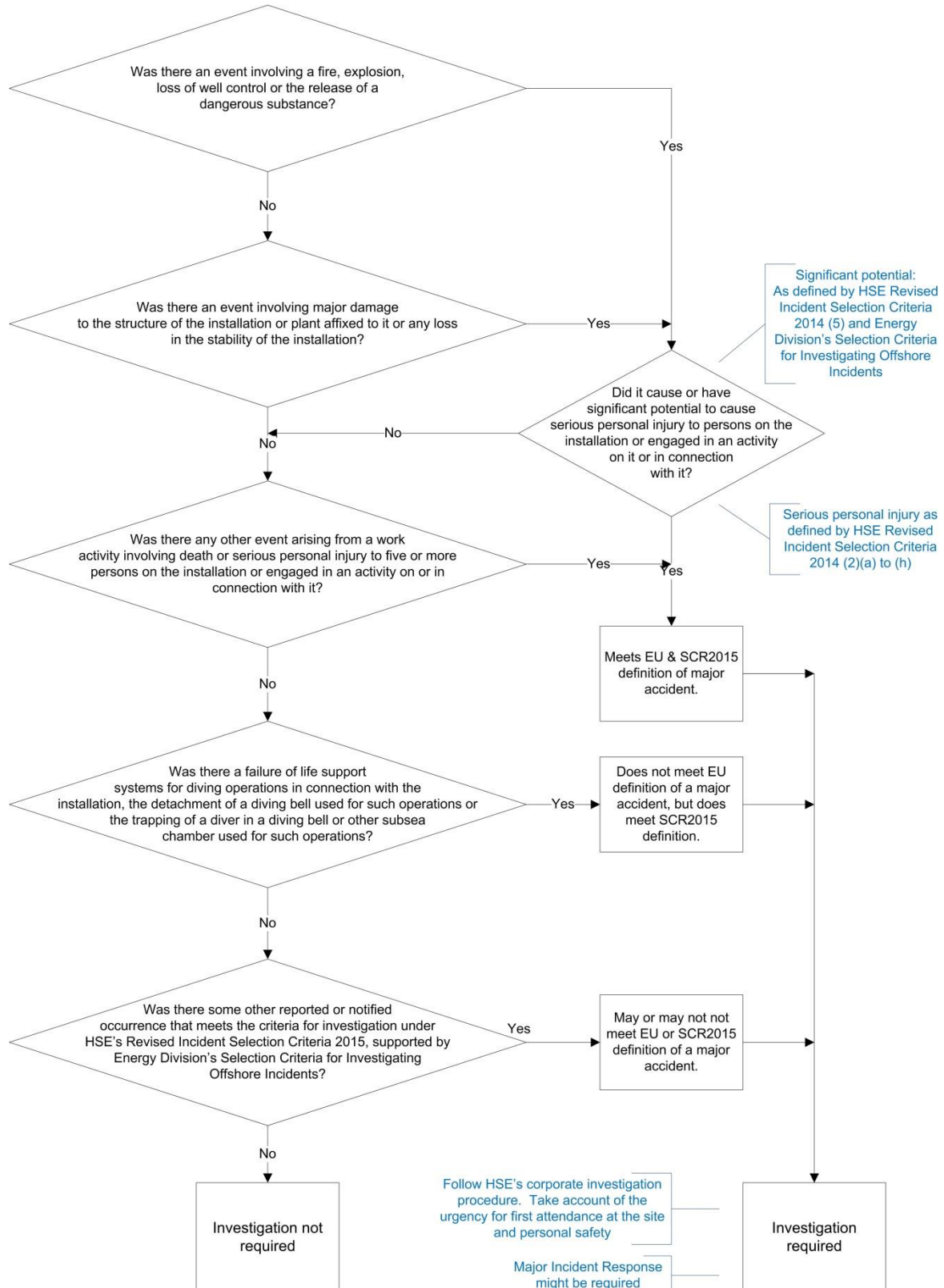


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10.0 ANNEX 2 – INVESTIGATION DECISION MAKING FLOWCHART

10.1 This flowchart is provided to support incident selection decision taking and to assist whether an incident meets the definition of a major accident as defined by SCR2015 and the EU Directive.



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11.0 ANNEX 3 – RECORDING INVESTIGATION DECISIONS AND OUTCOMES

11.1 The findings of investigations into major accidents should be recorded in writing as an 'Investigation Decision Note' on the COIN Case by a Band 2 HSE Inspector or above, or by a Band 3 inspector deputising for a Band 2. The following examples provide a framework to follow for such notes.

11.2 Investigation Decision Note Example 1

NO INVESTIGATION DECISION YET POSSIBLE, INITIAL INQUIRIES REQUIRED

The information reported by the duty holder shows that the dropped object had theoretical potential to cause a serious personal injury, but that it occurred in an area where nobody was actually or likely to present. The object was a support guide for a gas-lift line. It is therefore possible the incident also held potential for damage to hydrocarbon processing equipment and a possible major hazard precursor event (e.g. hydrocarbon release). The actual risk of serious personal injury or credibility for a major hazard precursor event is difficult to determine from the reported information. Initial inquiries are necessary to properly inform the investigation decision. Considering the nature of the incident, those initial inquiries should include a visit to site offshore. A full investigation should follow if [HSE's published Incident Selection Criteria](#) are satisfied, in particular criterion 4 (serious breach) in which there could be an expectation of formal enforcement or criterion 5 (major hazard precursor event). The initial inquiries should be directed to indicate in these areas and inform the investigation decision.

11.3 Investigation Decision Note Example 2

INJURY (NOT FOR INVESTIGATION)

The incident does not satisfy the definition of a major accident (SCR2015). The injury does not meet the definition of a major injury as defined by RIDDOR Reg 2(1) & Schedule 1(1). The incident is not selected for mandatory investigation because: a) The injury does not meet the level of severity requiring a mandatory investigation under criterion 2(3) of [HSE's published Incident Selection Criteria](#). [serious multiple fractures (more than one bone, not including wrist or ankle)] and; b) Based on the available information, the circumstances of the incident in combination with the duty holder and strategic factors make an enforcement expectation of a notice or prosecution unlikely. Therefore the incident does not meet criterion 4 (serious breach) of [HSE's published Incident Selection Criteria](#) and a mandatory investigation is not required.

11.4 Investigation Decision Note Example 3

HYDROCARBON RELEASE (NOT FOR INVESTIGATION)

An investigation is not required. The incident does not satisfy the definition of a major accident (SCR2015). The reported information indicates a hydrocarbon release of crude oil via a crack in a small bore drain line connection. Confirmation of the quantity released is to follow. Some crude oil reached the sea via open gratings and has been reported to OPRED. What remained on solid plate was contained and removed. The incident involved no emergency or precautionary full or partial evacuation. There was no fire, explosion or ignition. There were no injuries. It appears gas detection systems were not impaired and were in operation. Risks to people on the installation arising from the incident do not appear serious based on the nature of the release, limited potential for escalation and response by the duty holder to the event. No public concern has arisen in connection with the incident. The indications are that failures of the preventive barriers against the risk were present but there was low potential for significant barrier failure. The incident is not likely to meet the definition of a major accident on grounds of potential, ie an event involving a fire, explosion, loss of well control or the release of a dangerous substance causing, or with a significant potential to cause, death or serious personal injury to persons on the installation or engaged in an activity on or in connection with it. It is not therefore considered to meet criterion 5 of [HSE's published Incident Selection Criteria](#). Consideration of the risk-gap (multiple casualties), duty holder and strategic factors imply that no

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serious breach of health and safety law took place. On this basis the incident also fails to meet criterion 4 of the Incident Selection Criteria.

11.5 Investigation Decision Note Example 4

FIRE (FOR INVESTIGATION)

An investigation is required. The incident satisfies the definition of a major accident (SCR2015). The duty holder reported information and HSE's initial inquires indicates this incident featured a small and localised flame associated with an overheated bearing on a condensate pump. Detection systems were triggered but no uncontained fire occurred. There was no emergency evacuation, no casualties and no precautionary evacuation of the installation. The response by the duty holder to the emergency appears to have been appropriate and no public concern has arisen in connection with the incident. The indications are that failures of the preventive barriers against the risk were present and there was potential for significant barrier failure. The risks to people on the installation arising from the incident were serious based on the nature of the fire, and the credible potential for escalation into an uncontained condensate fire. The incident is likely to meet the definition of a major accident on grounds of potential, ie an event involving a fire, explosion, loss of well control or the release of a dangerous substance causing, or with a significant potential to cause, death or serious personal injury to persons on the installation or engaged in an activity on or in connection with it. It is therefore considered to meet criterion 5 of [HSE's published Incident Selection Criteria](#). Consideration of the risk-gap (multiple casualties), duty holder and strategic factors imply that a serious breach of health and safety law may have taken place. On this basis the incident also fails to meet criterion 4 of the Incident Selection Criteria.

11.6 Investigation Decision Note Example 5

MOORING FAILURE (FOR INVESTIGATION)

An investigation is required. The incident satisfies the definition of a major accident (SCR2015). The incident is considered to meet the requirements for a mandatory investigation under criterion 6 (major hazard precursor event) of [HSE's published Incident Selection Criteria](#) as two mooring lines failed during the incident. This represents the failure of a SECE. The loss of station-keeping did not compromise the installation to an extent whereby persons on-board were put at significant risk, but this potential existed. Furthermore, the oil cargo inventory was sufficient to create potential for a potential major environmental incident resulting from a safety issue. The indications are that failures of the preventive barriers against the risk were present and there was potential for significant barrier failure. The risks to people on the installation arising from the incident were serious based on the nature of the event, and the credible potential for escalation. The action taken by the duty holder to respond appears diligent but should be investigated as the measures taken did not prevent the incident occurring. The incident may also meet criterion 4 (serious breach) [HSE's published Incident Selection Criteria](#) because the circumstances suggest the possibility of a serious breach of health and safety law.

11.7 Investigation Decision Note Example 6

WELLS INCIDENT (NOT FOR INVESTIGATION)

An investigation is not required. The incident does not satisfy the definition of a major accident (SCR 2015), in that the loss of well control did not have a significant potential to cause, death or serious personal injury to persons on the installation or engaged in an activity on or in connection with it, with limited potential for escalation and response by the duty holder to the event. No public concern has arisen in connection with the incident. The reported information indicates that the well flowed due to the plug valve being inadvertently opened while attempting to confirm the tag of the plug. The reservoir pressure was greater than anticipated and as such the well was underbalanced resulting in a gain at surface. The gain was detected and the well shut-in in line with the dutyholder's procedures. It therefore does not meet criterion 5 of [HSE's published Incident Selection Criteria](#). Consideration of the risk-gap (multiple casualties), duty holder and strategic factors imply that no serious breach of

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health and safety law took place. On this basis the incident also fails to meet criterion 4 of the Incident Selection Criteria.

11.8 Investigation Decision Note Example 7

PIPELINES INCIDENT (FOR INVESTIGATION)

An investigation is required. The notified failure of the gas export riser ESDV to close on demand (failure of a SECE) satisfies the definition of a major accident (SCR 2015), in that the loss of performance held significant potential to cause death or serious injury to persons on the installation. There was an increased probability that a hydrocarbon pool fire rupturing the pipeline could cause uncontrolled discharge of the pipeline inventory (HP gas at 140 bar) through the passing valve on to the installation, escalating the fire and exposing persons to danger of harm. No actual hard or public concern has arisen in connection with the incident but nonetheless the circumstances are considered to meet criterion 5 of [HSE's published Incident Selection Criteria](#) (major hazard precursor event). Consideration of the risk-gap (multiple casualties), duty holder and strategic factors imply that a serious breach of health and safety law may have taken place. On this basis the incident also meets criterion 4 of the Incident Selection Criteria.

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EXAMPLE ONLY				
Installation Duty Holder and Address	Oil Operator UK Ltd 21 Oil and Gas Way Aberdeen, UK	Installation Name	Haggis Alpha	
Installation Type	<input checked="" type="checkbox"/> Production Installation <input type="checkbox"/> Non-production Installation	Installation Location	<input type="checkbox"/> Northern North Sea <input checked="" type="checkbox"/> Central North Sea <input type="checkbox"/> Southern North Sea	<input type="checkbox"/> West of Shetland <input type="checkbox"/> East Irish Sea <input type="checkbox"/> In transit or other
Incident Date	01/07/2021	Incident Time	13:42	
Factual Summary of the Incident Circumstances				
<p>A gas leak occurred during a routine pigging operation while the re-pressurisation phase of operation was happening and prior to pig launch. A single high level gas detector activated. An automatic process shutdown, depressurisation and deluge release occurred. Persons on-board mustered (all personnel accounted for). After the process depressurisation was complete and fire and gas detection systems verified clear, technicians were deployed to the area and confirmed that a needle valve on the nitrogen purge point was partially open. The valve was then closed; the area checked and confirmed all clear. The platform returned to normal status.</p>				
Statement of the Competent Authority's Decision on Why the Incident Meets the Definition of a Major Accident.				
<p>The incident satisfied the definition of a major accident (SCR2015) and a regulatory investigation was undertaken. The reported information indicated a release of flammable hydrocarbon gas. The incident involved no emergency or precautionary full or partial evacuation. There was no fire, explosion or ignition. There were no injuries. It appears gas detection systems were not impaired and were in operation. Risks to people on the installation arising from the incident did not appear serious based on the nature of the release, limited potential for escalation and response by the duty holder to the event. No public concern arose in connection with the incident. The indications were that failures of the preventive barriers against the risk were present and there was significant potential of a major accident arising from a rapid accumulation of hydrocarbon gas and potential ignition. The incident therefore met the definition of a major accident on grounds of potential, ie an event involving a fire, explosion, loss of well control or the release of a dangerous substance causing, or with a significant potential to cause, death or serious personal injury to persons on the installation or engaged in an activity on or in connection with it. It was therefore considered to meet criterion 6 of HSE's published Incident Selection Criteria. Consideration of the risk-gap (multiple casualties), duty holder and strategic factors implied that a serious breach of health and safety law may have taken place. On this basis the incident was also considered to meet criterion 5 of the Incident Selection Criteria.</p>				
Factual Summary of the Findings of the Investigation				
<p>The investigation revealed that:</p> <ol style="list-style-type: none"> 1. On 1 July 2013 at 13:42 BST, there was an uncontrolled hydrocarbon gas release from a burst flexible hose used for nitrogen purging during pig launching operations on the condensate pig launcher. An estimated 82kg of gas was released. This falls within the category of a significant release (Between 1 and 300 kg released at a rate of between 0.1 and 1 kg per second). The release exposed people to potential danger and the possibility of harm. 2. The work control certificate (permit to work) mentioned the use of nitrogen for purging and referenced the use of temporary hoses and couplings within the activity. A flexible hose was connected between the platform central purge inert gas supply and the pig launcher for this purpose but the duty holder did not ensure the hose was selected, installed or connected in accordance with the work control certificate and instructions. The hose subsequently failed resulting in the significant, unplanned and uncontrolled release of flammable hydrocarbon gas. The permit to work arrangements did not prevent the release. 				

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3. The duty holder's management of change procedure failed to manage changes made to the condensate pig launcher in that the launcher, pipework, fittings and interlock system were configured in a way that prevented the duty holder from being able to operate it in accordance with its own operational procedure, and this created risks to health and safety.
4. The installation safety case made several references for audit of the business controlling documents and for regular review of process operating procedures and manuals but the condensate pig launching operations amendment was not accurate in that it did not, and could not, match the actual procedure carried out. The operation in practice required procedural steps as written to be adapted, or missed, to suit the equipment as configured. The duty holder's regular review process failed to detect and address the fact it was not possible to comply with the procedure.
5. The duty holder identified and completed improvement actions on the condensate pig launcher equipment, pipework, fittings and interlock system and operating procedure in order to prevent recurrence. The duty holder shared the knowledge and lessons learnt from the incident across its organisation and with industry stakeholders.

Direct and Underlying Causes (as specified within the Implementing Regulation (EU) No 1112/2014)	a) Equipment –related causes	c) Procedural/organisational error
	<input type="checkbox"/> Design Failure	<input type="checkbox"/> Inadequate risk assessment/perception
	<input type="checkbox"/> Internal corrosion	<input checked="" type="checkbox"/> Inadequate instruction/procedure
	<input type="checkbox"/> External corrosion	<input checked="" type="checkbox"/> Non-compliance with procedure
	<input type="checkbox"/> Mechanical failure due to fatigue	<input type="checkbox"/> Non-compliance with permit-to-work
	<input type="checkbox"/> Mechanical failure due to wear-out	<input type="checkbox"/> Inadequate communication
	<input type="checkbox"/> Mechanical failure due to defected material	<input type="checkbox"/> Inadequate personnel competence
	<input type="checkbox"/> Mechanical failure (vessel/helicopter)	<input type="checkbox"/> Inadequate supervision
	<input type="checkbox"/> Instrument failure	<input type="checkbox"/> Inadequate safety leadership
	<input type="checkbox"/> Control system failure	<input checked="" type="checkbox"/> Other – inadequate control and organisation of work and unsuitable procedure. Failure of audit and review process to detect documented procedure incapable of being followed.
	<input checked="" type="checkbox"/> Other - Equipment configuration prevented operation in accordance with procedure. Unsuitable equipment used. Led to burst hose.	
	b) Human error-operational failure	d) Weather-related causes
	<input type="checkbox"/> Operation error	<input type="checkbox"/> Wind in excess of limits of design
	<input type="checkbox"/> Maintenance error	<input type="checkbox"/> Wave in excess of limits of design
	<input type="checkbox"/> Testing error	<input type="checkbox"/> Extremely low visibility in excess of system design
<input type="checkbox"/> Inspection error	<input type="checkbox"/> Presence of ice/icebergs	
<input type="checkbox"/> Design error	<input type="checkbox"/> Other	
<input type="checkbox"/> Other		

Factual Summary of any Regulatory Enforcement Action Taken and/or Legal Proceedings Recommended or Concluded

1. On 04/07/2021 the investigating inspector issued a formal direction to the duty holder to leave equipment undisturbed for the purpose of subsequent examination or investigation and to be retained in a secure place.
2. On 12 July 2021 A Prohibition Notice (No. P12349876) was served on the duty holder directing that the certain specified activities must not be carried on unless legal contraventions were remedied. The prohibition notice specified that pig launching operations on the condensate pig launcher likely to be carried on under the duty holder's control at the installation involved a risk of serious personal

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injury, and the matters which gave rise to the said risks were the uncontrolled release of hydrocarbons and involved a contravention of The Offshore Installations (Prevention of Fire and Explosion, and Emergency Response) Regulations 1995, Regulation 9(1)(b) because of a failure to have adequate arrangements in place including safety devices and procedures for the correct positioning and sequencing of the necessary valves and connections to a nitrogen source to ensure safe purging and pressurisation of the condensate pig launcher, so as to prevent an unplanned hydrocarbon release.

3. On 25/09/2021 the investigating inspector wrote formally to the duty holder requiring a number of other actions to be taken in response to material breaches of relevant statutory health and safety provisions including: The Offshore Installations (Safety Case) Regulations 2005, Regulation 16(1) – Duty to conform with a safety case and; the Offshore Installations (Prevention of Fire and Explosion, and Emergency Response) Regulations 1995, Regulation 9(1) – Prevention of fire and explosion. A copy of the letter was provided to the Installation Safety Representatives.
4. On 16/11/2021 the investigation was closed with no further action required, after satisfactory action and responses by the duty holder to the regulatory matters raised.