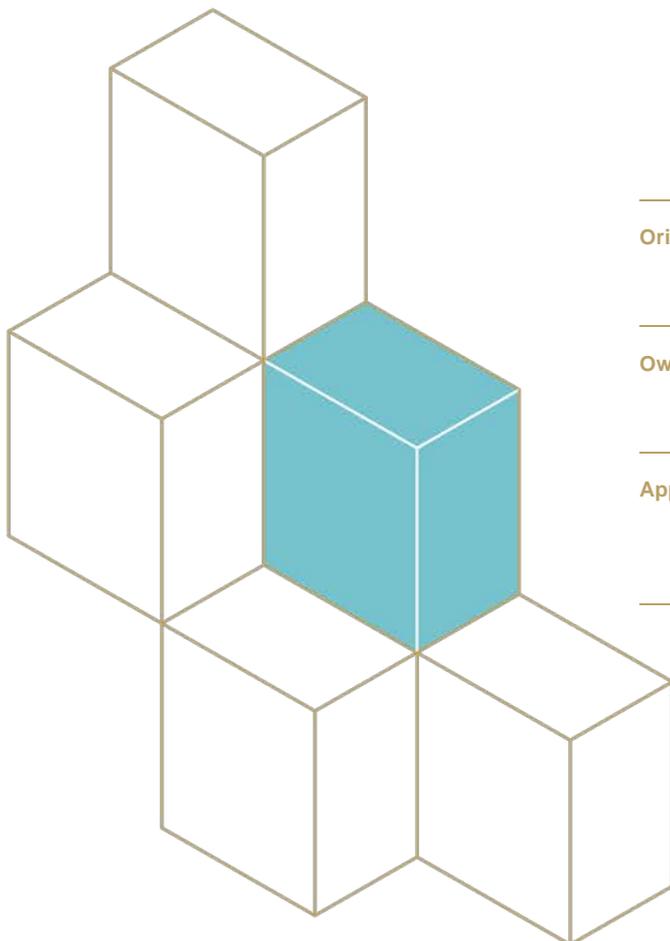


Control of Temporary Equipment Procedure

CHRY-UKO-HSEQ-PROC-1303



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1.0 PURPOSE

This Procedure defines the controls necessary to ensure effective management of the risks associated with the use of Temporary Equipment (TE) on Chrysaor-operated assets and contracted non-production installations (such as drilling rigs and light well intervention vessels).

It ensures that:

- All TE is correctly specified for use offshore
- All TE is established and verified
- Hazards associated with its use offshore are identified and assessed
- TE is supplied fit for purpose, in good condition and certified for (at least) the period of intended use
- All TE is inspected and released before shipment
- TE is installed, effectively managed, maintained and removed safely

Note: *When TE is supplied as part of a broader scope of work, such as a well intervention campaign or nitrogen package, detailed instructions on the installation and use of the equipment is provided in the work pack/procedure. In such examples, this Procedure is still followed to ensure the interfaces with the asset are safely managed.*

There are occasions when the planned use of TE also requires the implementation of the Management of Change (MOC) Procedure, CHRY-UKO-TAI-PROC-0236 [Ref 1] to assess potential implications. These are described in Section 7.0.

2.0 SCOPE

This Procedure applies to TE used on all Chrysaor United Kingdom Continental Shelf (UKCS) offshore assets in normal operations.

This Procedure does not apply to Chrysaor or personal toolboxes (and the tools and equipment contained therein) to be shipped either in isolation or as part of a shipment of equipment. However, contained equipment should be certified and all calibration certificates should be available if requested.

Additionally, this Procedure does not cover the following:

- Radioactive sources and their associated equipment
- Hazardous materials and chemicals

- Combined operations, where equipment from a drilling rig/accommodation barge is located alongside or on an asset; deviations from this Procedure are detailed in the appropriate Combined Operations Safety Case
- Portable hand tools, e.g. air/electrical drills, grinders, hand lamps, are exempt from this Procedure as they are directly covered by the installation's Permit to Work (PTW) system

Not all TE as defined is within the scope of this Procedure. Chrysaor manages equipment that could be considered TE under more than one process. Portable or transportable electrical equipment is subject to management under Electrical Codes of Practice Procedure, CHRY-UKO-TAI-PROC-0213 [Ref 2]. Equipment Categories A, B and C are not therefore considered within the scope of this Procedure.

Refer to Appendix 1 for examples of TE that are categorised as in and out of the scope of this Procedure.

3.0 GLOSSARY OF TERMS

3.1 Abbreviations

ALARP	As Low as Reasonably Practicable
API	American Petroleum Institute
ASME	American Society of Mechanical Engineers
ATEX	Explosive Atmospheres
BOP	Blowout Preventer
CMMS	Computerised Maintenance Management System
COTE	Control of Temporary Equipment
CV	Curriculum Vitae
ESD	Emergency Shutdown
ETS	Emissions Trading Scheme
EU	European Union
F&G	Fire and Gas
FHA	Flexible Hose Assembly
HSEQ	Health, Safety, Environment and Quality
IAF	Inspection Assignment Form
ICB	Independent Competent Body
ICP	Independent Competent Person
MOC	Management of Change
OIM	Offshore Installation Manager
OMTL	Operations Maintenance Team Lead
ORA	Operational Risk Assessment
P&ID	Piping and instrumentation Diagram
PAT	Portable Appliance Testing
PMR	Planned Maintenance Routine

PO	Purchase Order
PTW	Permit to Work
QA	Quality Assurance
QC	Quality Control
SECE	Safety and Environmental Critical Element
SIN	Service Improvement Notice
TA	Technical Authority
TE	Temporary Equipment
TPI	Third-party Inspector
UK	United Kingdom
UKCS	United Kingdom Continental Shelf

3.2 Definitions

Business Partner	Any individual who is not staff, and any and all Chrysaor joint venture partners, service providers, suppliers, agents, advisers and consultants.
Category A	Portable electrical equipment normally issued for work, including hazardous areas, e.g. extension leads, hand lamps.
Category B	Portable electrical equipment held in workshops for use in workshops, control rooms, etc., e.g. test equipment, power tools.
Category C	Portable electrical equipment used in safe areas and not certified for use in hazardous areas, e.g. vacuum cleaners, televisions.
Category D	Portable electrical equipment brought offshore by contract or contractor staff to allow them to perform specialist tasks, e.g. diesel pumps, air compressors. This category is normally pre-inspected by Chrysaor's third-party inspection service provider. However, the equipment requires inspection on receipt offshore.
F-Gases	Fluorinated gases covered by the Kyoto Protocol, i.e. hydrofluorocarbon, perfluorocarbon and sulphur hexafluoride.
Flexible Hose Assembly (FHA)	A complete hose with end fittings and any associated accessories. (Also referred to as flexible hose.)
Hazardous Area	An area in which a flammable atmosphere might be expected to be present at such frequencies as to require special precautions for the construction and use of the equipment.
Mobile Plant	Diesel-driven plant that is towed or lifted to and from the worksite. This can include compressors, welding sets, auxiliary pumps, etc.
Must	'Must' provides the safest, most definitive drafting route to capturing the intended absolute obligation. Use 'must' where something is a requirement/obligation. Note: Use 'must not' where something is prohibited.
Non-operating Area	Areas that do not contain hydrocarbons or hazardous utilities, i.e. an area more than 15m from the nearest pipework containing hydrocarbons.

Operating Area	Areas containing hydrocarbons or hazardous utilities that are not classed as hazardous in hazardous area classification drawings, i.e. within 15m of pipework containing hydrocarbons.
Package Engineer	Person responsible for originating the package, initiating the procedure and shall be responsible for specifying the equipment required.
Portable or Transportable Electrical Equipment	Electrical equipment that does not form part of a fixed asset, but is intended to be connected to a fixed asset or generator by means of a flexible cable, and either a plug and socket or a spur box (or similar means). It includes equipment that is handheld or hand-operated while connected to the supply or is intended to be moved while connected to the supply. It also includes portable electrical equipment that is battery powered.
Shall	Use 'shall' where something is a requirement/obligation. Notes: 1. Use 'shall not' where something is prohibited. 2. Where possible, 'must' is the preferred term.
Should	Use 'should' or 'should not' as required where there is a recommendation or a goal.
Staff	Individuals directly employed by Chrysaor (irrespective of function, grade, position, asset or location), including all employees, officers, directors, contractors, and agency and temporary workers.
TE	Equipment that is not a permanent part of the asset and is intended to be replaced, removed or recertified after a period of 6 months. Some TE initially intended for short-term use may (for operational or other reasons) remain in use for extended periods. Prolonged use of TE in this way should be subject to the MOC system, ensuring it is subject to a more rigorous hazard assessment. Arrangements should be in place to periodically review the continuing status of equipment as temporary. TE is normally hired equipment (supplier supplied) and is not part of the asset's permanent inventory.
Third-party Inspection	An inspection carried out by a Chrysaor-appointed inspection service provider before offshore mobilisation. It is required where TE is safety critical, connected to safety-critical asset systems, or forms part of safety-critical asset systems.

4.0 KEY ROLES AND RESPONSIBILITIES

4.1 Temporary Equipment Originator

The TE Originator is the assigned Package Engineer or Specialist (Chrysaor or contractor) who initiates the process for TE that they require offshore. The TE Originator is responsible for specifying the equipment required, including:

- Specifying the equipment and required documentation (requisition then Purchase Order (PO))
- Initiating the Control of Temporary Equipment (COTE) process by completing COTE Sheet A Equipment List (refer to Control of Temporary Equipment Sheets/Forms, CHRY-UKO-HSEQ-FORM-1718 [Ref 3])
- Conducting the initial COTE hazard assessment using COTE Sheet B Pre-mobilisation Hazard Assessment (refer to Control of Temporary Equipment Sheets/Forms [Ref 3])
- Initiating formal MOC, if required
- Determining inspection requirements and initiating inspection using the COTE Inspection Assignment Form (IAF) (refer to Control of Temporary Equipment Sheets/Forms [Ref 3])
- Securing the inspection waiver/dispensation, if required, using the COTE Sheet E Inspection Waiver/Dispensation (refer to Control of Temporary Equipment Sheets/Forms [Ref 3])
- Confirming that the supplier is aware of and fully understands their responsibilities regarding the activity and implementation of this Procedure
- Supporting the COTE process throughout equipment mobilisation, installation, use and demobilisation/backloading, including ongoing liaison with contractor
- Supporting the resolution of any issues identified by the Third-party Inspector (TPI) that are identified during TE inspection(s)

4.2 Procurement (Buyer Responsible)

Chrysaor's Computerised Maintenance Management System (CMMS), allocates the procurement of services relating to a particular asset to the Buyer Responsible for that asset.

The nominated buyer is responsible for:

- Selecting a supplier and making sure that the supplier is aware of the requirements of this Procedure
- Ensuring that the appropriate inspection requirements are clearly detailed on the PO

4.3 Technical Authority

Technical Authorities (TAs) shall provide support to the TE Originator or Senior Quality Assurance (QA)/Quality Control (QC) Advisors to ensure that the correct quality requirements and technical standards are established for TE. TAs shall additionally provide technical support regarding the acceptability (or not) of TE where issues have been observed during pre-mobilisation inspection.

TAs shall support the resolution of any issues identified by the TPI during TE inspection or of a technical nature while the equipment is on the asset. This shall include the management of TE waivers/dispensation requests by adding their advice, recommendations and endorsement for acceptance as applicable.

4.4 Senior QA/QC Advisor/QA/QC Team Lead

The Senior QA/QC Advisor (Operations) and the QA/QC Team Lead (Wells Function) are responsible within their function for:

- Co-ordinating, monitoring and overseeing third-party TE inspection assignments
- Reviewing inspection requirements and relevant TE documents (including any proposed waivers/dispensations)
- Reviewing inspector's Curriculum Vitae (CVs) to ensure their competence
- Co-ordinating third-party inspections and providing relevant guidance to resolve any quality issues encountered during inspections
- Co-ordinating, monitoring and overseeing TE inspection registers including any third-party inspection service provider registers
- Ensuring the quality of any TPI TE inspection reports and associated records in order to ensure compliance with this Procedure and demonstrable traceability
- Uploading COTE sheets to the COTE Register and all documents and certificates to the relevant SharePoint folder

4.5 Quality & Assurance Team Lead

The Quality & Assurance Team Lead is the owner of this Procedure and is responsible for ensuring a consistent and effective approach to QA/QC of TE is implemented within the Health, Safety, Environment and Quality (HSEQ) Assurance Quality function.

4.6 Third-party Inspection Co-ordinator

The TPI Inspection Co-ordinator is an external resource within the TPI contractor, responsible for:

- Supporting the TE Originator to co-ordinate third-party inspections when requested
- Receiving the inspection request from Procurement and viewing inspection requirements (including any proposed waivers)

- Confirming that the TPI allocated to the Chrysaor TE assignment is competent and suitably qualified, has awareness and fully understands their responsibilities regarding activity and implementation of this Procedure
- Maintains applicable third-party TE inspection register(s)
- Receiving and uploading inspection reports and supporting records to their dedicated TE site, advising the TE Originator and Senior QA/QC Advisors when this is complete
- Providing weekly TE assignment reports to the Senior QA/QC Advisor
- Providing monthly expenditure reports to the Senior QA/QC Advisor
- Reporting and communicating any non-conformance encountered during TE inspection activities, and acting as a TPI focal point for resolution

4.7 Third-party Inspector

All third-party inspection personnel engaged in TE inspection activities are required to demonstrate suitable competency, and have the knowledge and experience of the equipment/process that they are deployed to inspect. TPIs shall:

- Conduct a pre-mobilisation inspection at the contractor's premises
- Endorse the contractor's TE Declaration of Conformance COTE Sheet C (refer to Control of Temporary Equipment Sheets/Forms [Ref 3]) to be submitted before completion of the COTE inspection assignment
- File inspection reports (highlighting any inspection issues) within 48 hours of the inspection visit
- Attach and sign the blue inspection tag (pre-shipment inspection) once accepted ready for delivery
- Initially discuss with the supplier if the equipment is deemed not fit for purpose for any reason, reject the equipment that is not suitable for use or is not compliant with this Procedure, contact the Senior QA/QC Advisor/QA/QC Team Lead (Wells Function) and detail any issues with the TE being inspected

- Notes:**
1. *Where applicable, the Senior QA/QC Advisor/QA/QC Team Lead (Wells Function) would raise a Service Improvement Notice (SIN) against the noted non-conformance. Only when the equipment is further inspected to the satisfaction of the TPI shall it be released for mobilising offshore.*
 2. *Due to unforeseen events it may not be possible for the TPI to conduct the pre-mobilisation inspection at the contractor's premises; during these times, remote inspection will be a 'temporary' option, however, whenever possible attendance at the contractor's premises is preferable.*

4.8 Temporary Equipment Supplier (Contractor)

The TE Supplier (contractor) shall be responsible for:

- Providing the Chrysaor-nominated third-party inspection service provider co-ordinator with a minimum of 48 hours' notice (i.e. 2 working days) ahead of the TE pre-mobilisation inspection visit at the contractor's premises
- Providing the specified equipment, accompanied by required documents, in accordance with the Chrysaor PO and/or load out list, and inspection requirements (IAF)
- Supplying fit-for-purpose equipment, in accordance with
 - Contractual obligations
 - Regulatory requirements, e.g. SI 1998/No 2306, The Provision and Use of Work Equipment Regulations 1998, SI 1998/No 2307, The Lifting Operations and Lifting Equipment Regulations 1998
 - Relevant industry guidelines, e.g. Oil & Gas UK Best Practice for the Safe Packing & Handling of Cargo to & from Offshore Locations
- Completing COTE Sheet C Contractor Declaration of Conformance (refer to Control of Temporary Equipment Sheets/Forms [Ref 3])
- Providing additional information/documents as required to support the Dutyholder's TE procedures (for TE mobilised to Chrysaor-operated non-production installations)

4.9 Supply Base Logistics Team

The Supply Base Logistics Team is responsible for:

- Receiving the TE from the supplier/contractor and ensuring it is shipped to the correct offshore asset
- Facilitating the inspection of equipment where required by providing free access to equipment regardless of location and working area for the purpose of equipment inspection and testing, ensuring the equipment is correctly manifested
- Assisting in the management of equipment backloaded from offshore for return to the equipment supplier/contractor

4.10 Offshore Materials Controller (or Delegate)

The Offshore Materials Controller (or delegate) is responsible for:

- Quarantining equipment before the TE assessment (i.e. before completion of COTE Sheet D Installation and Decommissioning Part 1 (refer to Control of Temporary Equipment Sheets/Forms [Ref 3]))
- Contacting the Senior QA/QC Advisor/QA/QC Team Lead (Wells Function) if the blue inspection tag (pre-shipment inspection) has not been signed and retaining the equipment in quarantine for investigation

- Gathering and reviewing the relevant certification and documents supplied with the TE
- Signing the red inspection tag (quarantine), tearing it off the pad along with the blue tag (pre-shipment inspection) and keeping it on file once the equipment has been accepted, then recording this on the TE register and raising all necessary handover certificates
- Making sure that the TE register is updated and fortnightly checks are completed to confirm all items are current on the asset
- Performing a monthly check of equipment that will highlight if diesel-driven equipment has been offshore for over 6 months and sending notification to the onshore Environmental Team
- Once notified that the equipment can be backloaded, removing the yellow inspection tag (registered), retaining it on file, leaving the green inspection tag (backload) to show that the equipment is ready to return onshore

4.11 Responsible Offshore Supervisor

The Responsible Offshore Supervisor (typically the Operations Maintenance Team Lead (OMTL) is responsible for:

- Ensuring that the TE is safely installed/removed
- Completing COTE Sheet D Installation and Decommissioning Parts 1/2
- Uploading COTE Sheet Ds to the COTE Register
- Supporting end users to ensure that equipment is used only for its intended purpose and within its approved limitations
- Conducting monthly inspections of TE and uploading maintenance check sheets to the COTE Register
- Carrying out periodic reviews of the TE register to ensure it is maintained. These shall be managed through SAP/Maximo maintenance routines completed monthly
- Notifying TE Originators of TE approaching 6 months
- Supporting MOC to assess long-term use of TE (>6 months)
- Ensuring the yellow inspection tag (registered) is then signed by the inspecting Technician (or competent delegate) to show that the equipment is fit for purpose

4.12 Offshore Installation Manager

The Offshore Installation Manager (OIM) is responsible for:

- Appointing a Responsible Offshore Supervisor for the TE process on the asset
- Accepting/rejecting inspection waivers or dispensations
- Accepting the final installation/removal of TE

4.13 Independent Competent Body

The Independent Competent Body (ICB) is the body appointed by Chrysaor to carry out independent verification of Safety and Environmental Critical Elements (SECEs), including TE, as required by SI 2015/No 398, The Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015.

Full details of the activities to be completed by the ICB are defined in the verification scheme. However, periodic ICB review of implementation of this Procedure is required by the verification scheme.

4.14 Environmental Advisor

The Environment Advisor shall update the European Union (EU) Emissions Trading Scheme (ETS) and Pollution Prevention and Control (PPC) permits on each asset to specifically include all Temporary Combustion Equipment that has been or will be on the asset for over 6 months.

5.0 CONTROL OF TEMPORARY EQUIPMENT PROCEDURE

5.1 Introduction

TE comprises equipment (either rental or Chrysaor owned) that is not a permanent part of Chrysaor operated assets, which is intended to be removed after a finite period of time (typically less than 6 months). This Procedure defines the process for and provides guidance on how TE is managed on all Chrysaor offshore assets and contracted drilling rigs.

This Procedure also details the responsibilities of Chrysaor staff and business partners when hiring or supplying temporary or portable equipment for use on UKCS offshore assets.

SI 2015/No 398, The Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015 requires Duty Holders (Operators) to identify SECEs on their installations and make sure that the SECEs are covered by an appropriate verification scheme. TE can become a SECE or can significantly impact existing SECEs. This Procedure complements the Chrysaor Performance Standard(s) for TE, and outlines the controls used by Chrysaor to demonstrate the management of risk that the use of TE may introduce. This Procedure complies with the Health and Safety Executive's Semi-permanent Circular Temporary Equipment Offshore, SPC/TECH/OSD/25.

Items categorised as TE generally interface with asset systems or have electrical (or other 'active' systems) incorporated into them. 'Active' systems may include connection or integration with equipment that is energised or shares energy from a remote energy source or housing that is of load-bearing connection or construction, or requiring:

- Electrical connection
- Pressure control connection
- Fluid control connection

TE used offshore ranges from small items, e.g. air-driven pumps or portable welding sets, to large skid-mounted packages, e.g. as generator packages or temporary process equipment. Some TE will have been considered within the installation Safety Case, e.g. well intervention equipment, well test equipment. Some permanent facilities may have been incorporated to facilitate the TE installation, e.g. permanent piping to drains, tie-in points for vent systems. As the life of the installation progresses, it may be necessary to introduce further TE that was not considered during the original design.

The use of TE may present new hazards to an offshore installation, and it is essential that these potential hazards are effectively managed.

5.2 Overview

Figure 1 shows the COTE cycle and includes where relevant responsibilities sit for the planning and inspection (onshore), and installation, operation and removal (offshore) of TE, as well as the requirements for supporting COTE sheets and supporting forms.

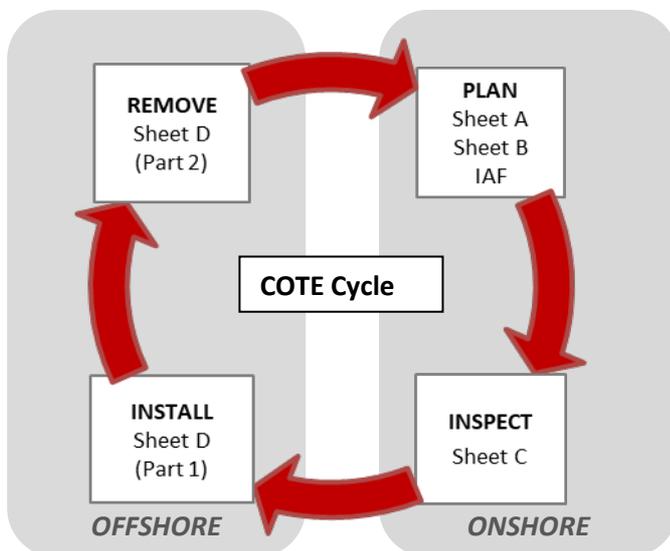


Figure 1 – COTE Cycle

Specific activities and requirements associated with each stage of the COTE cycle are further detailed in the relevant sections of this Procedure.

5.3 Plan

5.3.1 COTE Initiation Onshore

When TE is required to be mobilised offshore, the TE Originator requests a unique TE number from the Senior QA/QC Advisor/QA/QC Team Lead (Wells Function).

The Senior QA/QC Advisor/QA/QC Team Lead (Wells Function) initiates a corresponding entry in the COTE Register.

The TE Originator prepares COTE Sheet A Equipment List.

The TE Originator completes COTE Sheet B Pre-mobilisation Hazard Assessment. This assesses potential impacts to the:

- Safety Case, e.g. introduces new SECE, impacts existing SECE or Performance Standard
- Operating hazards, e.g. toxicity, ignition source, noise vibration
- Asset interface, e.g. emergency shutdown, escape route obstruction, crane operating limits
- Safety procedures, e.g. manual, training

If required, the Chrysaor Verification Engineer and/or the asset's Independent Competent Person (ICP) are consulted before deployment in order to define the appropriate verification tasks. For Well Operations, the ICP takes credit for the review performed by the Well Examiner of planned operations.

Note: Refer to Section 7.0, which describes occasions when the planned use of TE also requires the implementation of MOC Procedure [Ref 1] to assess potential implications.

5.3.2 Inspection Planning

A TE Inspection Guide (refer to the Governance & Assurance SharePoint site) is maintained for Operations/Decommissioning and Well Operations, specifying the inspection and certification requirements for the types of TE typically used offshore. This provides minimum requirements for the TE.

The TE Inspection Guide should be consulted by the TE Originator, contractor and Inspector as required when initiating TE inspections, completing relevant COTE Sheets and conducting inspections. The TE Inspection Guide clarifies additional requirements, in terms of certification by the contractor's ICB, for TE that is considered safety or environmentally critical.

Additional TE Guidance is provided in Appendix 2, which further details the TE requirements for typical types of TE used offshore.

Note: Equipment deemed safety or environmentally critical typically requires an initial design review by the contractor's ICB. It then either requires ICB re-certification every 12 months or must be covered by the contractor's written examination scheme, endorsed by their ICB.

The TE Originator initiates COTE Sheet C Contractor Declaration of Conformance.

For equipment mobilised to Chrysaor-operated asset(s) or Chrysaor-operated non-production assets, the TE Originator prepares the COTE IAF, identifying QA/QC requirements. This form provides a drop-down menu that details an asset-specific utilities checklist.

The TE Originator then submits COTE Sheets A, B, C and D and the IAF to the Senior QA/QC Advisor/QA/QC Team Lead (Wells Function), who reviews them, then forwards them to the following (copying the TE Originator):

- TE contractor, as notice of impending TE inspection
- Inspection agency
- Material Controller, OMTL or delegate, as notice of impending TE mobilisation

The TE contractor and/or TE Originator are responsible for notifying the Senior QA/QC Advisor/QA/QC Team Lead (Wells Function) at least 48 hours (2 working days) before any pre-mobilisation inspection visit. This is to provide sufficient time to arrange for TPI attendance.

Where circumstances arise that third-party inspection cannot be performed, the TE Originator is responsible for completing an Inspection Waiver/Dispensation, that the Senior QA/QC Advisor/QA/QC Team Lead (Wells Function) reviews and the appropriate onshore authority (TA (Ops/Decom)/ Chief Engineer (Wells Function)) authorises. The TE Originator must then send this to the OIM for their final acceptance (or rejection). This approved inspection waiver/dispensation e-mail must be attached to COTE Sheet C Contractor Declaration of Conformance. The waiver/dispensation does not relieve the contractor of their duty to comply with Chrysaor specifications, United Kingdom (UK) regulations, or industry best practice.

Note: *Inspection waivers/dispensations should only be used for exceptional circumstances where TE inspection/verification is not possible.*

5.4 Inspect

Following onshore inspection by a TPI QC Inspector, the TE is authorised for release and mobilisation offshore by the endorsement of COTE Sheet C Contractor Declaration of Conformance by the Chrysaor TPI. The TPI Co-ordinator scans and e-mails it to the Senior QA/QC Advisor/QA/QC Team Lead (Wells Function) (J-Area, Britannia and Armada, Everest, Lomond and Erskine) for uploading to the COTE Register. For high-volume equipment mobilisations (as are typical for well intervention work) it is acceptable for the Inspector to reference the contractor's load out list on COTE Sheet C Contractor Declaration of Conformance, attaching a scanned copy as back-up, rather than itemising every item separately on Sheet C.

The TPI QC Inspector then fixes a COTE tag (refer to Table 1) to the TE to indicate that it has been authorised for mobilisation.

Colour	Use
Blue	Pre – Shipment Inspection
Red	Quarantined – Do Not Use
Yellow	Registered
Green	Back-load

Table 1 – Temporary Equipment Inspection Tags Colour-coding

For well intervention equipment, or where a significant volume of items are associated with each TE mobilisation, tagging is limited to the following key equipment:

- Diesel generation/zone-rate equipment
- Electrical equipment, which is tied into the asset

5.4.1 Shipping Goods Offshore

the Third-Party Inspection Co-ordinator sends supporting documents to the Offshore Materials Controller or delegate before shipping.

The Offshore Materials Controller or delegate then receives the TE offshore. It is their responsibility to make sure that the equipment is received and quarantined before assessment.

The equipment inspection tags in Figure 2 should be signed as appropriate (refer to Table 1).

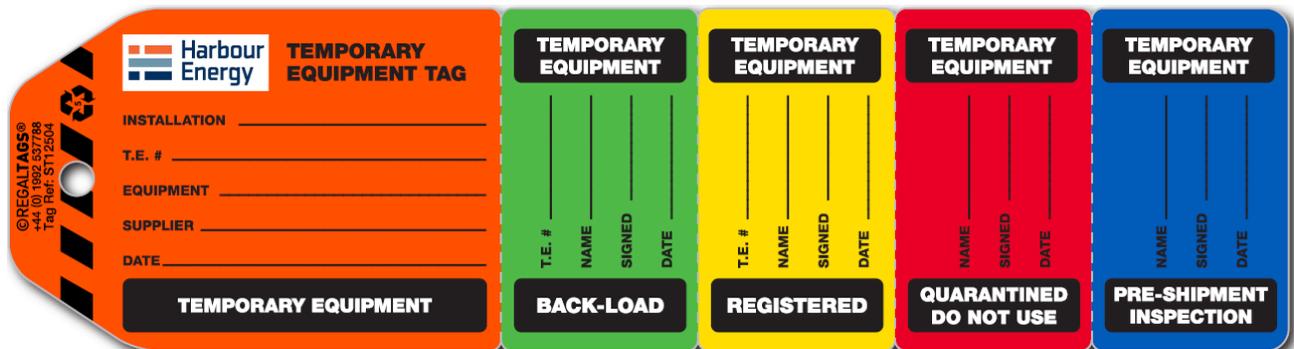


Figure 2 – Equipment Inspection Tags

5.4.2 Inspection Tags

The Offshore Materials Controller or delegate shall ensure the equipment has a blue inspection tag attached and is signed as appropriate. In the event that TE is received offshore without a blue (inspection) tag, then a SIN should be raised on the responsible contractor.

The Offshore Materials Controller or delegate must make sure the equipment is free from shipping damage and has arrived with the correct documents.

The TE process is 'owned' offshore by the OMTL or their delegate. They are responsible for having equipment inspected offshore by relevant platform personnel from an appropriate discipline (e.g. Responsible Electrical/Instrument Person), and released from quarantine for use thereafter.

The Offshore Materials Controller or delegate then updates the TE register. They enter the equipment details into the TE register. The TE register is used to capture the written approval of the equipment, including the following details:

- The type of TE
- How the TE is being used on the asset
- The TE owner
- Relevant TE approval signatures
- The date of arrival, with the relevant manifest number
- The date of return, with the relevant consignment note number

The TE register shall be reviewed with sufficient frequency to:

- Gain assurance of the quality with which risks are being managed
- Mount an effective challenge to the duration of use of individual pieces of TE and hence challenge the gradual creep in the operating envelope that cumulative and/or long-term use of TE creates

The TE register shall be issued as follows:

- The control location shall have a readily available and up-to-date register of all TE in use
- The OMTL or delegate is ultimately responsible for the installation of the TE for use. This must be carried out as per the asset-specific procedures for safe installation and use
- If the TE is to be installed offshore for more than 6 months, the equipment is not temporary and must be allocated a tag number, registered in the asset CMMS and managed as other permanently installed equipment

Note: *Installation of TE offshore for more than 6 months must be in accordance with the Planned Maintenance Routine (PMR) advice from the supplier. The MOC process is used for managing the permanent installation.*

Offshore PMRs of TE must be completed where required, or the equipment should be backloaded to allow for re-certification or replacement. Backloading should be arranged in accordance with the current relevant asset process.

Note: *Currently Armada, Everest, Lomond and Erksine use consignment notes to return materials that are then entered as a manual line on the Maximo backload manifest. Britannia and the J-Area use the returns functionality within SAP ECC6, which automatically creates a line for pulling onto the backload manifest.*

5.4.3 TE Mobilised to Chrysaor-operated Non-production Installations

The TE Originator (Engineer) and contractor need to liaise with the rig owner (Duty Holder) to ensure that the rig's TE/verification procedures are adhered to, based on the TE being utilised.

In this case, the pre-mobilisation inspection is carried out in accordance with the inspection codes defined in the TE Inspection Guide, which are incorporated into the master equipment list by the Equipment Planner (Wells Function), i.e. for rig-based work, only COTE Sheet C Contractor Declaration of Conformance is required.

5.5 Install and Operate

Installation of TE on a Chrysaor production installation shall be reviewed by the OMTL or delegate by completion of COTE Sheet D Installation and Decommissioning Part 1 (Installation). Any items missing from the TE package (versus those listed on COTE Sheet A Equipment List) or any issues with safe installation of the TE shall be reported to the TE Originator and copied to the Senior QA/QC Advisor.

Without exception, all TE installation shall be accepted by the OIM (or delegate) before use.

The OMTL or delegate is responsible for ensuring the COTE yellow tag indicates the equipment is ready for use, and then uploads the countersigned copy of COTE Sheet D Installation and Decommissioning Part 1 to the COTE Register.

Note: *TE received offshore shall go through a quarantine period whereupon the equipment shall be inspected for transport damage, all equipment manifested is checked and accounted for, and all supporting documents are readily available. The TE must not be used whilst the red and blue COTE tags are still in place, and the yellow COTE tag has not been signed by a competent technician(s). Only the Offshore Materials Controllers or OMTL (or delegates) may remove the COTE tags. Refer to Appendix 4 for further guidance.*

The Materials Controller or delegate monitors the status and validity of the TE entered onto the asset TE register by carrying out fortnightly checks that include deck sweeps to confirm that all items of TE on the asset align with the TE inventory recorded on the TE register.

The offshore Materials Controller or delegate performs a monthly check of equipment to highlight if diesel-driven equipment has been offshore for more than 6 months and sends notification to the Onshore Environmental Team.

Once COTE Sheet D Installation and Decommissioning Part 1 has been signed off by the asset Installation Team and accepted by the OIM, it is the responsibility of the OMTL or delegate to conduct monthly TE inspection routines (as per generic SAP/Maximo maintenance routines to check TE) and upload the monthly checksheets to the COTE Register. This should include a review of remaining certification for the TE. Both the TE Originator and the OMTL or delegate should monitor the extended use of TE on an asset. The OMTL or delegate must notify the TE Originator after 5 months (or if certification is expiring) to plan for its removal.

5.5.1 In-service Failures

During offshore operations, the TE Originator shall report any TE failures to the Senior QA/QC Advisor using a SIN as per UK Service Improvement Notice Procedure, CHRY-UKO-HSEQ-PROC-1301 [Ref 4].

All SINS relating to TE shall be registered in Synergi.

5.5.2 Inter-field Transfers

Where TE is transferred inter-field, the TE Originator is responsible for:

- Requesting a new TE number, and entry in the COTE Register (cross-referencing the previous COTE TE number)
- Generating a new COTE Sheet A Equipment List, which may be a subset of the original load out
- Generating a new COTE Sheet B Pre-mobilisation Hazard Assessment, to reflect hazards on next installation
- Including the original COTE Sheet C Contractor Declaration of Conformance

- Verifying that the remaining certification is acceptable for the new planned use
- Initiating a new COTE Sheet D Installation and Decommissioning (to reflect installation on new asset)

In this situation only, the OMTL (or delegate) are authorised to apply new COTE tags to the relevant equipment to be transferred.

Note: *The total duration of a single item's total use offshore **must not exceed 6 months**.*

5.6 Remove

For asset-based work, the, OMTL or delegate are responsible for ensuring that equipment is decommissioned/backloaded as per COTE Sheet D Installation and Decommissioning Part 2 (Removal). This must be countersigned by the OIM or delegate, then uploaded and closed out on the COTE Register by either the Material Controller or OMTL as per the applicable TE delegations on the asset.

Note: *If TE is temporarily backloaded, e.g. for repairs, the existing COTE entry must be closed, i.e. COTE Sheet D Installation and Decommissioning Part 2 completed. A new TE number must then be raised and entered in the COTE Register in order to trigger a new onshore inspection cycle, i.e. the full suite of new COTE documentation is required ahead of re-mobilisation.*

5.6.1 Dispensations for Temporary Equipment: Acceptance by OIM

As a result of technical or quality issues associated with TE or its records, the OIM may be required to authorise a waiver/dispensation to allow its acceptance for use on the asset. This shall be applied during exceptional circumstances only.

TE waiver/dispensation requests shall be considered only when a completed COTE Sheet E Inspection Waiver/Dispensation is provided to the OIM. Requests should be submitted by the Equipment Package Engineer, Wells Logistics, a TA, the Senior QA/QC Advisor or Integrity Engineer.

Such circumstances may include, but are not be limited to:

- Where third-party inspection of TE has not been completed prior to shipment
- Where issues with equipment certification or records of inspection are identified
- Where it is discovered that there are physical or technical issues with equipment

The OIM may draw on offshore or onshore technical support or the advice of other functional experts when considering the acceptability of a dispensation request. For issues of a technical nature, the OIM shall request supporting authorisation from the relevant TA or other specialist(s). The TA/specialist shall add their advice, recommendations and signature to the dispensation request.

The OIM shall e-mail a copy of the completed COTE Sheet E Inspection Waiver/Dispensation to the asset OMTL or delegate for recording on the TE register.

Where a waiver/dispensation is raised, the OIM shall contact the relevant TA to discuss if the risks of using the TE can be mitigated by controls on a work permit, or if an operational risk assessment

should be carried out for the use of the equipment (where required, refer to Operational and Deferral Control Risk Assessment and Management Procedure, CHRY-UKO-OPS-PROC-0412 [Ref 5]).

6.0 WELLS FUNCTION SPECIFIC TEMPORARY EQUIPMENT REQUIREMENTS

The additional requirements and criteria presented in this section are applicable to TE used by the Wells Function only.

6.1 Well Operations Third-party Inspection of Safety and Environmental Critical Elements

Rental items that are wellbore pressure containing, structural/load-bearing or Zone 1/2 rated equipment shall be inspected at contractor's premises by the Chrysaor third-party inspection service provider's nominated person(s) before shipping offshore.

6.2 Well Operations Sample Inspection of Non Safety and Environmental Critical Elements

This type of equipment is subject to sample inspection only at contractor's premises by the Chrysaor third-party inspection service provider's nominated person(s); these contractors will be picked at random by the QA/QC Team Lead (Wells Function) based on the daily rig logistics reports.

Refer to Appendix 1 for TE listed for sample inspections.

6.3 Damage to Temporary Equipment (Well Operations)

Damage to TE returned from offshore must be reported by the contractor to the relevant Superintendent within 7 working days. Any repair costs/equipment deemed as scrap that exceeds £1000 will require verification by the QA/QC Team Lead (Wells Function). Once repairs are verified and accepted, the contractor can submit costs for reimbursement.

7.0 TEMPORARY EQUIPMENT AND MANGEMENT OF CHANGE

When completing the initial COTE hazard assessment (COTE Sheet B Pre-mobilisation Hazard Assessment), consideration should be made as to whether an MOC should be raised, and MOC Procedure [Ref 1] should be followed.

An MOC must be considered when the use of TE:

- Impairs SECE and/or Performance Standards and Chrysaor policy
- Has the potential to infringe the safe operating limits of an asset, existing hazards and risk profiles
- Requires updates to engineering documents (Piping and Instrumentation Diagrams (P&IDs), cause and effect charts, specifications, etc.), programmes and procedures
- Introduces new technology, as defined in Appendix 3

Typical examples of when an MOC is required for TE are:

- Connecting to hydrocarbon process equipment, piping or instrumentation (unless the tie-in is part of the original design premise)
- Tie-in of temporary air compressor to air system
- Installation of a temporary chemical injection pump that requires P&ID update
- Tie-in of temporary power generation to electrical system
- Trial of a new filtration system or chemical
- Installation of a temporary potable water system
- Venting of well inventory, other than via dedicated point on vent header (as per existing P&ID)
- Flowing production fluids through TE installed on the asset

Technical Safety Engineers or the relevant TA can provide guidance if in any doubt as to whether an MOC is required.

If an MOC is required, the MOC number shall be recorded on the COTE Sheet B Pre-mobilisation Hazard Assessment (and MOC Register) for reference by the asset during installation, use and removal.

7.1 Long-term Use of Temporary Equipment (Management of Change)

When TE is required to be used for a period that exceeds the 6-month limit, the TE Originator in conjunction with the relevant TAs must conduct a formal MOC to safely manage its extended use. This may require significant engineering review and/or risk assessment.

If retained, the COTE Originator shall raise a SAP/Maximo PM as an output of MOC in order to assign a functional location to the equipment, which will thus be included in the SAP/Maximo PM. The OMTL or delegate then closes out the relevant TE number on the COTE Register.

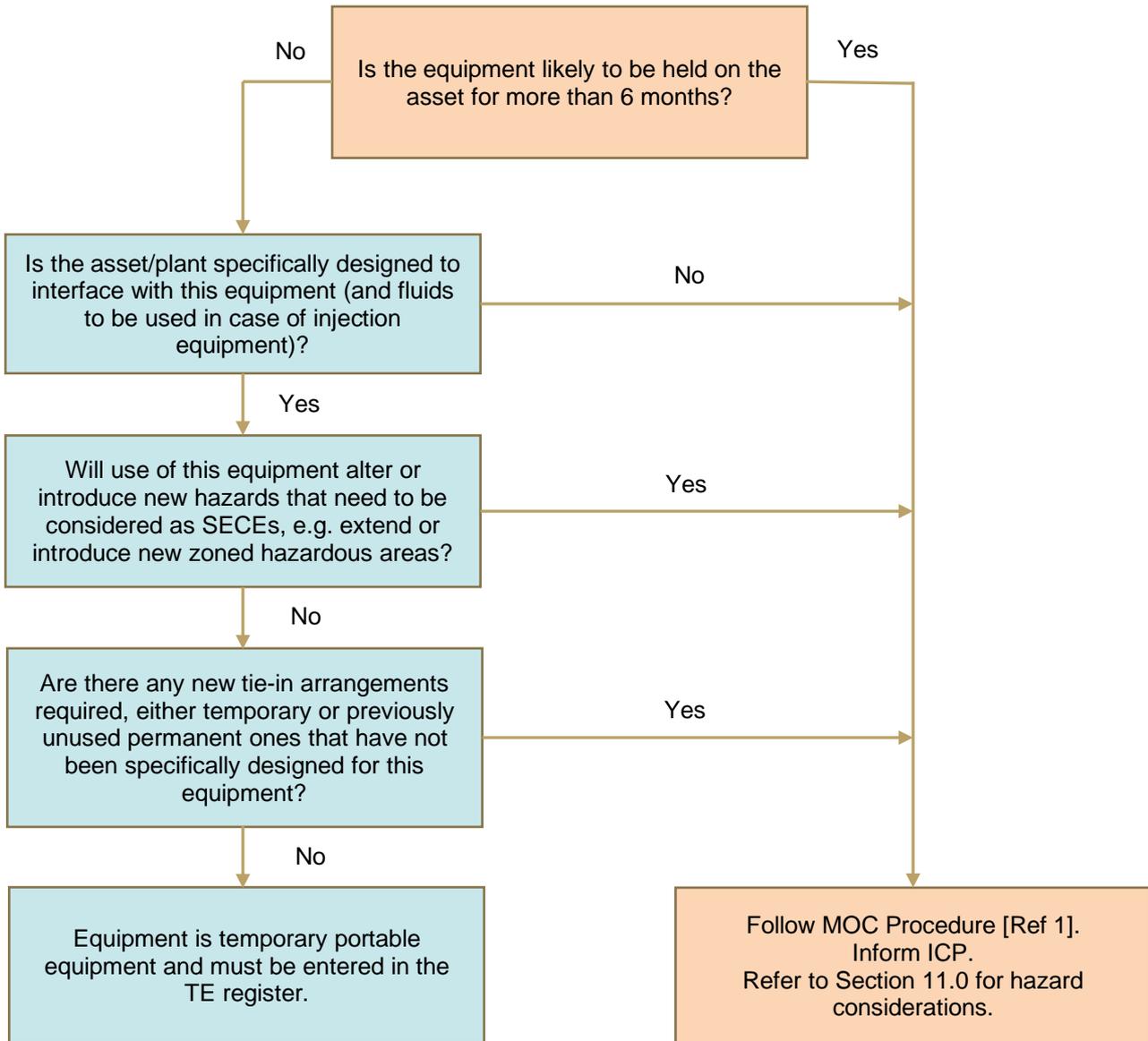


Figure 3 – MOC versus Temporary Equipment Decision Tree

8.0 RECORDS

When an item of TE has been decommissioned and backloaded, the Senior QA/QC Advisor/ QA/QC Team Lead (Wells Function) shall upload all of the TE inspection documents as follows onto COTE Register/SharePoint:

- COTE Sheet A Equipment List
- COTE Sheet B Pre-mobilisation Hazard Assessment
- Sheet C Contractor Declaration of Conformance
- Sheet D Installation and Decommissioning
- Sheet E Inspection Waiver/Dispensation
- IAF
- Inspection visit reports
- TE certification

These records should be accessible by the Quality Team and relevant Chrysaor personnel.

8.1 Control of Temporary Equipment Sheets/Forms

Control of Temporary Equipment Sheets/Forms [Ref 3] contains:

- Sheet A Equipment List
- Sheet B Pre-mobilisation Hazard Assessment
- Sheet C Contractor Declaration of Conformance
- Sheet D Installation and Decommissioning
- Sheet E Inspection Waiver/Dispensation
- IAF
- Contractor Final Inspection Checklist – COTE

9.0 TRAINING AND COMPETENCE

All TE Originators, users of TE and QA/QC personnel shall be familiar with the content of this Procedure.

All Chrysaor or contractor personnel who work with the COTE process, both onshore and offshore, shall have sufficient competence in terms of relevant knowledge and experience of the TE that they work with, and its intended use.

All third-party inspection personnel shall have a minimum of 5 years' experience in their respective discipline, must be trained to a recognised industry standard, and hold the relevant qualifications to carry out their assignment. CVs for all TPIs are reviewed and approved by Chrysaor Senior QA/QC Advisors (Operations) and the QA/QC Team Lead (Wells Function), as well as relevant function representatives to assess their suitability and competence. On acceptance, relevant CVs are retained and stored in the HSEQ Assurance Team's Quality site.

The Senior QA/QC Advisors (Operations) and QA/QC Team Lead (Wells Function) shall be sufficiently knowledgeable and competent to provide guidance and offer advice on the COTE process and/or its applicability to possible TE being sourced for use.

10.0 AUDIT AND ASSURANCE

The COTE process is subject to routine audit and assurance activities. Relevant requirements for COTE process audits are defined in Chrysaor's risk-based annual audit plan.

The COTE process is audited routinely on assets by means of either Level 2 internal audits or Level 3 asset assurance activities. In addition, key TE suppliers/contractors and TPIs may also be subject to Level 4 contractor audits to ensure their ability to provide a level of service in accordance with contractual requirements and Chrysaor expectations.

Outcomes and subsequent actions of all levels of audits are recorded in Synergi.

11.0 REFERENCES

Note: *The BMS document references below are subject to change. The electronic BMS should be consulted for the most up to date revisions.*

1. Management of Change Procedure, CHRY-UKO-TAI-PROC-0236.
2. Electrical Codes of Practice Procedure, CHRY-UKO-TAI-PROC-0213.
3. Control of Temporary Equipment Sheets/Forms, CHRY-UKO-HSEQ-FORM-1718.
4. UK Service Improvement Notice Procedure, CHRY-UKO-HSEQ-PROC-1301.
5. Operational and Deferral Control Risk Assessment and Management Procedure, CHRY-UKO-OPS-PROC-0412.
6. Flexible Hose Assembly Management Procedure, CHRY-UKO-TAI-PROC-0777.
7. Facilities Engineering Management Standard, CHRY-UKO-TAI-ST-0083.
8. Permit to Work Procedure, CHRY-UKO-PRD-PROC-0231.
9. F-Gas Management Procedure, CHRY-UKO-HSEQ-PROC-0626.

Performance Standards

- Performance Standards for TE
- F&G Detection Performance Standard

Legislation

This Procedure complies with:

- SI 1998/No 2306, The Provision and Use of Work Equipment Regulations 1998
- SI 1998/No 2307, The Lifting Operations and Lifting Equipment Regulations 1998
- SI 2015/No 398, The Offshore Installations (Offshore Safety Directive) (Safety Case etc.) Regulations 2015
- SI 2013/No 971, The Offshore Combustion Installations (Pollution Prevention and Control) Regulations 2013

Legislation also referenced:

- SI 2005/No 1643, The Control of Noise at Work Regulations 2005
- SI 1989/No 635, The Electricity at Work Regulations 1989

External Documents

- Best Practice for the Safe Packing & Handling of Cargo to & from Offshore Locations, Oil & Gas UK
- Semi-permanent Circular Temporary Equipment Offshore, SPC/TECH/OSD/25, Health and Safety Executive
- Marine and Subsea Operations – Risk Management, DNV-RP-N101, DNV
- Marine and Machinery Systems and Equipment, DNV-OS-D101, DNV
- Process Piping, ASME B31.3, ASME
- Metallic industrial piping, BS EN 13480
- Pressure Vessels, ASME VIII
- Specification for unfired pressure vessels, PD 5500:2021
- Specification for Wellhead and Tree Equipment, API Spec 6A, API
- Specification for Unbonded Flexible Pipe, API Spec 17J, API
- Drilling and Well Servicing Equipment, API Spec 7K, API
- Choke and Kill Equipment, API Spec 16C, API

- Centrifugal Pumps for Petroleum, Petrochemical and Natural Gas Industries, API Standard 610, API
- Gas Turbines for the Petroleum, Chemical, and Gas Industry Services, API Standard 616, API
- Axial and Centrifugal Compressors and Expander-compressors, API Standard 617, API
- Positive Displacement Pumps—Reciprocating, API Standard 674, API
- Positive Displacement Pumps—Controlled Volume for Petroleum, Chemical, and Gas Industry Services, API Standard 675, API
- Positive Displacement Pumps—Rotary, API Standard 676, API
- BS EN 60079. Explosive atmospheres
- ISO 80079-36:2016 Explosive atmospheres — Part 36: Non-electrical equipment for explosive atmospheres — Basic method and requirements
- DNV Standard for Certification No. 2.7-1
- BS EN 12079-1:2006 Offshore containers and associated lifting sets. Offshore containers. Design, manufacture and marking
- DNV Certification Note 2.7-2
- International Convention for the Safety of Life at Sea
- NORSOK Z-015
- BS EN 50381
- BS EN 1834-1:2000 Reciprocating internal combustion engines. Safety requirements for design and construction of engines for use in potentially explosive atmospheres. Group II engines for use in flammable gas and vapour atmospheres

Supporting Documentation

- Audit Procedure, CHRY-UKO-HSEQ-PROC-0244
- Level 2 Internal Audit Procedure, CHRY-UKO-HSEQ-PROC-1365
- Level 3 Asset Assurance Audit Procedure, CHRY-PROC-UKO-HSEQ-1366
- Level 4 Contractor Audit Procedure, CHRY-PROC-UKO-HSEQ-1367
- COTE Level 3 Audit Checklist, CHRY-UKO-HSEQ-FORM-0598
- SI 2008/No 1597, The Supply of Machinery (Safety) Regulations 2008
- SI 1999/No 2001, The Pressure Equipment Regulations 1999

APPENDIX 1 TEMPORARY EQUIPMENT IN AND OUT OF SCOPE

Temporary Equipment (TE) extends to multiple equipment types managed under more than one system. While not an exhaustive list, the following examples are considered in scope.

Examples of Temporary Equipment in Scope

Electric motor-driven pump skids	Temporary diesel engines
Torquing and tensioning equipment	Temporary portable generators including Steam
Temporary logging units	Temporary offices
Temporary workshops/containers and stores with or without electrical equipment	Transportation container (if used for storage for more than one month)
Temporary accommodation/and or personnel worksite decontamination facilities	Temporary air compressors/ driers/receivers
Welding arc-gen generators	Air manifold for compressor / manifolds
Chemical injection units	Rigging lofts, workshop containers
Flow meters	Transformers
Air receivers	Heaters
Pump – gas booster, grease/hydraulic, air/ pressure, torque	Portable tanks
Plug/check valves	Power source
Paint pump units	Liquid nitrogen packages
High pressure jetting equipment	Nitrogen convertors
Waste compactors	Air/nitrogen/chemical/high pressure hoses
Winches	Steam cleaners, hot wash units
Tubing/casing make up and running equipment	Blowout Preventor (BOP) stacks
Control cabins – temporary, e.g. directional drilling, wireline, coiled tubing	Gas detection units
Temporary well control fluids processing equipment, e.g. crossovers, lubricators, riser sections, stuffing boxes, valves or flexible hoses	Temporary control cabins, e.g. directional drilling, wireline winch units and power packs, wireline masts, coiled tubing spreads, well test spreads and associated equipment
Air Hoists	Flange face machines
Flaring machine	

Examples of Temporary Equipment Not in Scope

While not an exhaustive list, the following examples are considered not in scope.

Measuring equipment	Torque wrench
Hand drills	Hand-held test equipment
Angle grinder	Hoses – air, hydraulic, polyflex
Blast helmet	Extension cables
Blast pot	Gauge - pressure
Bristle blasters	Gauge – torque pump
Chart recorders	Needle gun
Saw – reciprocating	Radio
Laptop computers	Regulators
Cameras	Chrysaor-owned equipment registered and maintained under Maximo/SAP
Portable tools certified for use in a non-hazardous area	

Note: *Portable equipment designed and supplied along with permanent facilities, e.g. turbine wash skids, ATF tanks, self-contained breathing apparatus, helicopter start kits, and chemical transfer pumps, is not considered TE.*

Temporary Equipment (Rental) Wells Function – Inspection Categories

Inspection Required (SECEs)	
Coiled tubing spreads	Wireline BOPs/controls
Well test packages	Power packs
Diesel-driven units	Chiksan packages (refer to Note)
Lower riser package emergency disconnect package tension joints	A60 cabins
Wellheads and valves	Zone-rated equipment
Surface trees	Riser/lubricators
Dual-bore risers	Riser adaptors/spools
Wireline packages	Pumps/compressors/generators

Inspection Not Required/By Sample	
Mud motors/geopilot tools	Drill bits
Bottomhole assembly/measurement while drilling/logging while drilling	Crossovers/spiro torq
Handling equipment	Cargo carrying units/tanks, etc.
Drillpipe/collars/heavy-weight drillpipe)	Oil country tubular goods/conductors
ROV equipment	Towing equipment
Lifting equipment	Retrievable test treat squeeze packages
Rig cooling equipment	Wellbore clean-up packages
Riser pulling equipment	Fishing tools
Liner shoe track equipment	Cement heads
Logging tools	Jars/accelerators
Vacuum/free-flow equipment	

Note: *Visual inspection only. Detailed onshore inspection is not required.*

Equipment provided is certified for use and the condition is monitored while in service.

At onshore inspection and asset receipt, Chiksan shall be recorded and registered as a package and not as individual components.

APPENDIX 2 ADDITIONAL GUIDANCE FOR TEMPORARY EQUIPMENT

General

Except where specifically stated that a Chrysaor standard shall apply, equipment shall meet recognised industry standards applicable to the equipment.

All Temporary Equipment (TE) is required to comply with appropriate regulations, e.g.:

- SI 1998/No 2306, The Provision and Use of Work Equipment Regulations 1998,
- SI 1998/No 2307, The Lifting Operations and Lifting Equipment Regulations 1998
- SI 2005/No 1643, The Control of Noise at Work Regulations 2005
- SI 1989/No 635, The Electricity at Work Regulations 1989

This appendix defines the requirements for TE intended for use on Chrysaor United Kingdom Continental Shelf (UKCS) operated assets, these requirements are in addition to those defined within the associated safety and environmental critical element Performance Standard for each asset. Where TE is safety critical, the suitability of the equipment must be verified by the Independent Verifier. This is carried out on a sample basis, as defined in the verification scheme.

General requirements and guidance for meeting European Union (EU) directives are detailed in the next section. The TE Originator is responsible for engaging stakeholders including Technical Authorities (TAs), contractors/suppliers, delegated offshore personnel and the Senior Quality Assurance (QA)/Quality Control (QC) Advisors and QA/QC Team Lead (Wells Function), as necessary, to ensure that the TE procured is suitable for use on Chrysaor UKCS operated assets.

EU Directives

EU directives are applicable to equipment used within the EU. EU Declarations of Conformity applicable to all EU directives shall be supplied with the relevant equipment. If a directive is stated by the supplier as not applicable, justification shall be provided to confirm why this is the case.

Equipment supplied to Chrysaor where the EU directives are most likely to apply are:

- Pressure equipment
- Simple pressure vessels
- Machinery directive
- Equipment and protective systems in potentially Explosive Atmospheres (ATEX)
- Low voltage directive
- Electromagnetic compatibility
- Marine equipment directive

- Radio and telecommunications terminal equipment
- Medium combustion plant

Hazard Considerations

TE brought onto an asset (more specifically, packaged TE integrated into the operating system) that is a non-routine piece of equipment may not have been considered in hazard assessments during the original design phase.

In such cases, the TE should be considered as a modification, which for a defined period of operation becomes an integral part of the asset with the potential to present new hazards.

For particular guidance on hazard assessment, inspection and testing of TE, etc., refer to Marine and Subsea Operations – Risk Management, DNV-RP-N101. For guidance on equipment certification, refer to Marine and Machinery Systems and Equipment, DNV-OS-D101.

The normal procedure is to install TE under the asset's Permit to Work (PTW) system.

The PTW system normally addresses the control of hazards associated with the installation and removal of equipment, for example:

- Safe isolations
- Purging
- Personal protective equipment
- Temporary fire protection arrangements
- Spill to sea

However, there is a risk that the assessment process may not fully address further hazards arising from the integration of the TE into an existing operating system. It is the intent of this Procedure that where that is the case, the Management of Change (MOC) system is used to control the installation and use of the equipment.

Examples of how additional hazards might arise include the following:

- System impacts arising from the introduction of additional isolations
- Temporary changes to the existing operating conditions
- Temporary bypassing of equipment
- Situations where safety or relief requirements are changed

As in permanent modification, consideration should be given to properly conducted and formal hazard identification and assessment processes to reduce any new risks to As Low as Reasonably Practicable (ALARP). Where temporary services are run to equipment, it may be appropriate for a review to be conducted onsite to fully appreciate any local factors, e.g. temporary routings and access considerations.

Consider layout, as packaged TE units have the potential to affect existing defined hazardous area zones, established escape and transfer routes, restriction of explosion vent paths, maintenance access restrictions, operating envelopes, e.g. cranes. TE that has the potential to produce missiles or dropped objects following a serious failure, or due to inadequate fixing to the asset structure, could present new hazards to permanent equipment. Where this is the case, it should be established that any equipment potentially affected is not safety critical.

Locating equipment in areas that are open to the sea limits the ability to contain spills in the event of containment failure. Consideration should be given to locating equipment away from grated areas or away from the asset edge.

TE may already be in use on the asset, so the hazard assessment needs to consider this and any potential cumulative risk which may result from the introduction of more TE.

TE can introduce risks, which include (but are not limited to) the following:

- Temporary flexible or fixed piping systems with revised routings
- Temporary tie-ins to permanent systems
- Temporary isolations – piping/mechanical/electrical/control/emergency shutdown
- Temporary revised or new operating procedures
- Temporary hazardous zones
- Temporary space and/or load restrictions, lifting or laydown restrictions
- Temporary revised maintenance and inspection requirements
- Temporary amendments to process design
- Temporary revised or new human interfaces
- Contract staff
- Temporary new dependencies
- PTW requirements
- Possible evacuation, escape and rescue impacts
- Additional management responsibilities
- Additional sources of hazard from equipment failure (missiles, loss of containment, ignition sources, environmental impact through leaks or spillage, etc.)
- Temporary layout considerations (including effects on explosion venting, maintenance or other access requirements, natural venting impacts, effectiveness of fire and gas detection arrangements, etc.)

General Specific Requirements by Function/Type

Hydrocarbon Containing Piping

All piping and fittings shall be designed, built and tested in accordance with a recognised process piping construction code, e.g. Process Piping, American Society of Mechanical Engineers (ASME) B31.3, Metallic industrial piping, BS EN 13480, and suitable for the environmental conditions.

Pressure Vessels

All pressure vessels shall be designed to a recognised pressure vessel construction code, e.g. Pressure Vessels, ASME VIII, PD 5500:2021 Specification for unfired pressure vessels, with safety margins in accordance with the functional requirements. Equipment shall be adequate for foreseeable conditions that shall account for all anticipated internal and external loads, upset and emergencies.

Flexible Hose Assemblies

FHAs in hydrocarbon service shall be selected in accordance with recognised industry standards, e.g. American Petroleum Institute (API) Specifications 6A Specification for Wellhead and Tree Equipment, 17J Specification for Unbonded Flexible Pipe, 7K Drilling and Well Servicing Equipment and 16C Choke and Kill Equipment. Fire safety requirements of the hose assembly should be considered in each case. If temporary flexible hose assemblies are to be used as a conduit for live process, they shall be approved through the MOC process.

The hose material of construction shall be suitable for the medium flowing through it. Hoses shall additionally be suitable for the pressure/temperature rating identified by the TE Originator. Rubber hoses may be used. Rubber hoses, if used for hydrocarbon gas service, must not be permeable.

The guiding principles for the minimum requirements for the management and safe use of temporary, flexible hoses are that flexible hoses and associated fittings shall be:

- The correct specification/rating (temperature, pressure and duty, which must be stated on the hose)
- In good working condition (regularly inspected, tested and certified)
- Secured against accidental release due to failure or reactive forces (especially at connections and open ends)
- Protected against static electricity build-up through suitable earthing terminals
- Removed/isolated when no longer required
- Handled and stored securely in a nominated location when not in use
- Discarded when no longer fit for purpose
- Used for hydrocarbon fluids or on systems

Note: *A PTW is always required for carrying hydrocarbons. The PTW shall reflect all associated risks and pre-job checks.*

Temporary FHAs shall be tagged with temporary inspection tags, registered and tracked in the TE register with the following details:

- Hose number
- Date placed in service
- Service rating
- Next due test date

Temporary hoses for hydrocarbon duty shall be tagged with a unique number and tracked in a register with the following details:

- Hose number
- Date placed in service
- Service rating
- Next due test date

Temporary hoses shall be inspected at regular intervals by a competent person to ensure integrity. The checks shall be carried out as part of the one month asset check of TE scheduled through planned maintenance. Checks should include physical inspection. The due date for next inspection of the hose shall be indicated in the TE register.

The inspection contractor will include temporary FHAs in a 6-monthly inspection routine (external verification).

- Notes:**
1. *If the FHA is approaching 6 months of service, it requires registering and adding to the flexible hose register, as it is no longer deemed temporary.*
 2. *FHAs that have been deployed within equipment packages may also be excluded provided they have a management strategy developed by the original equipment manufacturer or relevant maintenance contractor that is auditable and consistent with the guidance within this Procedure.*

As with all TE, the use of temporary flexible hoses shall be restricted to the minimum reasonably practicable amount.

Hoses with clamped end connections shall not be used for hydrocarbon services.

Inspection and testing of flexible hoses for hydrocarbon duty shall be performed in accordance with Flexible Hose Assembly Management Strategy, CHRY-UKO-TAI-PROC-0777 [Ref 6].

Assembly, inspection, testing and maintenance of flexible hoses and associated fittings shall only be undertaken by competent persons.

Hoses and fittings rated to the maximum allowable operating pressure of the connected system shall be used, unless the hose is connected to a system that is already isolated and depressurised.

Appropriate safety devices, e.g. safety clips, whip checks and straps, shall be used to secure the hoses against accidental disconnection or movement.

A designated location must be identified where hoses can be stored to prevent damage.

Small-bore Tubing

Small-bore tubing assemblies for hydrocarbon service shall be designed and built to industry best practice (refer to Facilities Engineering Management Standard, CHRY-UKO-TAI-ST-0083 [Ref 7] Appendix 3N).

Rotating Equipment

The following standards shall be used when selecting items of rotating equipment for use in hydrocarbon service. Where this is not possible, or other standards are used, these must be approved by the discipline TA:

- Centrifugal pumps to API Standard 610 Centrifugal Pumps for Petroleum, Petrochemical and Natural Gas Industries
- Gas turbines to API Standard 616 Gas Turbines for the Petroleum, Chemical, and Gas Industry Services
- Centrifugal compressors to API Standard 617 Axial and Centrifugal Compressors and Expander-compressors
- Reciprocating Pumps to API Standard 674 Positive Displacement Pumps—Reciprocating
- Metering pumps (or controlled volume) to API Standard 675 Positive Displacement Pumps – Controlled Volume for Petroleum, Chemical, and Gas Industry Services
- Rotary positive displacement pumps to API Standard 676 Positive Displacement Pumps – Rotary

Pressure Relief

Vessels and pumps connecting to the process shall be fitted with a separate relief valve (not integral with the unit). The relief valve shall not be used for pressure regulation and shall be suitably rated for the asset.

Lifting Equipment

There is a requirement to ensure that lifting appliances and any associated equipment have been designed, manufactured and verified fit for purpose in accordance with recognised codes and standards applicable to the offshore industry. Lifting equipment shall meet SI 1998/No 2307, The Lifting Operations and Lifting Equipment Regulations 1998 requirements and retain sufficient certification for the duration of its use onboard the asset. Where certification expires during the usage period, re-certification shall be carried within the last 6 months.

Electrical Equipment

Electrical equipment shall be prepared by the supplier to satisfy the requirements of Control of Temporary Equipment (COTE) Sheets/Forms, CHRY-UKO-HSEQ-FORM-1718 [Ref 3]. Chrysaor's Third-party Inspector (TPI) shall complete this relevant forms/checklist as part of their inspection of the equipment. Where electrical equipment has to be installed in a hazardous area, it shall be ATEX certified for use in a hazardous area Equipment Group II, Category 2G, Apparatus Group IIB, Temperature Class T3 as a minimum in accordance BS EN 60079. Explosive atmospheres standards.

Portable Electrical Equipment

Non-personal handheld equipment that needs asset power (for use outside accommodation) should be shipped with current Portable Appliance Testing (PAT) certification valid for the duration of use. Refer to Electrical Codes of Practice Procedure, CHRY-UKO-TAI-PROC-0213 [Ref 2] for further guidance on portable appliances. Handheld equipment/tools not requiring hook-up to asset utilities, process or operating systems or used exclusively within accommodation areas and workshops are not considered TE and are excluded from this Procedure. Handheld gauges, measuring and monitoring equipment are not considered to be TE and excluded from the scope of this Procedure. This includes, but is not limited to:

- Cameras and laptops
- Electrical multi-meters
- Flow and vibration meters
- Intrinsically safe handheld radios
- Non-destructive testing equipment
- Chrysaor-owned equipment registered and maintained under Maximo/SAP

Risks associated with the use of these items must be managed through the Permit to Work Procedure, CHRY-UKO-PRD-PROC-0231 [Ref 8].

New Equipment

Brand new, never before used portable electrical equipment that comes from the manufacturer ready to use, i.e. cable and plug installed by manufacturer, does not require a detailed electrical inspection. Brand new equipment that has been worked on by the TE supplier, e.g. cable installed, or any other Ex certified electrical equipment, shall be given a detailed Ex inspection before mobilisation.

Mechanical Equipment

Where mechanical equipment is to be installed in a hazardous area, it shall be ATEX certified for use in a hazardous area Equipment Group II, Category 2G according to ISO 80079-36:2016 Explosive atmospheres — Part 36: Non-electrical equipment for explosive atmospheres — Basic method and requirements. This standard addresses the basic method and requirements for the design, construction, testing and marking of non-electrical equipment, including:

- Couplings
- Pumps
- Gearboxes
- Brakes
- Hydraulic and pneumatic motors

Any combination of devices to realise a machine, fan, engine and compressor, ISO 80079-36 considers potential ignition sources (ignition scenarios) related to the equipment under consideration under normal operation, foreseeable malfunction and rare malfunction, and specific measures that are applied to the equipment to avoid ignition of a surrounding explosive atmosphere.

Air compressors certified for use in a Zone 1 hazardous area shall be fitted with gas detection at the air inlet. The compressor shall automatically shut down on confirmed detection of gas.

Containers for Temporary Offshore Storage

Containers or skid frames provided for unmanned use shall have certification to either:

- DNV Standard for Certification No. 2.7-1
- BS EN 12079-1:2006 Offshore containers and associated lifting sets. Offshore containers. Design, manufacture and marking

Note: *There is no requirement for an SI 1998/No 2306, The Provision and Use of Work Equipment Regulations 1998 record to be completed for storage containers used for shipment of goods only.*

Shipping Containers

Containers used for transportation of materials offshore are not considered as TE and are excluded from the scope of this Procedure.

Modules for Manned Use

A60 cabins/modules typically used for offshore accommodation, workshops, laboratories, gymnasiums or any other manned use offshore shall be prepared by the supplier, fulfilling the requirements of DNV Standard for Certification No. 2.7-1 and DNV Certification Note 2.7-2. Chrysaor's TPI shall review the documents supplied by the contractor during the inspection of the equipment.

Modules containing equipment considered to be a Category A machinery space as defined in International Convention for the Safety of Life at Sea Chapter II-2 Regulation 3 present a significant fire risk.

The following shall have certification compliant with DNV Certification Note, 2.7-2, NORSOK Z-015 or BS EN 50381:

- Internal combustion machinery with a total power output of greater than 375kW
- Oil fired boiler or oil fuel unit used for the preparation of oil fuel for delivery to an oil-fired boiler
- Other fired equipment, e.g. inert gas generator, incinerator, gas-fired heater

Alternatively, any enclosed space to be manned for more than 2 hours (cumulative) in any 12-hour period must be provided with the following facilities:

- Mechanical ventilation and automatic damper protection capable of preventing smoke and fire ingress/egress
- At least one Zone 1 rated battery backed escape lighting luminaire fitted with a battery duration sufficient to allow egress to an escape route
- Means of communication with the Control Room (telephone or radio)
- Fire protection rated to A60 (as described in International Convention for the Safety of Life at Sea Chapter II-2 Regulation 9) where the unit is to be sited in a hazardous area

Fire and Gas Detection

The equipment must be supplied with Fire and Gas (F&G) detection (where such hazards are introduced by the equipment) that can provide remote indication of fire/gas to the Control Room, unless suitable provision is available on the asset at the intended location of use. If no automatic detection of fire or gas is available, it may be possible to use a fire watch, but an Operational Risk Assessment (ORA) shall be put in place to manage the risk of not complying with the F&G detection Performance Standards. The requirements for manned use must also be considered in the risk assessment.

Active Fire Protection

If the equipment supplied is to be used for accommodation and poses a significant fire risk, it must be provided with its own firefighting capability; alternatively suitable provision is available on the asset at the intended location of use.

Where existing asset fire protection systems are to be used, the potential for any additional hazard introduced to exceed the capabilities of those systems must be assessed in an ORA before use. At least one portable extinguisher shall be provided in an easily accessible location where equipment contains electrical panels, testing equipment or is normally manned (not accommodation modules).

Escape Provision

Equipment intended for manned use shall have personnel access doors that open outwards and are self-closing. Modules that are manned and either have an internal area exceeding 20m² or the distance to the external exit door exceeds 5m shall have a separate emergency exit. Any separate emergency exit shall be located in an easily accessible position and as widely spaced from the main exit as possible. Escape lighting requirements are identified within the specification for manned use.

Temporary Equipment Containing Refrigerated Gas

Equipment containing refrigerant gas shall be identified on shipping manifest and once offshore, managed in accordance with the F-Gas Management Procedure [Ref 9].

Diesel Engines

The use of temporary packages driven by or containing diesel engines has the potential to introduce significant risk that requires mitigation in advance of use. Mitigating actions to limit risk depend on the hazardous classification of the location in which the engine is to be used.

- Diesel engines in non-hazardous areas:

Mitigating action for the safe use of diesel engines in non-hazardous areas include:

- Emergency shutdown system includes overspeed
- The exhaust system is free from leaks and fitted with a spark arrestor
- The cooling fan is of non-metallic construction, the drive belts are anti-static type, fans and belts are fully guarded and secure
- Fuel system has skid mounted isolation valve, fuel lines are braided or metal, engine is free from fuel leaks

- Diesel engines in hazardous areas:

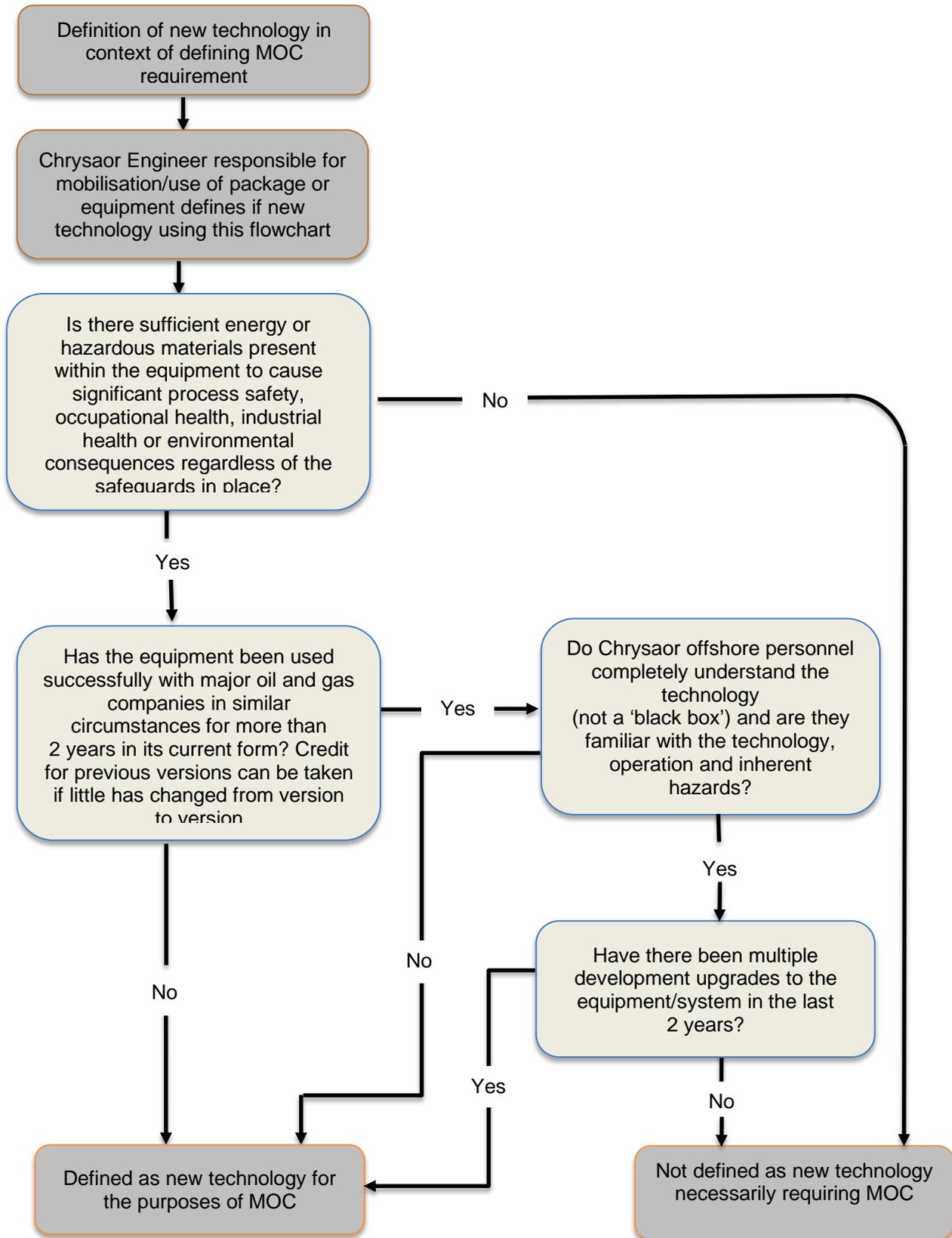
Diesel engines supplied for use in hazardous areas shall be compliant with the requirements of BS EN 1834-1:2000 Reciprocating internal combustion engines. Safety requirements for design and construction of engines for use in potentially explosive atmospheres. Group II engines for use in flammable gas and vapour atmospheres

Assessment for compliance with BS EN 1834-1 includes using:

- Air intake and exhaust system ducting, location in hazardous or non-hazardous location, construction and use of flame/spark arrestors and or proprietary safeguarding system, e.g. pyroban 3GP
- Cold start devices
- Air pre-heating devices
- Use and location of valves and venting devices
- Inlet air boosting devices

- Reverse running protection
- Fans, fan shrouds
- Engine starters
- Alarms and shutdowns/connection to installation fixed shutdown system

APPENDIX 3 NEW TECHNOLOGY: TEMPORARY EQUIPMENT TRIGGERS TO MANAGEMENT OF CHANGE



APPENDIX 4 TEMPORARY EQUIPMENT TAGS: ADDITIONAL GUIDANCE

Stage, Who and When

Colour	Use	Who Signs?	When?	When is the Tag Removed?
Blue	Pre-shipment inspection	Third-party Inspector	On completion of inspection onshore and ready for delivery	Once Offshore Materials Controller or delegate receives TE and carries out the checks as annotated below (refer to Red)
Red	Quarantined – do not use	Offshore Materials Controller (or delegate)	Once Offshore Materials Controller (or delegate) receives Temporary Equipment (TE)	Once Offshore Material Controller (or delegate) verifies TE certification/ documentation is correct and inspection for transit damage has been carried out
Yellow	Registered	Inspecting Technician	Once equipment has been inspected by technician(s) and approved for safe use offshore	When TE is no longer required and is ready for backloading
Green	Backload	Offshore Materials Controller (or delegate)	Once use of TE is completed and equipment is to be returned onshore	N/A

