WesCEF Penetration Procedure

Number	WCEF-PD-OHS-040-06				
Reasons for Creating or Amending Document	Full Review of Document				
Actual Change Details	Updated Procedure to current header and footer Minor formatting changes				
Version	5.0.0	Published	03/06/2021	Review Date	3/06/2022

TABLE OF CONTENTS

1. INTRODUCTION

The purpose of this procedure is to describe the processes for managing the risks associated with penetration work.

2. DEFINITIONS

A penetration is defined as any work which penetrates into a blind space (a space that cannot be visually inspected prior to the penetration) or involves mechanically penetrating materials defined in the below list:

- Walls
- Cement flooring or slabs
- Plinths
- Bund walls and floors
- Roadways
- Concrete/bitumen walkways
- Ground/soil
- Electrical cable support systems (cable trays etc)

3. RESPONSIBILITIES

3.1 MANAGER

Managers are responsible for:

- Providing a safe system of work where persons are not exposed to hazards associated with penetrations.
- Ensuring that information, instruction, training and supervision of all personnel is provided to enable them to safely perform their work.
- Ensuring risk assessments are conducted by competent personnel before the commencement of work and appropriate control measures are selected.

3.2 ACCOUNTABLE PERSON (AP) (FOR CONTRACTORS)

Accountable Persons are responsible for:

- Establishing where practicable, systems of work which consider the hierarchy of control when determining the requirement to perform penetration work.
- Establishing the exact location of existing services prior to any penetration works.

- Ensuring all personnel know and follow established procedures for penetrations.
- Ensuring JSA's are developed and approved prior to the commencement of work and checking that required controls are in place when work is being undertaken.
- Ensuring risk assessments are reviewed any time the scope of work changes or the risk increases.
- Ensuring only trained, competent personnel perform penetration work.

3.3 PENETRATION AUTHORISER

Penetration Authorisers are responsible for:

- Ensuring all risk control measures are in place prior to workers commencing a penetration and issuing a Penetration Certificate in accordance with the relevant Work Permit System.
- Assisting the Accountable Person (AP) in planning and executing work associated with penetrations.
- All Penetration Authorisers issuing Penetration Certificates are to be approved in writing by the Business Unit Manager or equivalent.

3.4 PLANNER / SCHEDULER

Planners or Schedulers are responsible for:

- Ensuring that the requirements of this procedure are included during the planning of the task (including maintenance shutdowns) by considering the hierarchy of control for the work being planned and making provision for appropriate controls to be available.

3.5 PERMIT HOLDER

Permit Holders are responsible for:

- Obtaining a Work Permit from the appropriate area. Refer to Work Permit System *(CSBP-GM-11-031-51)*, Permit to Work Procedure (KHO-PD-OHS-070-0) or Permit to Work System *(*KHP-GM-OHS-070-01).
- Ensuring a Job Safety Analysis is completed and all team members have been briefed on the controls to be put in place.
- Ensuring all work is planned according to engineering requirements/specifications.
- Ensuring all personnel have safe access to plant and equipment at all times.

3.6 PERMIT TEAM MEMBERS

All permit team members are responsible for:

- Participating in the development of the Job Safety Analysis (JSA) and complying fully with its requirements.
- Not commencing work unless all controls identified on the JSA are in place.
- Reviewing and re-signing the JSA if the scope of work, conditions or risk changes or the task ceases for any reason for an extended period of time and recommences.
- Following the conditions specified in the Work Permit, JSA and associated Penetration Certificate.

4. PENETRATION PROCEDURE

4.1 GENERAL REQUIREMENTS

A suitable risk assessment (Job Safety Analysis or Team Based Risk Assessment) will be carried out before applying for a permit or certificate.

All penetrations as defined by Section 2 above require a Penetration Certificate *(CSBP-PF2470)* to be issued with a work permit prior to the commencement of any penetration work.

A Penetration Certificate requires the Penetration Authoriser to clearly state the conditions under which the penetration is to take place. In addition to this, for electrical cable support systems, the Penetration Certificate may also be authorised by a WesCEF Electrical Engineer or Electrical Supervisor.

As a minimum the below should be addressed as part of the process.

1. Existing services shall be identified on the surface that is to be penetrated using a service locator (e.g. stud finder, boroscope, current detector).
2. Penetration is not permitted within 200mm of an identified service unless authorised by the Penetartion Authoriser.
3. Consideration must be given to any gas testing requirements; refer to Gas Testing *(CSBP-GM-11-031-33)* or (*KHP-GM-OHS-070-11*).
4. Environmental and occupational hygiene risks must be considered.
5. Consideration of containment integrity following penetrations into bund floors and walls shall be given.
6. Penetrating electrical cable support systems has electric and arc flash risks. To mitigate these risks the following controls must be implemented:

   (a) Test for electric field in the cables opposite the penetration.

(b) Where practicable, isolate the power supply to these cables and re-test for an electric field presence. In cases where the cable isolation point cannot be identified or it is not considered practical to isolate the cable, an Electrical Engineer or Electrical Supervisor shall be consulted prior to any further works.

(c) As part of the risk assessment for the task, the Electrical Engineer or Electrical Supervisor shall approve:

i) the proposed method of performing the penetration

ii) the proposed barrier system to be implemented to protect any cable whether 'live' or 'dead'.

(d) the mechanical protection provided for all cables on the other side of the penetration regardless of whether the cables are 'live' or 'dead'.

4.2 COMMENCING A PENETRATION

Precautions must be taken during a penetration to ensure that all hazards associated with process are controlled.

- Where possible, energy sources shall be isolated prior to the penetration commencing.
- Where a partial penetration is required, drilling equipment shall be fitted with a correctly set depth gauge.
- For larger penetrations consideration shall be given to tooling which minimises ergonomic and dust generation hazards (water cooled concrete corer).
- Drilling into double brick shall be completed one course at a time.
- The Environmental and Occupational Hygiene teams are to be notified when the penetrating material contains asbestos or if the penetration has the potential to intercept asbestos. Additional PPE must be worn and samples may require laboratory analysis.

5. REFERENCES

Basic Safety Rules (CSBP-GM-*11-035-02*)

Gas Testing *(CSBP-GM-11-031-33)*

Gas Testing and monitoring guide manual (*KHP-GM-OHS-070-11)*

Work Permit System *(*CSBP-*GM-11-031-51)*.

Permit to Work Procedure (*KHO-PD-OHS-070-01)*

Permit to Work System (*KHP-GM-OHS-070-01*).

A Job Safety Analysis *(*CSBP-*GM-11-031-23)*

Job Safety Analysis *(KH-SF-OHS-050-02)*

Penetration Certificate *(CSBP-PF2470)*

Occupational Safety and Health Act 1984

Occupational Safety and Health Regulations 1996