**APPENDIX 5**

# Permit to Work (PtW)

## Purpose

To manage the Risks of hazardous work and work that could interfere with other hazardous operations, so that they are coordinated, controlled and communicated.

## Who is this for?

- *Managers and Supervisors*
- *Sakhalin Energy staff and contractors with Permit roles (e.g. Performing Authorities, Area Authorities, Site Controllers and Permit Coordinators);*
- *HSE Professionals;*

## What situations are covered?

This document covers activities undertaken by Sakhalin Energy staff and (sub) contractors on behalf of the Company and applies to:

- *All situations where non-routine or hazardous construction, modification, inspection, maintenance, repair, testing, dismantling and cleaning are conducted.*
- *Hazardous tasks, unless they are covered by normal operational procedures (e.g. POPMs, well program, well service approved procedure etc.), as described in the Hazardous Activities Standard and* Permit to Work Manual*: Integrated Safe System of Work (ISSOW)*
- *Work that could adversely affect the control of HSE risk in other hazardous operations occurring at the same time, or that could itself be adversely affected by those operations.*

## Responsibilities:

**Managers are Accountable for requirements 1-13 below:**

1. All work activities from the list below are defined as hazardous activities and shall be undertaken under the established SEIC Permit to Work System:

**Hot Work Category 1**

- Work involving naked flames
- Electrical Welding
- Dry grit/shot blasting in hazardous zones
- Explosives
- Electrical induction pre-heating, stress relieving or use of high temperature thermal calibrators above 200°C, except in authorized workshops and laboratories
- Grinding, air or power driven
- Use of heat shrink blowers in Hazardous Zones.
- Use of equipment or work on pipe work or vessels contaminated with pyrophoric iron scale
- Hot tapping
- Use of flare guns

**Hot Work Category 2**

- Soldering irons
- Vehicle entry

- Use of non-appropriately rated EX equipment and electrical powered tools in Hazardous zones This includes both AC and DC powered tools (eg electrical and battery powered drills), photo and video equipment
- Opening live electrical junction boxes / equipment in Hazardous zones where terminals are exposed to atmosphere
- Use of air or hydraulically powered tools including needle guns capable of generating a spark mechanically (excluding torque wrenches in Hazardous Zones)
- Work involving explosives requiring radio silence
- Work involving explosives not requiring radio silence (radio safe equipment)
- Use of electrically powered shrouded friction-welding equipment in Hazardous Zones
- Operation in Hazardous Zones and Non-hazardous Zones of protected portable diesel engines, which are not tied into the fire and gas systems

**Cold Work**

- Working with radioactive sources
- Working with Normally Occurring Radioactive Material (NORM) or Low Specific Activity (LSA). Handling of NORM/LSA for well equipment is covered by Pan Asset Procedure Management of NORM. Well Workover Operations
- Working with nitrogen gas
- Working with asbestos
- Working with mineral fibre
- Handling or use of hazardous substances
- High pressure (HP) water jetting or grit blasting
- Ultra high pressure (UHP) water cutting
- Spray painting/coating
- Removal of handrails, gratings, hatches and fixed ladders
- Use of air or hydraulically powered tools including needle guns in Non-hazardous Zones (including torque wrenches in Hazardous Zones)
- Wet grit/shot blasting
- Use of Class 1,2 or 3 (low powered) lasers
- Work affecting the availability of fire and gas detection systems, e.g. flammable gas detection, oil mist detection, H2S detection, fire detection and Uninterruptible Power Supplies (UPS)
- Work affecting the availability of fire or explosion control or protection arrangements, e.g. explosion protection, deluge, fixed firefighting foam systems, fire pumps, fire ring main, gaseous systems (HALON/CO2) and passive fire protection sprinklers
- Work affecting facilities provided for the refuge, protection, escape and evacuation of personnel, e.g. Hazardous and Non-hazardous Zone ventilation, access/evacuation routes, temporary refuge, emergency / escape lights, personnel safety equipment, helicopter support systems, gangway, tertiary means of escape and rescue facilities
- TEMPSC maintenance and launching for training
- Work affecting the availability of process safety and protection arrangements, e.g. manual alarm call points, Emergency Shutdown Valve (ESD) systems, blow down and drains systems
- Work affecting the internal or external communications systems of the installation/site
- Working on computer controlled systems
- General construction, maintenance overhauls and repairs in operational areas not involving the breaking of containment of hydrocarbon or hazardous systems
- Work over side or where there is a danger of falling into the sea

- Rope access (abseiling)
- Work aloft or at height
- Erection or dismantling of scaffolding at potentially dangerous locations, e.g. close to highly pressurised plant where there is a danger of damage to vulnerable equipment - impulse lines etc.
- Working on the Flare Stacks/Towers/Booms
- Hydrostatic pressure testing of plant and equipment
- Nitrogen/Gas leak or pressure testing of plant and equipment
- Bleeding down vessels to drains or to atmosphere
- Work inside concrete legs of offshore installations
- Work in confined spaces or vessels and temporary enclosures
- Use of Man-riding winches
- Personnel transfer between offshore installation and vessel by personnel capsule (Frog)
- Use of certified personnel work baskets (other than Frogs for personnel transfer)
- Diving Operations
- Rig Skidding
- Lifting/rigging operations in areas that require special controls and a lifting plan, or where the lift has the potential to cause damage to other equipment or systems
- Use of shrouded friction welding equipment in Non-hazardous areas
- Electrical work resulting in the non-availability of:
  - Emergency generators/switchboards
  - Electrical supplies to Category A Electrical Equipment
  - Electrical supplies to the accommodation
- Work on lifts, which involve access in to the lift shaft
- Excavation work to a depth greater than 30cm
- Demolition
- Work in a room of a building that has High Voltage Electrical and/or CO2 Fire Protection Equipment, regardless of whether it is in the Operational or Non-Operational Area, (this includes cleaning, such as mopping, sweeping etc.)
- Hydrocarbons sampling
- Pig launching/ receiving

**Breaking Containment**

- Any non-routine work within the operational and non-operational areas where the work involves the breaking of containment of systems or equipment containing produced hydrocarbons or other high pressure, high temperature or hazardous materials.
- Job requiring breaking into lines that are known to contain hydrocarbons, lines that cannot be proved to be gas free or into lines where isolation valves are suspected to be passing.
- Construction, maintenance, overhaul and repair work in operational areas involving the breaking of containment of systems or equipment containing produced hydrocarbons or other hazardous / toxic materials such as high pressure / high temperature or flammable liquids, e.g. oil, gas HP Water Injection, chemicals, glycol, etc.
- Spading and de-spading of systems or equipment containing produced hydrocarbons or other hazardous / toxic materials such as high pressure / high temperature or flammable liquids, e.g. oil, gas HP Water Injection, chemicals, glycol, etc.

**Confined Space Entry**

Confined Space Entry Certificates do not allow any specific work to take place within a confined space, but only allow entry for inspection and for conducting gas testing by an Authorized Gas Tester (AGT).
Any work within a confined space must be carried out under a separate WCC-Permit, to which the corresponding Confined Space Entry Certificate will be referenced.

**Other**

- Transportation of heavy, oversized loads and specialized equipment by trailers
- Lifting operations by two or more cranes
- Lifting operations for loads where load center is not defined by the manufacturer

A Permit to work is not required for routine production plant operations, which do not breech the pressure envelope, as long as they are conducted by competent people in accordance with approved Operating Procedures. List of activities normally not requiring a Permit to work is listed in Permit to Work Manual.

2. The controls required for all activities are based on a Risk Assessment utilizing the Hierarchy of Controls as described in the Hazardous Activities Standard. All hazardous tasks not covered by an approved operating procedure and not requiring a permit shall have a Task Risk Assessment (Job Safety Analysis) to identify hazards and controls. The Task Risk Assessment shall include:
   - Identification of the hazards and their effects
   - Assessment of the hazards and their effects
   - Definition of the controls required and
   - Recovery actions required if an unsafe situation occurs.

3. The following (but not limited to) specific activities shall always have a Level Two Risk Assessment as described in the Permit to Work Manual and relevant operational procedures:
   - Activities with high risk (reviewed on a case by case basis)
   - Activities with Medium or High risk performed for the first time by a work party
   - Confined Space Entry
   - Hot Work Cat 1
   - Hot Work Cat 2 in hazardous zone 1
   - Hot Tapping
   - When isolation doesn't comply with Sakhalin Energy minimum standard
   - Heavy lifts / Lifting operation over Live equipment
   - Situations requiring a Stand Alone Risk Assessment (SARA)
   - When specified by the Site Controller or Site HSE Manager.

4. Permits to Work are obtained in accordance with the requirements of the Permit to Work Manual and that staff and (sub) contractors understand and implement the controls that are identified in a Permit to Work.

5. Permit to Work documentation is available in Russian and English as required by the nationality of the work party and permit authorizers.

6.The operational preparations required before a PTW can be issued are:
   - Isolation of the work area from Hazards including all potential sources of energy, conforming to Pan Asset Operations Procedure - Isolation and Reinstatement of Plant and Equipment.
   - Hazard freeing and confirmation that either the Hazards have been removed or the appropriate Controls are in place to manage them to ALARP;
   - Controls needed to manage the potential interaction between different work activities (Concurrent Operations); and
   - Controls needed to manage the temporary overriding or bypassing of safety devices.

7. The PtW template either electronic or paper based forms shall be in accordance with requirements set out at the Permit to Work Manual

8. The authorised signatories are: Performing Authority, Isolation Authority, Area Authority, Site Controller, Overall Authority and other Specialist Signatories, as defined in the Permit to Work Manual, along with their specific authorities and roles

9. Staff and contractors who are authorized PtW signatories shall have successfully completed the appropriate Permit to Work training as per the SEIC HSE Training Matrix.

10.The Permit to Work Manual shall specify how permits are issued and closed, including for both 'complete' and 'suspended' situations, how shift handovers are managed, and the period of validity of permits.

11. Deviations from the PTW Procedure shall be based on a level 2 risk assessment and authorized by the Overall Authority as defined in the Permit to Work Manual.

12. If a paper based PTW system is used, Permits, certificates, TBT forms and supplements shall be stored for a period of at least 3 months. If an electronic system is used the daily TBT forms, gas test records, excavation certificates or any other supplementary materials without an electronic copy shall be stored for at least 31 calendar days. This timeframe can be extended (but not reduced) by the Site Controller.

13. There shall be a programme of regular PtW audits covering use of work control certificates (WCC), Isolation control certificates (ICCs) and supplementary control certificates (SCCs).

**The Performing Authority is Responsible for requirements 14-18:**

14. Communicate to the Area Authority the nature and scope of the work and special tools involved.

15. Communicate to the members of the Permit Authority work party the information on Hazards, precautions, action in the event of emergency and changes to work conditions.

16. Not allowed to issue permits for themselves.

17. Where additional certification/documentation is used in support of a Permit, they shall be referenced and attached to the valid Permit to Work. Additional certification / documentation should be provided in compliance with Permit to Work Manual.

18. Two copies of the permit shall be available, one at the work site with the Performing Authority and the other at the issuing point (either IT or paper based) , so that the status of the permits in any area can be readily assessed.

**Area Authority is Responsible for requirements 19-23:**

19. When one or more Specialist Signatory is needed, issue the permit only after the specialist(s) has signed the permit

20. Ensure that all the appropriate control measures have been put in place prior to allowing a Permit to go live, confirming that the Performing Authority fully understands the scope of the task and those members of the work party will be fully briefed via the toolbox talk process.

21. Communicate the requirement for work-site checks to the Performing Authority

22.For isolation or de-isolation confirming that an isolation does not conflict with other isolations already in place, where necessary with process or electrical specialists

23. Inform all people who may be affected by the work.