

Permit To Work (PTW)

Scope: Global	Code: 20-00029PR
Owner: D. S&E E&P	Revision: 3.0

Purpose

The purpose of this document is to establish a standardized Permit to Work (PTW) in E&P production assets.

The main objectives are:

- Establish the mandatory conditions to control any work executed by an Organization Unit in the Area of responsibility of another Organization Unit, by means of a written or electronic document known as "Permit to Work".
- Establish the process and responsibilities for operating the PTW.

Scope of application

This procedure is applicable to all Repsol E&P operated and co-operated production assets where Repsol is leading the Joint Venture.

In the case of non-operated and other co-operated assets, in accordance with the shareholders' agreements, all reasonable attempts to influence the partners into implementing this document will be made.

Framework regulations

- Managing safety in the workplace (00-00568NO)
- Basic Safety Rules (00-00533NO)

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1. Definitions and Acronyms

1.1. Definitions

- **Affected Area:** Any area of the asset which is not under the responsibility of the PTW Authorizer and could be affected by the works associated to the PTW.
- **Area:** A physical zone delimited by physical boundaries where the work is going to be executed and an Authorizer is assigned. Note: The asset could be formed by one or more Areas that cover all the surface of the asset. The different Areas must be established and drawn in a plan known as the PTW Areas Map.
- **Authorized Worker for Electrical Work:** Any worker authorized by the company to carry out certain works with electrical risks. This authorization shall be provided on the basis of the worker's competence to perform the works safely.
- **Authorizer:** The person in charge of an Area, who is sufficiently capable and competent to ensure that the necessary safety measures have been taken and can approve the execution of certain work in the Area or equipment.
- **Classified Areas:** Areas are where flammable liquids, gases or vapors or combustible dust may exist in sufficient quantities to produce an explosion or fire.
- **Confined Space:** A space which, by design, has limited openings for entry and exit; unfavorable natural ventilation which could contain or has contained any type of hazardous products in its interior (asphyxiating, flammable, or toxic), or which could produce hazardous conditions due to work being carried out inside it.
- **Contingent Employee:** An individual performing temporarily full time labour to the benefit of the company but not employed directly by Repsol. This individual may work alongside and/or take direction from a Repsol E&P employee.
- **Diving:** All under water works carried out by a person immersed at a depth greater than 1 meter.
- **Gas/Atmosphere measurement:** Checking of the work site with a suitable gas detector, prior to certain types of work activities and during the work activity, to provide a warning of the presence of flammable and/or toxic gas, or an oxygen deficient/enriched atmosphere.
- **Isolation:** Separation of the plant, process and equipment from every source of energy (electrical, mechanical, hydraulic, pneumatic, gravitational, chemical, thermal, etc.).
- **Job Safety Analysis (JSA):** A technique that focuses on job tasks as a way to identify hazards before they occur. It focuses on the interactions between the worker, the task, the tools and the work environment. It is also known as a job safety assessment, job hazard analysis or task risk control, etc.
- **Organization Unit (OU):** Part of the organizational structure with responsibility in a certain area of the asset.
- **Permit Issuer (or Issuer):** A person belonging to the Organizational Unit of the Authorizer, who is sufficiently capable and competent to verify the implementation of the safety measures in the field according to the PTW in order to issue the PTW.
- **Permit Holder:** A person belonging to a Repsol E&P Organizational Unit or a contracted company who has been appointed by the Permit Requester as the "Person-in-Charge of the Execution" of the work. This person is responsible for the work to be performed, under the conditions of the PTW and additional procedures or certificates.
- **Permit Requester (or Requester):** A sufficiently capable and competent person belonging to or contracted by an Organizational Unit who requests authorization to execute a job.
- **Qualified Worker for Electrical Works:** An authorized worker with specialized knowledge on the risks associated with electrical equipment or installations, or any work in proximity of an electrical line. In addition to being an Authorized Worker, the Qualified Worker holds an official license to carry out electrical works,

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provided by the relevant local authority regarding the worker. If there is no official license available in the country for electrical works, the BU has to determine the experience or studies necessary to designate this type of job position.

- **Simultaneous Operations (SIMOPS):** Simultaneous Operations are considered when there are different operations in the same Area, authorized by different authorizers, typically when Drilling, Workover, Construction or other operations take place in the Production Area. This situation is likely to increase the level of risk due to the interferences between them.

In these cases a SIMOPS form shall be created to coordinate all the works managed or authorized by every authorizer.

- **Task Observed Person:** A person who was observed on an specific task and deemed fully competent to carry out the task safely according to the applicable procedures. Task Observation is a system based on competency, evaluation and monitoring which has to be done by Repsol and according to the BU Task Observation program.

Task Observation is valid for a limited period of time, and when expired has to be renewed accordingly.

- **Tool Box Talk:** A talk by a Permit Requester, Permit Issuer or Permit Holder with the Work Performers about the task risks and conditions of the PTW at the workplace.
- **Normally Unmanned Installation:** An installation where the owner of the area is not present daily.
- **Verifier:** A sufficiently capable and competent person who review the PTW information including risk assessment and attachments and verify it.
- **Work Performer:** A person who works under the terms of the PTW , i.e., a performing crew.

1.2. Acronyms

- **ALARP:** As Low As Reasonably Practicable
- **BU:** Business Unit
- **E&P:** Exploration & Production
- **HSE:** Health, Safety and Environment
- **ICC:** Isolation Confirmation Certificate
- **JSA:** Job Safety Analysis
- **LEL:** Lower Explosion Limit
- **LOTO:** Lock Out / Tag Out
- **OU:** Organizational Unit
- **PTW:** Permit To Work
- **P&ID:** Piping and Instrumentation Diagram
- **S&E:** Safety and Environment
- **SEMS:** Safety and Environment Management System
- **SIMOPS:** Simultaneous Operations
- **WO:** Work Order (OT: Orden de Trabajo)

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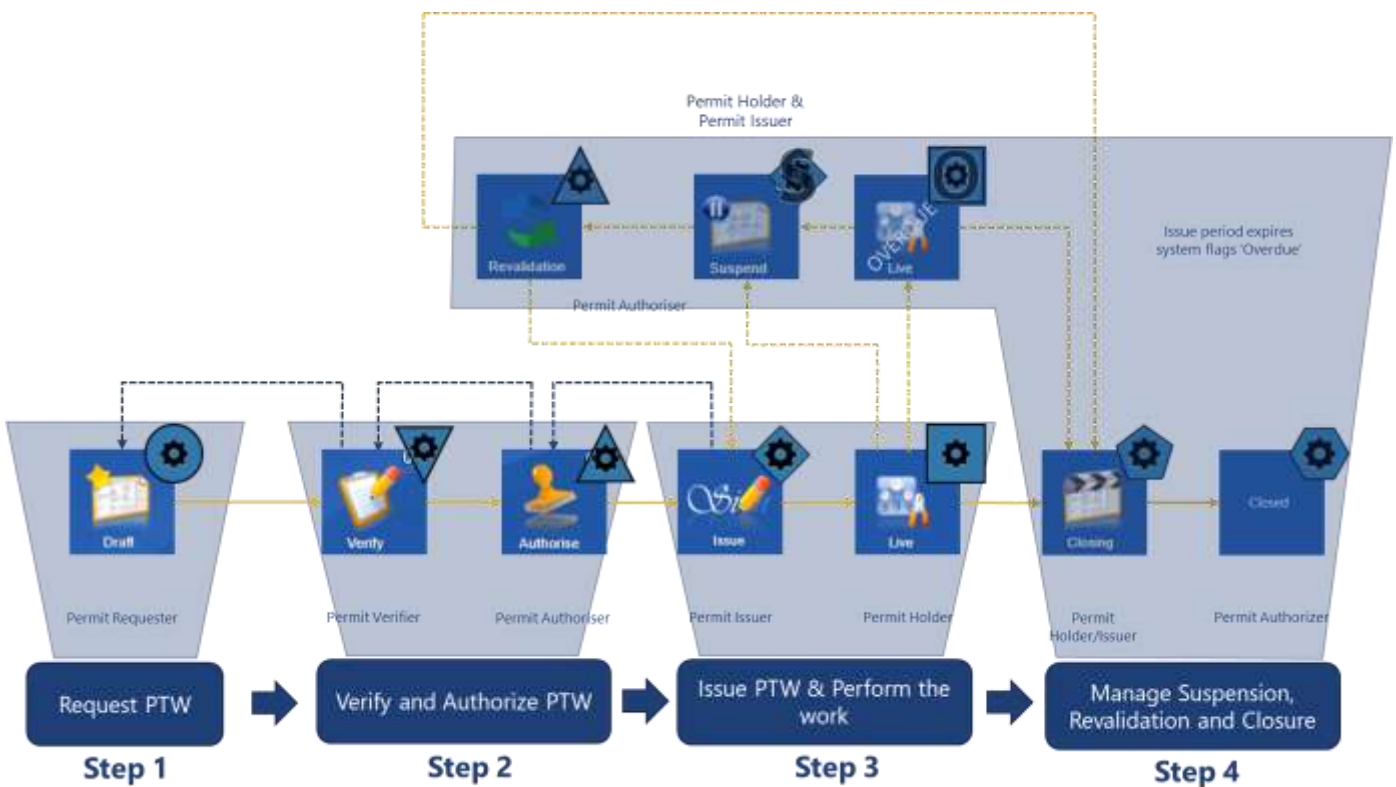
2. Permit to Work process

The PTW process includes the following steps:

- Step 1: Request PTW
- Step 2: Verify and Authorize PTW
- Step 3: Issue PTW and Perform the Work
- Step 4: Manage Suspension, Revalidation and Closure

Those steps are explained in more detail in the following sections.

An electronic tool has been selected in Repsol E&P to manage PTWs and Isolation Confirmation Certificates (ICCs) in a digital manner. The process of managing PTWs in the electronic tool is aligned with the above mentioned steps. The relation between these steps and the PTW process in the electronic tool is shown in the following figure.



For Normally Unmanned Installations, some specific conditions apply which are described in section 4.

The BU S&E provides support to the people involved in the PTW process as required.

Specific local legal requirements shall be applied when implementing this procedure. In case of difference between the requirements of this procedure and local requirements, the more stringent requirement shall be applied.

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2.1. Step 1 – Request PTW

A PTW is required when someone (Requester) needs to execute work in an area under the responsibility of another Organizational Unit (Authorizer).

Works executed in an Area by the personnel belonging to the same Area do not require PTW. Such works are controlled by work/operation procedures.

Only in the following cases, an employee belonging to the organization of an Authorizer will need a PTW even if the work is performed in his/her area:

- Confined Space Entry
- Hot Work in classified area

Under no circumstances the same person can authorize a PTW for himself/herself and always it has to be authorized by a competent Authorizer in the area.

Both the Area and the work have their own risks. The work introduces new risks in the Area where it is to be performed. Both organizations responsible for the Area and the work must share their knowledge about these risks in order to define adequate preventive and mitigation measures to execute the work safely.

It is recommended that the Requester and Authorizer plus the Permit Holder, unless the risk is minor, hold a specific meeting in order to agree on the work program, interaction with other works and the required permits to work.

In general:




- The Requester and Permit Holder inform the Authorizer about the time, place and method of the work. They also provide information about the risks introduced by the work and the tools which are to be used to execute the work.
- The Authorizer informs the Requester and Permit Holder about the conditions of the Area and work environment, i.e. work zone, surroundings, installations and equipment, as well as the potential risks foreseen as a consequence of changes in those conditions during the work time.

Based on these risks and nature of the work, one of the following permit types is used:

- Cold Work
- Hot Work Spark Potential
- High Energy Hot Work
- Confined Space Entry
- Breaking Containment
- Excavation
- Electrical
- Radiation







For works that need isolation, an Isolation Confirmation Certificate (ICC) is prepared.

In the electronic tool specific icons are used for PTWs and ICC as shown below:

PTW type and ICC	ICON
Cold Work	
Hot Work Spark Potential	
Breaking Containment	

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Excavation	
Electrical	
Radiation	
High Energy Hot Work	
Confined Space Entry	
Isolation Confirmation Certificate (ICC)	

For activities like visits or certain inspections that neither interact with the installations nor use any equipment (camera, motored vehicle, etc.) that can introduce a new hazard to the installation, access control and entrance protocols/procedures are used and PTW is not necessary.

2.1.1. Carry out Risk Assessment

All PTWs include an identification of hazards and definition of control measures. For high risk or complex work, a specific risk assessment (HAZID or similar) must be carried out by the risk assessment team members and approved by Verifier and Authorizer. A specific Risk Assessment is always required at least in the following cases:

- High Energy Hot Works
- Confined Spaces Entry

The Requester, Verifier or Authorizer might request support from the BU S&E to conduct the risk assessment.

2.2. Step 2 –Verify and Authorize PTW

Once the request for the PTW has been signed by the Requester, Verifier reviews and verifies all the information provided in the PTW request and signs it. Verifier and Requester shall not be the same person.

Once the PTW request has been verified by the Verifier, Authorizer reviews the verified PTW thoroughly and authorizes it. Authorizer defines the date and period of the work execution before signing the PTW.

The Authorizer and the Permit Holder shall not be the same person or belong to the same OU (except in case of Confined Space entry and Hot Work in classified area, Permit Holder and Authorizer can belong to the same OU). However, Permit Holder and Authorizer can never be the same person.

The Authorizer is responsible for communicating and controlling the different PTWs that are active in the Area, and also other activities that could be affected by these works.

If an affected Area is defined in a PTW, the person in charge of the affected Area must sign the PTW acknowledging that he/she is aware of the work and its impact on the Area under his/her responsibility.

When there are Production, Drilling or Workover operations in progress in the same Area, a “Simultaneous Operations” form shall be used. The Authorizer shall ensure that the Requester and Permit Holder are aware of these possible interactions.

The Authorizer may delegate a competent person belonging to his/her Organization to authorize all or certain types of PTWs. This delegation shall be formal and a list of the Authorizer delegates shall be available.

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2.3. Step 3 – Issue PTW and perform the Work

Once the PTW has been authorized, the Issuer shall carry out an inspection of the work zone to make sure that all the Area, equipment items, tools or installations involved comply with the safety measures required for the work. The preventive measures of the PTW shall also be verified by the Issuer. Issuer can be the same Authorizer or a competent person belonging to his/her Organization. Commonly, Operators act as Issuer.

Once the PTW is signed by Issuer, Permit Holder signs the PTW accepting to execute the work according to the requirements and conditions established in the PTW. The work can be started only after required signatures are done by Permit Issuer and Permit Holder.

All Work Performers and other personnel present in the Area shall be duly notified about the Live PTWs in the Area.

The Permit Holder shall hold a tool box talk on the work site for all Work Performers. At this talk, the Permit Holder points out the hazards and safety measures associated with the work to be carried out.

Each Work Performer must sign the tool box talk sheet. Their signatures confirm that the workers involved in the work fully understand the scope of the work to be carried out, associated risks, and precautions to be taken.

The Permit Holder shall ensure compliance with the established safety measures during the entire period of work execution. Once the work is finished the Area has to be left clean and safe and the equipment either operational or secured.

If any of the Worker Performers is changed, the Permit Holder shall inform new Work Performer about the identified hazards and implemented safety measures for the correct execution of the work. The new Worker Performer has to sign the tool box talk sheet.

The Authorizer shall maintain safe operations while the work covered by the PTW is being performed. It is recommended that both Authorizer and Requester conduct regular inspections in order to verify compliance with the specifications stipulated for the work.

The Authorizer is responsible to ensure that Gas/Atmosphere measurements are performed and recorded as established in the PTW.

2.4. Step 4 – Manage Suspension, Revalidation and Closure

The maximum validity time for a PTW is one shift. After this period, the PTW is overdue. If the work is finished the PTW must be closed. In case the work continues the PTW must be suspended for revalidation.

The maximum lifetime of a PTW is 7 days. After this period, the PTW is expired and it has to be closed. If the work is not finished yet, a new PTW shall be prepared.

2.4.1. Suspension

A PTW can generally be suspended on the following grounds:

- When a PTW is overdue and the work is not finished. The PTW is suspended for revalidation.
- If any uncontrolled risk for the workers is detected
- In the case of unplanned interactions with other works
- While waiting for materials or spare parts
- Activation of Emergency Plans

To suspend a PTW, it is mandatory that the safety conditions in the area have been assured and that the Permit Holder and either Issuer or Authorizer sign the PTW.

In case of suspended works, no safe isolation shall be removed until the PTW is closed by the Authorizer. Bypassed alarms and inhibited safety systems should be reinstated if technically possible.

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Once a PTW has been suspended, the PTW shall be revalidated in order to continue with the work.

In the event of activation of emergency plans in the area where the work is being done, all works in the area shall be suspended according to the Emergency Plan, and the suspension signatures shall be affixed in an adequate time.

2.4.2. Revalidation

If the site conditions or the procedure established to perform the work in the original PTW have changed, the PTW cannot be revalidated and a new PTW shall be prepared.

If either Authorizer or Permit Holder change, the PTW shall be revalidated and the revalidation shall be shown in the PTW. The change could happen due to crew change, shift change or any other reason.

For revalidation, the Authorizer, the Issuer and the Permit Holder shall sign the PTW.

2.4.3. Closure

PTWs shall be closed if the following circumstances occur, and in order to restart the work, a new PTW is required:

- The PTW is expired (7 days lifetime is over).
- Changes to the work conditions, safety measures and environment conditions established in the PTW.

PTWs shall be closed once the work has been fully completed or when the work is dismissed (the work will not be restarted again).

In order to close a PTW, the Permit Holder and Authorizer shall sign the PTW. Issuer also can sign the PTW.

The following steps shall be carried out either when the work has been completed or dismissed:

- Ensure all waste is properly handled and the work area is clean with proper housekeeping.
- Remove all additional protective devices and isolation means (alarm by-passes, safety systems inhibits, etc.) used for the work.
- Re-establish normal operating conditions in the area and/or equipment involved.

Before Closing the PTW, the Authorizer or Issuer shall verify that the previous actions have been implemented. Only the Authorizer is allowed to close a PTW.

Once the Permit Holder and the Authorizer have confirmed compliance with all these conditions, they shall sign the PTW and close it.

2.5. Record

According to the local regulations of each asset, either a paper copy or a digital file of the Live PTW and Isolation Confirmation Certificate, if applicable, must be available on site during the execution of work.

The original paper copy or the digital file of all the PTWs shall be kept at least one year after closure of each PTW.

In case where a near-miss or incident has occurred, the original paper copy or the digital file of the PTW must be kept as recommended by the BU Legal Department. These PTWs shall be uploaded in Repsol incident management tool as attachments of the Incident Investigation Process by the Incident Investigation Coordinator.

3. Types of PTWs and Isolation Confirmation Certificate

Depending on the hazards and nature of the work, the adequate PTW is used:

- Cold Work
- Hot Work Spark Potential
- High Energy Hot Work
- Confined Space Entry

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- Breaking Containment
- Excavation
- Electrical
- Radiation

For works that need isolation, an Isolation Confirmation Certificate is prepared.

Minimum information to be captured in a permit to work is provided in Appendix II. Minimum information to be captured in an Isolation Confirmation Certificate is provided in Appendix III. However BUs are expected to include local requirements if necessary.

3.1. Cold Work Permit

The Cold Work Permit is used for work in which neither naked/open flames, nor equipment that produces sparks or generates heat is used in a classified area (see the flowchart in section 3.2. on Hot Work PTW).

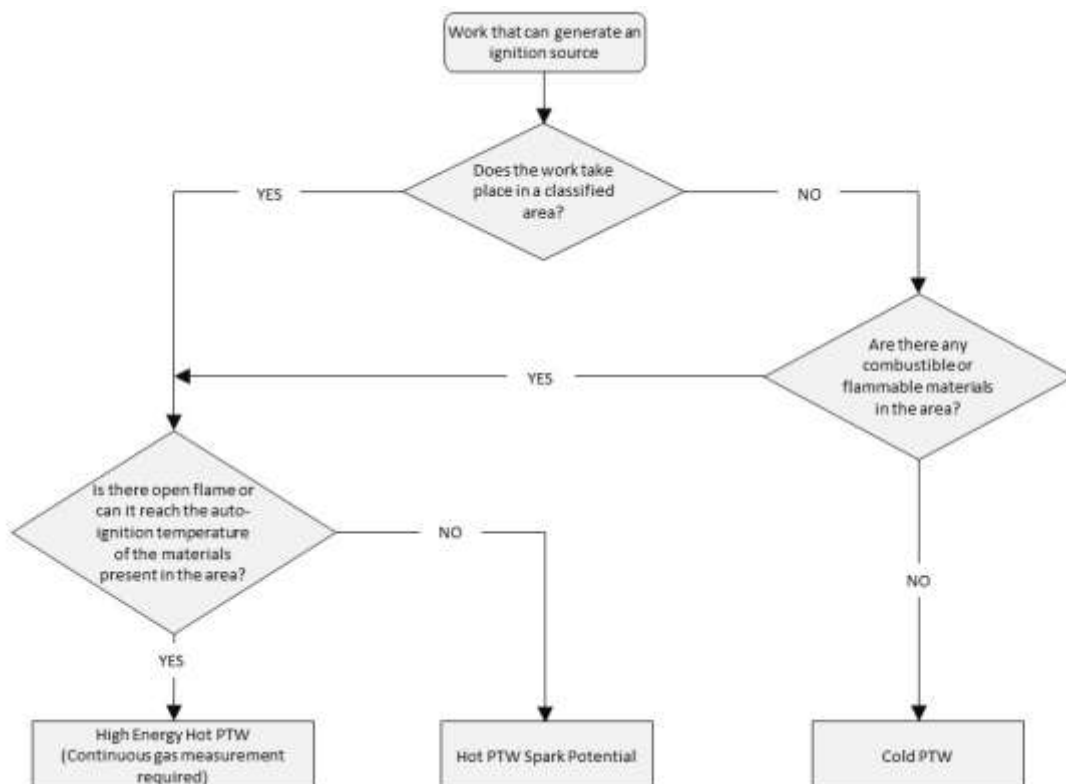
A Cold Work Permit can be used alone or in conjunction with an ICC.

3.2. Hot Work Permit (Spark Potential and High Energy)

The Hot Work Permit is used for works in which an ignition source for flammable or combustible materials present in the area can be produced, or when the tools and equipment used may produce sparks or generate heat in a classified area.

Depending on the characteristics of the ignition source, those works, that involve the use of naked/open flames or sources of energy that could reach the auto-ignition temperature of the materials present in the area, are classified as 'High Energy Hot Work'.

The following flowchart can be used as a guide for the selection of the PTW when potential ignition sources are involved:



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In general, and as example, if any of the following is used in a classified area (or an area with the possible presence of flammable or combustible materials) the work shall be considered as a 'High Energy Hot Work':

- Welding machines
- Radial cutters
- Heat treatments
- Flame cutting
- Torches
- Pyrophoric handling
- Grinding
- All open fires.

In Classified Areas, any activity in which the equipment used is capable of generating sparks or heat while being operated shall be considered Hot Work Spark Potential. For example:

- Equipment with internal combustion engines, including automobiles
- Electrical equipment that is not protected in accordance with the classification of the area
- Tools operated by compressed air or by hand, that are used to chisel, cut, break, strike, caulk or drill metal, concrete or masonry
- Sand blasting and grout blasting
- Flash photography
- Opening of electrical equipment under power
- Hand-operated tools not made of non-sparking material
- Any source of static electricity

In the event of work in presence of naked/open flames (High Energy Hot Works), continuous Gas/Atmosphere measurement is required.

It is recommended that continuous Gas/Atmosphere measurement is used in Hot Work Spark Potential as well.

When the value of the gas concentration measured by the Gas/Atmosphere measurement is higher than 10% of the Lower Explosion Limit (LEL), the work shall not be authorized, or must be stopped.

A Hot Work Permit can be used alone or in conjunction with an ICC.

3.3. Confined Space Entry Permit

The Confined Space Entry Permit is used to enter to a confined space with potential presence of dangerous vapors or asphyxiating gases. The Permit must specify the measures to be taken in the enclosed atmosphere against the hazards, considering the possibility of fumes escaping from residues, oxygen depletion of the atmosphere as a result of oxidation, or the entry of airborne contaminants from adjacent sources.

Through this Permit only the entry of people into any closed or confined space including trenches, cellars, pits, tanks, separators, columns, condensers, exchangers, furnaces, boilers, cisterns, conduits, drainage pipes, channels, collection boxes and pockets is authorized and controlled. For any work in Confined Space, this Permit **shall be accompanied** with the specific PTW of that work. Usually the ICC will be needed in order to enter the Confined Space (for tanks, vessels, etc.).

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3.4. Breaking Containment Permit

The Breaking Containment Permit is used for opening any system for any reason, including inspection, repairs or modifications, where there is a risk from egress of toxic, flammable or otherwise hazardous materials (including the consideration of pressure, volume and temperature).

A Breaking Containment Permit highlights the increased risks of tasks that breach the designed containment envelope on any system, or material. Highlighting these tasks helps avoid clashes with other work on the facility that is taking place simultaneously.

Breaking Containment Permit is required for first actual opening/separation/removal of equipment of a system that contains or has contained any toxic, flammable or otherwise hazardous material.

Examples of where Breaking Containment Permit is required (but not limited to):

- ✓ Unbolting flanges, manways or removing bolted/screwed fittings eg;
 - Pipes
 - Vessels
 - Exchangers
 - Valves
 - Turbines
 - Compressors
 - Pumps
- ✓ Opening enclosures such as pig launchers or receivers and filter housings
- ✓ Opening of vents or drains to atmosphere
- ✓ Removing orifice plates
- ✓ Opening of flanges for the purpose of blind installations or removal
- ✓ Taking adhoc samples that are not covered by a procedure (including consideration of pressure, volume and temperature)

Demonstrating of zero energy present immediately before breaking containment is mandatory.

3.5. Excavation Permit

This Permit, also known as “Ground Disturbance”, is used to control digging operations around or inside any existing installation in order to ensure that no underground services or pipework will be affected, either by damage or downfall and that the work can be carried out safely.

An Excavation Permit shall be issued whenever the work to be carried out must go deeper than half a meter. Any excavation work deeper than 1.2 meters (4 feet) shall, in addition, require a Confined Space Entry Permit if a person will enter the excavation.

It is necessary to ensure that all the underground installations are identified and wherever possible or if required, the permit shall be accompanied by an ultrasonic or magnetic survey of the area to be excavated in order to identify underground installations that have not been identified using existing drawings or other means.

The accuracy of the information available on the Excavation Permit shall be used to decide how the excavation can be carried out (for example, hand digging, hydro vac excavation or machine digging), or whether further assessment is required before the excavation can take place.

3.6. Electrical Permit

Electrical Permit is used for working with live equipment, near high voltage/low voltage electrical equipment or installations and whenever electric isolation work is required in order to ensure that the equipment/installation to be

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worked on is electrically safe and the electrical power is isolated to the extent necessary for the safe performance of the authorized work.

When isolation is needed, this permit and the corresponding Isolation Confirmation Certificate ensure that the power supply has been cut-off, to enable the task to be safely performed.

Only authorized personnel are permitted to carry out any electrical service work, including the isolation, repair, adjusting, testing or servicing of electrical equipment.

3.7. Radiation Permit

This Permit is used to reduce the risk of exposure to radioactive sources arising from hazards such as:

- Unsafe handling of a radioactive substance or equipment containing a radioactive substance
- Release or leakage of a radioactive substance
- Exposure of personnel to a radioactive substance
- Radioactive waste manipulation

Locking and unlocking of ionizing radiation sources requires control measures, including site inspection, source exposure controls, access or containment barriers and radiation monitoring to minimize the risk of exposure.

Only certified personnel are authorized to manage, handle or isolate ionizing radiation sources. Specific local regulations must be followed.

3.8. Isolation Confirmation Certificate (ICC)

Isolation Confirmation Certificate (ICC) is used when isolation or blocking (mechanical or electrical) of a machine, equipment or an installation is required to authorize a specific work.

The Assets shall have an Isolation Procedure (also known as LOTO: Lock Out / Tag Out system) which considers the isolation of:

- Electrical energy sources
- Process fluid and pressures
- Control systems and alarms
- Radioactive sources

ICC is attached to the PTWs that use the established isolation or blocking ensuring the correct implementation of the applicable Isolation Procedure.

When an ICC is attached to a PTW, the PTW can go 'Live' only when the ICC is 'in place'. When there are different PTWs using the same isolation, a proper isolation/control system shall be used, to guarantee that all the works are finished before isolation is removed.

Isolation is executed according to the following minimum conditions:

- It shall be made using secure elements that prevent inadvertent or wrong actuations (disconnect piping or electrical connections, blind flanges, seals, chain and lock, LOTO, etc.).
- Each element of isolation shall be identified. It is required to add a P&ID or other illustration with isolation points highlighted.
- The installation and removal of the isolation shall be done only under the control of the Authorizer.

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- The installation and removal of the isolation shall be verified on location by the Authorizer or another person from his / her organization who has sufficient training.

3.9. Additional Verifications

In case of lifting activities or diving operations, the following documents are required to accompany the PTW:

3.9.1. Lift Plan

Lifting and Hoisting works are regulated by the *DG Lifting and Hoisting Operations Practice*, (code 026 PR 03467 MN UP).

A Lift Plan according to the provided format in the DG Lifting and Hoisting Operations Practice shall be accompanied with the PTW.

3.9.2. Diving Plan

Without exception, all diving works shall be performed by a professional diving contractor, no diving is to be carried out by Repsol personnel.

Diving methods include:

- Surface-supplied air diving.
- SCUBA diving (Self Contained Underwater Breathing Apparatus). SCUBA diving is considered an unsafe working practice and is not recommended except for scientific or surveying works.
- Mixed gas diving.

The Asset Manager shall appoint a Repsol Diving Representative. This representative must be onsite during diving activities and act as the Permit Requester. In addition, the Contractor Diving Representative must be onsite during all diving operations and act as the Permit Holder.

For all operations involving diving or surface swimming a specific document called Diving Plan has to be accompanied with the PTW. Diving Plan shall be provided by the contractor. This plan shall include atmospheric condition, seawater condition, underwater condition, hazards and associated control measures and specific contingency plans for the diving operations. Special attention will be paid to obtain proper weather information and data on other environmental conditions. Work activities should be scheduled to take into account prevailing weather conditions.

4. Use of PTW in Normally Unmanned Installation

For a Normally Unmanned Installation the PTW process is the same as explained above and it is preferred that PTW Issuer issues and closes PTWs after site visit. However, since it is not always possible, PTW can be managed as below:

1- Permit Holder is a Repsol employee/Contingent employee:

- a) belonging to the Organization Unit of the Area: PTW is NOT required, except for Confined Space Entry and Hot Work in classified area.
- b) not belonging to the Organization Unit of the Area: PTW is required.

If the Permit Holder is Task Observed on: "the work to be carried out", "installation/lease entry" and "PTW Process", the Issuer might decide to issue the PTW remotely or on location.

2- Permit Holder is NOT a Repsol employee/Contingent employee: PTW is required except for works in Appendix VII: "List of works that a contractor can carry out without PTW in Normally Unmanned Installations":

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- a) carrying out a work that is included in Appendix VI: "List of works that the PTW can be issued remotely for contractors in Normally Unmanned Installations". The Permit Holder has to be Task Observed on: "the work to be carried out", and if the Permit Holder is also Task Observed on: "installation/lease entry" and "PTW Process", the Issuer might decide to issue the PTW remotely or on location.
- b) carrying out a work that is not included in the list of Appendix VI and list of Appendix VII. Remote issuing is NOT allowed and on location issuing is required.

Appendix VI "List of works that the PTW can be issued remotely for contractors in Normally Unmanned Installations": This list includes only routine works with risk level less than 35 based on "Safety and environmental risk management (00-00353NO)". These works have to be carried out according to the specific procedures that are already prepared and approved by Repsol. The workers have to be task observed by Repsol on these works based on the procedures.

Appendix VII: "List of works that a contractor can carry out without PTW in Normally Unmanned Installations": This list includes only routine works that do not need access to classified areas, with risk level less than 35 based on "Safety and environmental risk management (00-00353NO)". These works have to be carried out according to the specific procedures that are already prepared and approved by Repsol. These specific procedures have to include required communications to area owner before, during and at the completion of work. The workers have to be task observed by Repsol on these works based on the procedures.

The process to issue the PTW remotely requires:

- Definition of communication channels including phone, radio, email, etc. between Authorizer, Permit Holder, Issuer, Requester and Affected Area Responsible when applicable.
- Auditable evidences for verification of safety measures implementation by Issuer.
- Once the implementation of safety measures has been verified, the Issuer issues the PTW (this issuing will have auditable evidences of PTW issuing: e.g SMS text, email, electronic signature)
- Auditable evidences of PTW closure signature (e.g. SMS text, email, electronic signature)

Each Asset shall prepare a formal written process for remote issuing aligned with the abovementioned criteria.

5. Use of PTW in simultaneous operations (SIMOPS)

In case of SIMOPS, a SIMOPS form shall be filled out and signed by all Authorizers on daily basis. This form includes and describes the works to be carried out by different operations (either by PTW or without PTW) in the Area and ensures the awareness and coordination of all the Authorizers. The Recommended SIMOPS form is attached in Appendix IV.

The site-specific PTW process shall be agreed between the BUs and Contractors. These agreements shall be documented in a Bridging Document (*DG E&P HSE Bridging Document Practice (code 031-PR-03464MN.UP)*).

For mode 2 contractor (e.g. Drilling) it is recommended to choose the PTW procedure of the contractor except when important aspects are not considered or if it is clearly less demanding than that of Repsol.

6. Use of PTW in Major Work areas

When major maintenance, assembly or construction tasks are carried out in an installation which have been separated from normal operations using a screen or other similar means with access control, the person in charge of the installation may authorize the partial suspension of some requirements of this procedure by establishing general documented procedures to be applied in the mentioned area.

All areas which cannot be separated in the manner described above (because of their location or the risks present in them) are subject to this PTW procedure.

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7. Personnel qualified to authorize PTWs

According to the definition of the Permit Authorizer, each BU shall prepare, and keep an updated list of qualified Repsol personnel who can authorize PTWs. Interested parties must be duly notified of the appointed personnel.

An Asset may be divided in multiple Areas (e.g. production, maintenance, power generation, laboratories, safety, etc.) with defined Authorizers. These Areas shall be established and drawn up in a plan known as the PTW Areas Map.

Within one Area, only one person/position is allowed to authorize the PTWs at any given time. The Authorizer shall have a full overview of all PTWs in his/her Area of responsibility.

For specific large works, if support for PTW authorizing is needed due to the amount of work in the area, another Authorizer could be formally assigned. Proper measures shall be established to ensure adequate communication and coordination of all works within the area.

8. Monitoring and auditing

The effectiveness and compliance of the PTWs and ICCs used by Repsol E&P personnel and by contractors shall be monitored through a regular monitoring by Repsol E&P employees who participate in the PTW process. Appendix V includes a reference checklist for use in PTW and ICC monitoring checks.

It is recommended that this regular monitoring is done as frequent as possible to ensure a continuous evaluation of the PTW and ICC quality.

Field/Site S&E Representative has the responsibility to monitor the open and closed PTWs and ICCs on a regular basis. Due to the particular situation of some BUs, other operational staff (recommended only PTW and ICC Authorizers) is also allowed to conduct the regular monitoring, and in no circumstances an individual is allowed to audit a PTW or ICC authorized or issued by him/her. The monitored PTWs and ICCs in a period of time shall be a representative sample of the total PTWs and ICCs generated in that period.

The outcome of the PTWs and ICCs monitoring shall be analyzed to identify and improve gaps in the application of this procedure.

PTW procedure implementation and its associated records shall be audited in accordance with "Internal S&E audits (20-00181PR)" procedure.

All deviations identified during monitoring checks and audits or during the PTW application shall be corrected as soon as possible, and when necessary, work shall be stopped until corrective actions are taken.

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9. Roles & Responsibilities

The following roles are key in the effective implementation of this document.

ROLE	RESPONSIBILITIES
BU Director / Asset Manager	<ul style="list-style-type: none"> Enforce compliance with this procedure, ensuring effective implementation of the PTW in accordance with this procedure, regardless of whether operations are carried out by the company's own personnel or by contractors Provide the necessary human and material resources to implement the PTW procedure
Authorizer	<ul style="list-style-type: none"> Review and authorize permits and ICCs in the Area under his/her responsibility Review and validate the safety measures proposed by the Permit Requester and Verifier Ensure an inspection is done before work commencement in order to verify that all safety measures are in place Ensure compliance with the conditions and safety measures established in the PTW Keep an updated record (paper or digital) of all active PTWs so that relevant personnel are informed at all times Cross reference all hazards that may interact when there are multiple PTWs active in the same plant area or system, and keep the involved people informed of the possible interactions Ensure that Gas/Atmosphere measurements are performed at the beginning of the work, and during the execution of work according to the PTW requirements Close the PTW after having ensured the work area is inspected and verified that it has been left in safe working condition
Verifier	<ul style="list-style-type: none"> Review and verify the information provided by the Permit Requester in PTW and ICC is correct and adequate for the work and work area Review and verify the safety measures proposed by the Permit Requester and define any additional measures if necessary
Issuer	<ul style="list-style-type: none"> Carry out an inspection before work commencement in order to ensure that all safety measures are in place Brief the Permit Holder and Work Performers on the conditions affecting the work and the PTW Update the "shift book" or equivalent tool to report the PTW active in the shift Cross reference all hazards that may interact when there are multiple PTWs active in the area under the responsibility of Issuer, and keep the involved people informed of the possible interactions Before closing the PTW inspect the work area and verify that it has been left in safe working condition Perform Gas/Atmosphere measurements at the beginning of the work, and ensure that Gas/Atmosphere measurements are carried out according to the PTW requirements during the execution of work
Permit Requester	<ul style="list-style-type: none"> Carry out the necessary activities to request PTW in order to carry out the work under his or her responsibility that must be controlled by permits Inform the people that can be affected by the work of potential hazards when requesting the PTW and while the work is in progress

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ROLE	RESPONSIBILITIES
	<ul style="list-style-type: none"> Propose preventive and safety control measures Ensure that frequent inspections are conducted to verify compliance with the PTW conditions Suspend the work if compliance deviations are identified and correct any such deviations Coordinate with the Permit Holder the work preparation and execution, in due time and manner Ensure all personnel performing the work are competent and skilled
BU S&E Representative	<ul style="list-style-type: none"> Advise on general PTW issues and in the implementation of this procedure If necessary provide initial risk assessment advice regarding activities and sites so the Permit Requester can start the PTW process Provide support for risk assessment Monitor the open/ongoing and closed/filed PTWs on a regular basis and consolidate the outcome PTW audit
Affected Area Responsible	<ul style="list-style-type: none"> Validate the PTW, if required, and provide advice regarding the risks associated with the work in the area of responsibility Inform any personnel within the area of responsibility that could be affected by the works
Permit Holder	<ul style="list-style-type: none"> Ensure all personnel performing the work are competent and skilled Keep a paper or digital copy of the PTW in workplace Give an onsite safety talk (Toolbox Talk) to all people involved and obtain signatures of all Work Performers to confirm that they have attended the safety talk (Toolbox Talk) Verify that all the conditions and safety measures are fulfilled according to the requirements included in the PTW Ensure that the safety measures are complied with by the work team once the work has been completed Suspend PTWs until compliance with procedures and safety practices is confirmed Close the PTW after inspecting the work area and ensuring that the area has been left clean and safe and the equipment is operational or secured once the work has been completed
Work Performer	<ul style="list-style-type: none"> Follow the instructions provided in the PTW
Contractors	<ul style="list-style-type: none"> Act in accordance with the applicable procedures and practices established in the BU and in this document

10. Exemptions

If for any reason, compliance with this procedure is deemed not possible, "Management of Change in E&P (20-00138)" procedure will be followed. A formal risk assessment shall be undertaken to demonstrate that the risks associated with the PTW, will be both ALARP and Tolerable according to the E&P "Hazard Management (20-00139PR)" procedure. The risk assessment must be reviewed by the owner of this procedure and a variance must be signed by the corresponding level of authorization according to the norm on "Safety and Environment Risk Management (00-00353NO)".

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11. Appendices

Appendix I. Reference documentation

Internal Reference Documentation

- HSE Management in E&P Contracts (20-00126PR)
- DG E&P HSE Bridging Document (031 PR 03464 MN UP)
- DG E&P Lifting and Hoisting Operations Practice (026 PR 03467 MN UP)
- Management of Change in E&P (20-00138PR)
- Internal S&E audits (20-00181PR)
- Hazard Management (20-00139PR)
- Safety and Environmental Risk Management (00-00353NO)
- Incident Management (00-00343PR)
- S&E Management System Manual (20-00185DC)

External Reference Documentation

- IOGP - Guidelines of Permit to Work (P.T.W.) Systems. Report No 6.29/189 January 1993
- Guidance on Permit-to-Work Systems. UK Health and Safety Executive, 2005
- The safe isolation of plant and equipment. UK Health and Safety Executive, 2006
- IOGP – Diving Recommended Practice. Report No 411 June 2008

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Appendix II. Minimum information to be captured in a PTW

NAME OF FIELD	EXPLANATION/COMMENTS
Type	One of the following types: 1-Cold Work, 2-Hot Work Spark Potential, 3-High Energy Hot Work, 4-Confined Space Entry, 5-Breaking Containment, 6-Excavation, 7-Electrical, 8-Radiation
Title	Title of the PTW
Facility	Name of the facility where the work is executed
Area Authorization	The Area that authorize the PTW
Planned Start Date	Planned Start Date
Planned End Date	Planned End Date
Planned Working Hours	Planned Working Hours or working shift
Work Description	Description of the work to be done under PTW
Tools/Equipment to be used	Tools and equipment to be used in order to execute the work under PTW
Work Location	Location(s) that the work under PTW will be carried out
Affected Locations	Location(s) that may be affected by the work under PTW
Acknowledge by Affected Area authority required?	Acknowledge by Affected Area authority
Affected area name	Name of the Affected Area
Offline work	Selected when the work location has no connectivity
Remote work?	Selected when the work location is an 'Normally Unmanned Installation': An installation where the owner of the area is not present daily
Equipment	The work under PTW will be done in this 'Equipment'
Contract company	Name of the contractor company doing the work under PTW
Number of workers	Number of workers working under the PTW
Work Order	Number of work order
Equipment Criticality Code	Criticality of the 'Equipment'. A1: SECE, A2: Safety equipment, B1: Production critical equipment, B2: Production equipment, C: Not critical for S&E and Production, NA: Unknown
Lead Discipline	Discipline who leads the work under the PTW
Isolation Requirement	Isolation requirement: 1-Full, 2-Self-Isolation, 3-None
Work requires Control Room Operator to acknowledge?	Work under PTW requires Control Room Operator to acknowledge
Required Measurements	Gas or Atmosphere measurement requirement
Risk Assessment Level	Level of risk assessment required for the work under PTW: Risk Analysis (HAZID), Job Safety Analysis
Supporting documents?	Work under PTW requires supporting documents

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Document name/type	Name of required supporting documents
Supervision required (operator, safety watch, other)?	Work under PTW requires supervision
Name/position	Name of the position required to supervise the work under PTW
Inhibit/override required?	Work under PTW requires inhibit or override
Equipment/Elements	Name of the Equipment or Element to be inhibited or overridden
Is Lift Plan required?	Work under PTW requires Lift Plan
Is Diving Plan required	Work under PTW requires Diving Plan
Additional Information for Excavation PTW	
Coordinates	Visible for Excavation permit type
Dimensions	Visible for Excavation permit type
Depth (m):	Visible for Excavation permit type
Extension (X,Y) (m):	Visible for Excavation permit type
Burried Cabling/Pipes/Drains?	Visible for Excavation permit type. Default = not selected
Is Manual Excavation Required?	Visible for Excavation permit type, if BurriedCabling/Pipes/Drains = Yes. Default = not selected
How have buried cables/pipes/drains been verified?	Visible for Excavation permit type, if BurriedCabling/Pipes/Drains = Yes
Additional Information for Confined Space PTW	
Type of ventilation	Visible for CSE permits. Default = not selected
Additional Information for Electrical work PTW	
Type of work	Visible for Electrical permits. Default = not selected
Comment	Visible for Electrical permits if Type of Work = Others
Voltage	Visible for Electrical permits. Default = not selected

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Appendix III. Minimum information to be captured in an Isolation Confirmation Certificate (ICC)

NAME OF FIELD	EXPLANATION/COMMENTS
Title	Title of the isolation
Facility	Name of the facility where isolation is done
Area Authorisation	The Area that authorize the isolation
Affected area name	Name of the Affected Area
Work Location	Location(s) where isolation will be put in place
Offline work	Selected when the work location has no connectivity
Equipment	The isolation will be done on this 'Equipment'
Reason for Isolation	Reason(s) for doing this isolation
Lockout Box	Description and number of lockout box
Lock No	Number of lock
Isolation Point	Name or description of isolation point
Type	Type of isolation (process/mechanical, electrical low voltage, electrical high voltage, inhibit and override)
Method	Method of isolation
Isolated State	State of isolated
De-isolated State	State of de-isolated

Appendix IV: SIMOPS Form

See Word attached

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Appendix V: PTW and ICC Monitoring Check List

Checklist for PTW monitoring:

	Question	Answer	Remark
	Planning and Workscope		
1	Is the task and work method clearly described?		
2	Are any special tools, or equipment used, clearly defined on the PTW?		
3	The correct PTW type has been selected?		
	Assess Hazards / Controls		
4	Has the requirement for work site checks, and level of supervision been specified on the Permit?		
5	Is the correct level of Risk Assessment used?		
6	Have all the hazards been clearly identified?		
7	Have all control measures been clearly identified and are they adequate to mitigate the identified hazards?		
8	Are the verifications to be performed at the job site specified correctly?		
9	If any PPE other than the usual ones is required, has it been correctly identified?		
	Implement Controls / Issue Permit		
10	Have the proper authorisations been obtained to implement the controls, isolations, overrides and/or bypassing of safeguarding systems?		
11	Have possible interactions between simultaneous activities been identified and the corresponding controls established?		
12	Have the Permit Issuer and Permit Holder visited the worksite before starting the job?		
13	Are the specified isolations in place and have they been demonstrated to the Permit Holder (to ensure that the correct equipment is isolated and there is no stored energy or other hazards remaining)?		
14	Were all the hazards and control measures clearly described and communicated to the Permit Holder?		
	Workparty Pre-job Discussion (Toolbox Talk)		
15	Has the Permit Holder communicated to members of the work party relevant information on hazards, controls and actions to be taken for any change in worksite conditions, and confirmed their understanding?		
16	Do the workers understand the required controls in order to execute the work safely and signed the Toolbox Talk?		
17	Has the Permit, Risk Assessment and Toolbox Talk been updated to include any additional hazards/controls identified by members of work party, if applicable?		

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Execute and Supervise			
18	Is the PTW valid, within timeframe, with authorised signatories and supporting documents/certificates as required?		
19	Are all the PTW control measures in place and the prescribed work method adhered to?		
20	Is the required level of housekeeping satisfactory?		
21	Is there a copy of the PTW (hard copy or digital) available in the place where it is being executed and does it coincide with the one indicated on the PTW?		
22	All personnel on the job are wearing necessary PPE as identified on the PTW (Including usual PPE)		
Job completed, closed and handback			
23	Have the copies been returned for archiving (or attached to the permit in the tool) before closing the PTW?		
24	Tags and locks have been removed as per the approved isolation plan?		

Checklist for ICC monitoring:

	Question	Answer	Remark
1	Is the isolation/de-isolation plan suitable & sufficient to carry out the task safely?		
2	Do the equipment numbers on the ICC and PTW match?		
3	Is the actual isolation adequate for work being carried out on the PTW and is the reason for isolation accurate?		
4	Does the ICC have marked up P&IDs or diagram attached? (Process/Mechanical Only)		
5	If the isolation does not meet with the required standard, is a waiver, together with a risk assessment, approved and in place?		
6	Have isolation tags been displayed at all isolation points including spades etc.. Are all valves secured appropriately? (Process/Mechanical Only)		
7	Are isolations correctly identified, and do lock numbers match?		
8	Are all associated keys locked in the lockout box?		
9	Are labels correctly filled out with the required information?		
10	Have all the isolations been removed or transferred to the LTI register if applicable?		
11	Has the worksite been left in a clean and safe condition?		
12	Has a reinstatement leak test been carried out and is the leak test result available? (Process/Mechanical Only)		
13	Has the LTI register been reviewed and signed recently in accordance with the requirements?		

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Appendix VI: List of works that the PTW can be issued remotely for contractors in Normally Unmanned Installations

1. Crude Truck loading and unloading
2. Water Truck loading and unloading in classified Area
3. Road Maintenance (Only specific to Repsol owned roads/leases)
4. Vegetation Control (Walking and working with chemicals)
5. Trim Inspections (Checking valves and flanges to ensure they are still intact)
6. Hazardous waste removal
7. Meter calibration
8. Use of Glycol Circulation Heater to thaw frozen waste water line

Appendix VII: List of works that a contractor can carry out without PTW in Normally Unmanned Installations

1. Water Truck loading and unloading in non-classified Area
2. Domestic waste removal
3. Drinking bottled water delivery

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Approval

Validity

This procedure will become valid on the tenth (10th) working day after the date of its approval.

Revoked regulation

- Permit to Work (PTW) System (20-00029PR) v 2.0

General and temporary provisions

None

Revision 3.0 approved by:

Approval: 17/12/2020

Jose Fernando Hurtado Laguna

D. S&E E&P