

The purpose of a Work Permit system is to ensure that jobs are safely planned, equipment is properly prepared, employees are adequately informed and work is safely executed. The responsibility of safety is shared by all involved in the job covered by the Work Permit system.

This procedure also safeguards against potential environmental releases. This document stems out from PSM No. 15, "Procedures and Performance Standards", which requires that a system should be in place to ensure that all the Operation and Maintenance activities are done safely by establishing procedures for safe practices. Affected Person is anyone who works in an area where lockout is performed, but who does not put a lockout device. In EPQL, Contractor employees, Trade Apprentices and Graduate Trainee Engineers would be considered in this category. All the employees who are involved in the Permit to Work System and are Authorized in writing to discharge certain responsibilities in this regard. In other word anyone who affixes a lock / tag or who is involved in LOTOTO is called an Authorized Employee. Issuer: Can issue and accept all types of permits. Authorized to Isolate Level-1: To Carryout Mechanical & LV/MV isolations. Authorized to Isolate Level-2: To Carry out all Mechanical & LV/MV/ HV systems. Standard Acceptor: Can take all types of Permits except HV/MV system. HV Acceptor: Can take all types of Permits including LV/MV/HV systems. Test Acceptor: An HV Acceptor carrying out IR / WR on HV/MV system, Generator HighPot test etc. Live Acceptor: Can take live Permits. Authorized to Testout: Can perform Test out of LV/MV/HV isolated electrical systems. An employee, who supervises the work to be carried out, leads a team of workers and is authorized in writing to accept Permit to Work (PTW). Before taking the Permit, he should discuss the work plan with Issuer, preferably well before planning to start work, for clear understanding of the nature of job, isolation involved and any remaining hazards. Acceptor is responsible to reconfirm isolations carried out, ensuring safe place to work and safe access to work. He is responsible for safety of his team members. During the course of work, if any hazard is identified that may cause danger to the personal or equipment; he should stop the work immediately, evacuate his team from the area and inform the Issuer. It's Acceptor's responsibility to inform the Issuer before using any of the plant services, safe method of work and use of approved tools. After completion of work, housekeeping of the area, removal of barricading and restoration of protective guards is essential part of Acceptor's responsibility. After clearing the area, Acceptor should 'Personally' clear the Permit to Work and inform the Issuer any Exceptional conditions, if exist. It is mandatory for Work Permit Acceptor to carry masks while working at high places in order to allow safe execution. Low Voltage level: up to 250 V is Low Voltage (LV). Medium Voltage (MV) level: from 251 V to 650 V. High Voltage (HV): level above 650 V. Apparatus: All equipment, in which electrical conductors are used, supported or they may form a part. Plant: Fixed or movable items other than Apparatus are called plant.

Validity of PTW: The validity of a PTW shall be one Operations shift i.e maximum 12 hours. If the work needs to be continued, the incoming Operations Coordinator shall do risk assessment in the area and if the conditions are same, he shall revalidate the permit for his own shift only i.e 12 hours. The incoming Operations Coordinator would sign off at back of the hard copy of PTW or additional sheet attached with PTW (additional sheet must have the corresponding PTW No.). Likewise if the acceptor changes, the incoming & outgoing acceptors shall signoff at the back of PTW or additional sheet. If work is not completed in 12 Hrs Shift then before resuming the job, Permit should be 'Revalidated as per above mentioned protocol. In

case of confined space entry work permit, the validity of PTW shall be one operations shift and a fresh/new PTW shall be issued, if work is still to be continued. If equipment is removed physically from its process position and is expected to take longer period for repair then PTW should be returned to Issuer with remarks in the section of 'Any Special Instruction' specifying the status of work. Issuer, clearing the Permit, shall ensure all points of Isolation are locked, including Mechanical points, and isolation keys are secured in Key safe. Key safe should be marked with a notice displayed on it and locked by its 'Control Key'.

Work Planning: Advance Work Planning is a very fundamental requirement of managing work safely. All information regarding the work should be exchanged with Issuer and other departments in Morning meeting one day before. The nature of work, resources available, extent and scope of work and any support required from other interfaces should be agreed in the meeting. The request for Permit should be sent to Operation Coordinators one day before. OC on duty in night will prepare the equipment and Permit in the night prior to the start of planned day. However, Emergency works can be planned without giving one day notice but scope of work, required isolations and potential hazards and required support must be discussed before proceeding for preparation of equipment and Permit.

Steps involved in work permit system: PTW shall be required for all maintenance jobs to be carried on plant or apparatus which is part of the system.

- 1) The Issuer or authorized Field Operator inspects the work area and assesses the safety precautions to be taken.
- 2) Issuer prepares the equipment for the job and ensures if conditions are safe for the work to proceed as follows:
 - ☐ If a gas analysis is necessary; the Issuer will have the gas test done. Upon receipt of a satisfactory gas test result, he will issue the Work Permit. Actual reading of explosivity shall be recorded on the permit.
 - ☐ Issuer will discuss and instruct the Field operator to carry out required lock out/tag out/try out. In case of work on electrical systems where breaker rack out provision is not available, issuer shall call electrical engineer / designate for Test out of already isolated system and then mention it on isolation order form. Test out protocol also applicable and should be followed for the isolation of control supplies. For all isolations above 415V, OC/Operations Supervisor shall personally supervise the isolations. Both, field operator and issuer shall sign the isolation order form. Issuer shall hand over the isolation order form to Acceptor for verification of all the isolations. After verification, the Acceptor shall sign the isolation order form. Issuer shall retain the isolation form with him.
 - ☐ Isolation order form shall bear a number given by the Issuer.
 - ☐ Isolation order form shall also record all PTWs issued on this form.
 - ☐ Every permit issued on this isolation order form will be attached to it.
 - ☐ The Issuer shall prepare the permit.
 - ☐ It is the responsibility of the Issuer to brief the Acceptor on any specific conditions existing in the area where the work is to be done, so that he can perform his work in the safest possible manner. The Acceptor should be made aware of any specific hazards, possible contact with any chemicals or the possibility of being exposed to toxic gases and the energized circuits in the vicinity, if any. The same should be written on the Permit in Exception area of the Permit.
- 3) The Acceptor signs the permit as a token of his complete understanding and acceptance of the safety requirements to be observed by him and his team.
- 4) The Field Operator should read permit carefully and ensure all signatures are there before signing.
- 5) The permit shall be clearly displayed at the location of work.
- 6) The Issuer shall place the original WHITE Copy of work permit in dedicated file in the Control Room.
- 7) When the work is completed to the satisfaction of the

Work Permit issuing authority and the work area cleaned, the Acceptor shall sign and exchange his copy of the permit with the Issuer.8)In addition to the Confined Space Entry permit a separate Cold or Hot Work Permit must also be issued for the actual job that is to be carried out.9)No alteration in PTW allowed. Any alteration in Permit will invalidate the Permit. 10)For instrument jobs which require live work on LV system (Voltages up to 220 V) only, Live electrical permits shall be required. 11)Test out protocol is also applicable for isolation of control supplies. 12)LOTOTOTO Protocol shall also be followed for Mechanical jobs only where work involves physical contact with the equipment. Like Equipment or Pump overhauling, Pump alignment etc.

13)Live Electrical work permit for all MV & LV apparatus will be issued to HV Acceptor only. 14)When permit is cancelled and equipment is de-isolated, it is the responsibility of the issuer to confirm that all Tags have been removed. 15)More than one permit can be issued on same isolation to different sections. Each Acceptor shall take key of the Key safe box after confirming the isolations required for his job. 16)If scaffolding is required to work at an elevated location, it should meet the safety standards on scaffolds. All scaffoldings shall be inspected / approved by the authorized / certified personnel before use. The scaffolding certificate should be displayed at the scaffolding ladder as specified in the procedure for scaffolding. The approving supervisor should mention the location, date and his name along with his signatures on the scaffolding tag. The scaffolding shall be certified following the guidelines given at the back of scaffolding certificate. Caution: The "Do Not Use This Scaffolding" tag should be displayed on the scaffolding if it is

incomplete, unsafe, substandard, or yet to be certified. 17)Work Permit shall be issued to EPQL permanent & contract employees who have qualified the test on Work Permit procedure. 18) Separate PTW shall be obtained for TEST OUT activity during LOTOTOTO implementation process in both process and non-process areas. 19)Test out protocol also applicable and should be follow for the isolation of control supplies. Permits for more than one Job: A Cold Work Permit may be issued to an Acceptor to cover a number of jobs similar in nature like: However the Acceptor should follow the relevant maintenance procedure. 1.Collection of samples by trained non-Operations personnel. 2.Preventive maintenance inspections. 3.Routine daily checking of instruments (where controllers and critical indicators are not involved) and analyzers. 4.Inspection of grounding clamps, cables and cathodic protection potentials. 5.Greasing of machines. 6.Vibration analysis of machines. Tagging: All the spare/redundant breakers/cubicles shall be labeled accordingly by Operations Department and will be kept in OFF and immobilized. Usage of this cubicle/breaker will be subject to