

Damage, loss or removal of a technical or other control measure

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1. Purpose

This Guidance Note explains when an operator must notify NOPSEMA of a dangerous occurrence arising from the **damage, loss or removal of a technical or other control measure** (TOCM). It establishes a clear, uniform reporting threshold to ensure that notifications are consistent with clause 82(1) of Schedule 3 to the *Offshore Petroleum and Greenhouse Gas Storage Act 2006* (OPGGSA).

2. Scope

The note applies to all facilities subject to the OPGGSA. It addresses only dangerous occurrences falling within Item 8 of Regulation 2.41 (damage, loss or removal of a TOCM) of the Offshore Petroleum and Greenhouse Gas Storage (Safety) Regulations 2024. It does not cover other dangerous-occurrence items or incidents that must be reported under separate requirements (e.g. serious personal injury or an uncontrolled release of hydrocarbon vapour).

3. Legislative Framework

The associated legislative references and definitions are listed in Appendix A.

4. Reporting Threshold

An operator must notify NOPSEMA when **all three** of the following apply:

1. A TOCM is damaged, lost or removed or is otherwise impaired.
2. As a result, the TOCM is unable to meet its performance standard as documented in the facility's Safety Case, accepted by NOPSEMA.
3. The performance standard does not explicitly allow the impairment (e.g. through redundancy, planned maintenance windows or other tolerances — examples of which are provided in Appendix B).

If the TOCM continues to meet its performance standard — or if the performance standard explicitly permits the impairment and all associated conditions are satisfied — notification is **not** required.

Appendix A – Associated legislative references

OPGGSA – Notifying and Reporting Accidents and Dangerous Occurrences

- Cl. 82(1) If, at or near a facility, there is:
- c) a dangerous occurrence;
- the operator must, in accordance with the regulations, give NOPSEMA notice of the accident or **dangerous occurrence**.

OPGG(S) – Regulations – Definition of Performance Standards

- Reg 1.5 **performance standard** means a standard, established by the operator, of the performance required of a system, item of equipment, person or procedure which is used as a basis for managing the risk of a major accident event connected with the facility.

OPGG(S) – Regulations – Control Measures

- Reg 2.5(3) The safety case for the facility must also contain a detailed description of the formal safety assessment for the facility, being an assessment, or series of assessments, conducted by the operator that:
- c) identifies the technical and other control measures that are necessary to reduce that risk to a level that is as low as reasonably practicable.

OPGG(S) – Regulations – Performance Standards

- Reg 2.5(4) The safety case for the facility must also contain a detailed description of the safety management system that:
- i) specifies the performance standards that apply.

OPGG(S) Regulations – Dangerous Occurrences

- Reg 2.41 For the purposes of the definition of **dangerous occurrence** in clause 3 of Schedule 3 to the Act, an occurrence, at a facility, that is specified in column 1 of an item of the following table is declared to be a dangerous occurrence.
- Item 8. **Damage, loss or removal or a technical or other control measure at the facility that is identified under subsection 2.5(2) as being critical to safety.**

Appendix B – Examples of damage, loss or removal of technical or other control measures

The examples listed in Table 1 are for illustrative purposes only. Actual designs, conditions and performance standards may vary from those described below.

Table 1 – Examples of damage, loss or removal of technical or other control measures.

Technical or other control measure	Impairment	Performance standard	Impairment notifiable (OPGGSA Cl. 82.1)	Clarifications and exceptions (Defined in performance standard)
Fire water pumps	One (1) of two (2) x 100% Firewater pumps fails to start during a weekly test.	2 x 100% pumps must be available at all times to ensure the reliability of the fire water system. <i>Comment: The impairment means the performance standard cannot be met. The impairment should be reported to NOPSEMA.</i>	Yes	The unavailability of one (1) of two (2) x 100% pumps during planned maintenance (provided the maintenance is completed in reasonable time and in accordance with a recognised standard e.g. NFPA 25) is not a breach of the performance standard, provided this clarification is described and justified in the performance standard. The performance standard must also describe the conditions of the exception, such as maximum allowable time to maintain.

Technical or other control measure	Impairment	Performance standard	Impairment notifiable (OPGGSA Cl. 82.1)	Clarifications and exceptions (Defined in performance standard)
Fire water system	During testing, fire water coverage in the processing area was reduced due to blocked deluge heads.	The performance standard requires fire water coverage over the processing. <i>Comment: The impairment means the performance standard cannot be met. The impairment should be reported to NOPSEMA.</i>	Yes	
Process shutdown valve (SDV)	An SDV fails to close during a demand on the associated safety instrumented function (SIF) or during a proof test.	SDV is required to close on demand and within the process safety time, to ensure the process is maintained in a safe condition. The performance requirement for the SIF and SDV is specified in the Safety Requirement Specification – IEC 61511-1 <i>Comment: The impairment means the performance standard cannot be met. The impairment should be reported to NOPSEMA.</i>	Yes	This may not be a breach of the performance standard if the operator is able to demonstrate full compliance with IEC 61511, including the collection and analysis of reliability data, and demands on the system. The operator has proof tested the device at a frequency specified in the SRS and periodically reviewed the test frequency.

Technical or other control measure	Impairment	Performance standard	Impairment notifiable (OPGGSA Cl. 82.1)	Clarifications and exceptions (Defined in performance standard)
Blowdown valve (BDV)	The blowdown valve failed to open on demand, or opened too slowly during an ESD event, such that the performance standard blowdown time could not be met (e.g. 690 kPag in 15 minutes).	The blowdown systems must be able to de-pressure vessels containing pressurised hydrocarbon to less than 690 kPag within a time specified in the performance standard. <i>Comment: The impairment means the performance standard cannot be met. The impairment should be reported to NOPSEMA.</i>	Yes	
Blowdown system	Blowdown system hardware and logic does not function to ensure safe blowdown.	The performance standard requires the blowdown to de-pressure hydrocarbon containing systems. <i>Comment: This impairment means the performance standard is not met and should be reported to NOPSEMA.</i>	Yes	

Technical or other control measure	Impairment	Performance standard	Impairment notifiable (OPGGSA Cl. 82.1)	Clarifications and exceptions (Defined in performance standard)
Shutdown valve	The low-level shutdown valve on a rundown line of a separator is passing more than the maximum allowable leak rate.	The performance standard allows an acceptable, safe, maximum allowable pass rate that has been calculated to ensure levels in the separator remain at safe operating level. <i>Comment: The condition of the shutdown valve does not allow the performance standard to be met and presents risk to the integrity of the overall shutdown system. This impairment should be reported to NOPSEMA.</i>	Yes	

Technical or other control measure	Impairment	Performance standard	Impairment notifiable (OPGGSA Cl. 82.1)	Clarifications and exceptions (Defined in performance standard)
Gas detectors	One (1) gas detector is discovered to have failed dangerously (Note 1) during periodic testing.	The performance standard allows for up to one 'dangerous failure' (Note 1) per fire zone because the system has been designed with redundancy, such that one failure does not reduce the reliability below design requirements. <i>Comment: The failure of one gas detector is allowed for by the performance standard. This does not need to be reported to NOPSEMA.</i>	No	The performance standard must clearly describe the redundancy that is designed into the system, such that a single failure does not reduce system reliability below acceptable levels. If there is no redundancy described, a single dangerous failure detected during testing is a breach of the performance standard and should be notified to NOPSEMA as a dangerous occurrence.

Technical or other control measure	Impairment	Performance standard	Impairment notifiable (OPGGSA Cl. 82.1)	Clarifications and exceptions (Defined in performance standard)
Flowlines	Substantial corrosion of a flowline has been identified, but with minimum allowable wall thickness in place.	The performance standard states a minimum wall thickness to ensure the process fluids are contained within the flowline. <i>Comment: The operator has put in place mitigation measures of additional regular wall thickness monitoring until a repair/replacement is completed. The performance standard is still met and does not need to be reported to NOPSEMA.</i>	No	
Flowlines	Substantial corrosion of a gas flowline detected: wall thickness below minimum requirement.	The performance standard states a minimum wall thickness to ensure the process fluids are contained within the flowline. <i>Comment: The flowline does not meet the performance standard. This impairment should be reported to NOPSEMA.</i>	Yes	

Technical or other control measure	Impairment	Performance standard	Impairment notifiable (OPGGSA Cl. 82.1)	Clarifications and exceptions (Defined in performance standard)
Flowlines	A flowline is equipped with a high integrity pressure protection system (HIPPS) to protect the downstream equipment against overpressure. The HIPPS valve is stuck in the open position due to scaling or sand deposits.	The performance standard requires the HIPPS valve to close on demand and fails safe closed. <i>Comment: The HIPPS valve does not meet the performance standard. This impairment should be reported to NOPSEMA</i>	Yes	
Flowlines	A flowline is equipped with a HIPPS to protect the flowline and downstream equipment against overpressure. On one of the two sensing units, one of the pressure sensors is defective.	The performance standard allows for one out of three sensors to be faulty with an increased monitoring program until repaired. <i>Comment: Each of the two remaining sensors will cause the HIPPS valve to close when the trip setting is exceeded. The operator has put mitigation measures in place to check the remaining sensors more frequently until replacement is installed. The performance standard is still met. This impairment does not need to be reported to NOPSEMA.</i>	No	

Technical or other control measure	Impairment	Performance standard	Impairment notifiable (OPGGSA Cl. 82.1)	Clarifications and exceptions (Defined in performance standard)
Fire damper	During a planned shutdown, the temporary refuge fire damper was tested and failed to close.	The performance standard requires fire dampers to close on confirmed smoke and gas detection to prevent smoke ingress and maintain the integrity of the temporary refuge during an emergency. <i>Comment: The performance standard is not met, and this impairment should be reported to NOPSEMA.</i>	Yes	
Lifeboats	During testing, the engine of a lifeboat started-up but the propeller failed to turn. The remaining lifeboat capacity is not sufficient for the personnel on board the installation.	The performance standard requires the lifeboat capacity for 100% persons on board. <i>Comment: This impairment means the performance standard is not met and should be reported to NOPSEMA</i>	Yes	