Number	KHP-GM-OHS-070-01				
Reasons for Creating or Amending Document	New or Amended Process				
Actual Change Details	Updated section 2.34 to reference AS/NZS4233, blasting certificate document number and Abrasive Blasting and Spray painting procedure. Requirement for blasting certificate expanded to include Class B High Pressure Water Blasting Operations.				
Version	17.0.0	Published	08/10/2025	Review Date	23/07/2027

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1. INTRODUCTION

1.1 GENERAL

Wesfarmers Kleenheat Production Facility (KPF) involves the handling of high-pressure natural gas and natural gas liquids at varying high and low temperature levels.

Maintaining the health and safety of plant personnel and the integrity of the Process Plant and equipment is essential. All personnel associated with this facility must exercise extreme caution in the performance of all their activities.

1.2 PURPOSE

The performance of work by personnel other than members of the Operations group within the Permit Area is not permitted until the requirements of this procedure have been fulfilled.

This procedure provides all personnel working within the Wesfarmers Kleenheat Production Facility a description of the procedures that must be followed prior to commencement of any work within the Permit Area. SUPAGAS will use the Wesfarmers Kleenheat Production Facility Permit To Work procedure till end of 2026.

It is the responsibility of every person who performs work within the Permit Area to ensure that they comply with the requirements of the Permit to Work System.

It is imperative that these procedures are adhered to by all personnel at all times.

THE PERMIT TO WORK SYSTEM IS A CRITICAL SAFETY PROCEDURE THAT MUST BE FOLLOWED AT ALL TIMES.

The only authorised exception to this procedure is when the safety of personnel and/or plant is in jeopardy and the process of issuing a permit compounds the urgent situation. In the above situation, the procedure must be followed to the extent that circumstances permit. For example: verbal rather than written operational authorisation of electrical isolation in an emergency. In this event, an incident report must be raised after the emergency situation has been addressed.

2. DEFINITIONS

2.1 CONFINED SPACE ENTRY (CSE) CERTIFICATE

Written authorisation issued by a Permit Authority, that all precautions and conditions specified within the Confined Space Entry Certificate have been complied with. Entry into the confined space is only authorised by issue of an associated permit and must be accompanied with a Confined Space Entry Certificate, Confined Space Entry Data sheet and a JSA. Further information can be found in the Confined Space Procedure KHP-GM-OHS-070-01

2.2 CONTROLLED AREA

Area inside the confines of the Kleenheat Production Facility boundary fence and all areas associated with the Export Loading facilities.

2.3 DANGER-DO NOT OPERATE TAG

A red, white and black tag attached to a section of plant or equipment to indicate that it must not be operated. For more details refer to section 6.1

2.3.1 CONFINED SPACE ENTRY TAG

A purple, red and black tag is the confined space entry tag- attached to plant or equipment indicating the boundaries of the confined space entry isolations. For more details refer to section 6.6

2.4 ELECTRICAL DISCONNECTION WORK PERMIT (BLUE)

The Electrical Disconnection Work Permit is similar to the Work Permit but has an additional section (5) which details Electrical/Instrument disconnection, reconnection and rotation checks.

2.5 STANDARD ISOLATION CHECKLIST

A Standard Isolation Checklist is a Kleenheat controlled document, which has a comprehensive list of all operational, mechanical, electrical and instrument isolations which has been reviewed by:

- **Kleenheat Production Facility:** Level 5 and above

2.6 EXCAVATION / PENETRATION CERTIFICATE

An Excavation / Penetration Certificate is a document (with accompanying drawings) showing the location of underground or within building walls, or not normally visible piping and services in the proposed work location.

This certificate is required to be raised when excavation / penetration is required as described in Section 7.5.4, and is used in conjunction with a Work Permit.

2.7 HARDWARE ISOLATION SHEET

A document filled/completed by the Shift Controller to isolate and/or bypass nominated control systems.

2.8 HV SWITCHING PROGRAM CERTIFICATE

A switching Program is a written list of sequential logical steps to permit isolation and re-energising of high voltage electrical apparatus.

2.9 INFORMATION TAG

A blue tag attached to a section of plant, valves or equipment to indicate an abnormal status. For more details refer to section 6.5

2.10 ISOLATION CHECKLIST

A Isolation Checklist is a Kleenheat controlled document, used to provide a comprehensive list of all operational, mechanical, electrical and instrument isolations on a designated piece of equipment which has to be reviewed by an Isolation Authority.

2.11 JOB SAFETY ANALYSIS (JSA)

A structured risk assessment used for tasks; ideally developed by those conducting the work. The JSA is developed by breaking the task into sequential steps; identifying the hazards or risks associated with that step; identifying suitable control measures and risk ranking the hazard with the control measures taken into account.

The JSA must be endorsed by a KHG approved person of equivalent position in the same discipline or higher. If authorisation is required out of hours, the Permit Authority can endorse the JSA. The JSA must be signed daily by the Permit Holder and Team Member(s).

If the JSA is not on a Kleenheat template, then a KH JSA Contractor Coversheet KH-SF-OHS-050-05 must be attached and endorsements completed, this is located with the PTW forms.

An individual is permitted to sign onto the JSA, even if they have not signed onto the Permit if they are either a supervisor or an observer of the task. This means that they will not be performing any hands-on work for the task.

JSAs may be stored electronically in a folder on the common drive.

2.12 PERMIT LOCK BOX BOARD

These boards are located in the KPF permit office and are used for displaying lock boxes with work permits, electrical disconnection work permit, confine space certificates or master isolation permits that have an isolation associated to it. Active permits are identified by having the yellow copy of the work permit on display, with all associated supporting documentation stored within the lock box documentation compartment. Active Master Isolation Permits are identified by having the white copy of the Master Isolation Permit on display, with all supporting documents stored within the lock box in the documentation compartment. The Permit lock box secures the isolation key(s) and is the attachment point for the Permit Authority's lock and the personal danger locks with tags for all personnel working on the task.

Portable Permit Lock Box boards shall be used when temporary issuing of permits during certain activities – e.g. jetty activities due to shipping, fire water pump maintenance or any job that requires a timely work schedule to reinstate the equipment.

2.13 MASTER ISOLATION DANGER DO NOT OPERATE TAG

A red, white and green tag attached to a section of plant or equipment to indicate the boundaries of the Master Isolation Permit. For more details refer to Section 6.2.

2.14 MASTER ISOLATION PERMIT

When a number of different tasks are being completed under separate Permits with all tasks sharing the same Isolation list, these permits are controlled under a Master Isolation Permit.

A Master Isolation Permit is designed to be used on major equipment or for sectional isolations mainly during (but not limited to) shutdowns as a blanket isolation. Any work that is to be carried

out on the equipment or section must have a permit that is linked to the Master Isolation Permit. The isolations must be clearly defined either with an isolation list or mark up PID's, showing the boundaries of the isolation.

Not until all work is completed and all permits associated with the Master Isolation Permit are signed off can the Permit Authority's lock be removed and the master permit authorised for de-isolation.

2.15 NON-CONTROLLED AREA

Area outside the confines of the boundary fence excluding the Export Loading facilities.

2.16 NON-PERMIT AREA

A non-permit area is classified as an area which may not require a permit for work. For more details refer to section 7.2.1.

2.17 OUT OF SERVICE TAG

A yellow and black tag attached to a valve, section of plant or equipment to indicate that it requires repair or temporary out of service. For more details refer to Section 6.4.

2.18 HARDWARE OVERRIDES

An override is an intentional deactivation, bypass of, or temporary change to a plant shutdown system via the control system of the plant.

2.19 PERMIT AREA

A permit area is classified as an area which requires a permit for work. For more details refer to Section 7.2.2.

2.20 PERMIT REVALIDATION (NORMAL WORKING DAY)

Permit validation for a normal working day is from 06.00 hrs to 18.00 hrs. In circumstances where work continues beyond 18.00 hrs the Permit must be revalidated. The Permit is then valid for a period of up to 12 hours.

2.21 PERSONAL DANGER DO NOT OPERATE TAG

A red, white and black tag similar to the "Danger Do Not Operate" tag but has additional required information (name and time) which accompanies a personal danger lock attached to a Permit lock box to indicate a team member is working on the equipment isolated associated with the permit to work system. For more details refer to Section 6.3.

2.22 SIGNATURE PAGE (BLUE COPY)

The blue copy of the Permit is removable from the permit, however, remains under the control of the Permit Authority in the permit issuing area. The Permit Holder signs on the signature page at the commencement of the job or start of each shift and signs off the signature page at the end of the job or end of each shift. The Permit Holder ensures that all team members sign on the signature page at the commencement of the job or start of each shift and signs off the signature page at the end of the job or end of each shift.

2.23 SAFE PERSON, PROCESS, PLACE - STOP

A personal safety check, completed by an individual at the job site, which identifies hazards and encourages review of risks before carrying out a task which focuses on 3 fundamental questions?

1. What am I about to do?
2. What can go wrong?
3. What can I do to prevent it going wrong?

2.24 MASTER ISOLATION WORK PACK

The Master Isolation Work Pack KHP-SF-OHS-070-05 consists of a Master Isolation Work Pack document which registers all permit linked to the Master Isolation Permit. Isolation checklist marked up PID's and work list for permits are part of the Master Isolation Permit package.

2.25 WORK PERMIT

Written authorisation issued by a Permit Authority that identifies work that may be carried out provided all precautions specified in this written authorisation have been complied with. All Work Permits are produced in quadruplicate, with an additional signature page and have a unique Work Permit reference number.

2.26 PERMIT (WHITE OR BLUE COPY)

The white or blue copy of the Permit is the working copy issued to the Permit Holder. This copy is to be maintained at the work site, along with the JSA by the Permit Holder.

2.27 PERMIT (GREEN COPY)

The green copy of the Work Permit is used during the isolation process. It is handed to the electrical, instrument and mechanical isolation authority during isolations and discarded after use.

2.28 PERMIT (YELLOW COPY)

The yellow copy of the Work Permit is to be maintained under the control of the Permit Authority in the permit issuing area, either at the Work Permit Board (if permit does not have any isolations) or at the Permit Lock Box (if permit does have isolations).

2.29 WORK PERMIT BOARD

This board is located in the permit issuing area and is used to display both active and open non-active work permits. Active work permits are identified by having the yellow copy of the work permit on display (these do not involve plant isolations) and open non-active permits are identified by having the white copy of the work permit on display.

2.30 PERMIT REGISTER SHEET

A Kleenheat controlled document, used by the Permit Authority on a daily basis to record Permits issued, the number of personnel working on each permit and closed work permits.

2.31 HOT WORK CERTIFICATE

A Hot Work Certificate is a controlled document that states precautions and gas test results in order to carry out hot work at a specific area safely without risk to people or property.

This certificate is required to be raised whenever Class “A” Hot Work is required. For more details refer to section 7.5.2 and the Hot Work procedure KHP-GM-OHS-070-07.

2.32 WORKING AT HEIGHT CERTIFICATE

A Working at Height Certificate is a controlled document that states precautions while working at heights. For more details refer to section 7.5.6 and the Working At Height procedure WCEF-PD-R&S-0018.

2.33 LIVE WORK ACCESS CERTIFICATE

A Live Work Access Certificate is a controlled document that states precautions while working on energised low and high voltage installations. For more details refer to section 7.5.7 and the Live Work Guide Manual WCEF-GM-ENG-0001.

2.34 BLASTING EQUIPMENT CERTIFICATE

An In-Service Blasting of Pressure Equipment Certificate is a task-specific controlled document that outlines the necessary precautions when blasting pressurised equipment. It includes details such as thickness checks, areas requiring protection, and pre-condition requirements like encapsulation, process isolations, and any special precautions that must be in place before blasting begins.

For all abrasive blasting activities and for AS/NZS 4233 Class B high pressure water blasting operations - exceeding 5600 bar litres per minute (BL/M), a KHP-SF-ENG-000-32 In-Service Blasting of Pressure Equipment Certificate must be obtained from KPF Mechanical Engineering. For further guidance and task risk controls, refer to CSBP-GM-11-031-13 Abrasive Blasting and Spray Painting Safety.

3. TRAINING AND COMPETENCY

Structured training based on National Competency Standards shall be given to all users of the Permit to Work System, including contractors.

Standardised training modules shall be established for the following:

a. Risk Assessment

b. Permit Holder

c. Isolation Authority

d. Permit Authority

Competency records for all personnel shall be maintained on a database.

Employees are required to ensure their core safety competencies are maintained and that their knowledge and skills remain current at all times. Refresher training and/or a verification of

competency (VOC) should be completed prior to a competency expiring or at any lesser interval if determined necessary.

There are exceptions to the above requirement is when a visitor (not inducted / PTW trained) has been requested to perform work within the

1. KPF Permit Area, or
2. KPF Loading Bays during a truck breakdown.

In these situations the visitor is to be escorted at all times by a KPF Production employee. The visitor will complete a JSA and sign onto the Permit as a Team Member if a permit was issued for the task. A Permit Holder or employee is to be assigned to supervise the work and remain with the visitor (not inducted / PTW trained) at all times.

In the event a visitor (not inducted / PTW trained) is required to undertake planned work at KPF, written approval shall be required. Written approval is required from KPF Production & Engineering Manager (or when absent, an appropriately assigned delegate).

During periods of the Manager absence, an appropriate delegate will be assigned; **KPF:** Operations Supt, , Maintenance Supt,. During the period of Manager absence, the delegation of responsibility to these persons listed cannot in turn be further re-delegated to others.

Where isolations are required, the visitor (not inducted / PTW trained) through the permit authoriser will be issued a temporary Personal Danger Lock and 'lock on' to the job with a Personal Danger tag. If a Personal Danger Lock is not available, a YELLOW permit authority lock will be used with a Personal Danger tag.

If the visitor (not inducted / PTW trained) is required to be onsite for unplanned urgent work, the Permit Authority will ensure the visitor is escorted by KPF operations (example truck breakdown) or KPF Maintenance employee (example Solar work).

Permit Authority engagement is required as the workflow is outside of standard PTW conditions.

4. PERMIT OFFICES

4.1 PERMIT ISSUING AREA

The permit issuing area for the Kleenheat Production Facility (KPF) is located next to Central Control Room (CCR) building.

4.2 AREA RESPONSIBILITY AND BATTERY LIMITS

Kleenheat Production Facility (KPF) shall be responsible for issuing Work Permits for all tasks within the boundary area. Where utilities and product process are transferred between Kleenheat Production Facility (KPF) and SUPAGAS, the segregation of these processes will be determined by the battery limit location.

Valves and circuit feeder breakers are installed at the battery limit locations which will isolate the utilities and product supply between the areas.

The areas mentioned below are the battery limits for the following:

- Propane transfer / return line – Domestic Area: PM-17.82 and PM-17.83 discharge valves. Product return line below PV-16.94

- Electrical Supply – KPF CCR HV Room
- Fire Water – **1)** Fire Water Pump House: East side of pump house. **2)** Domestic Area: South/East of SV-18.07
- Flare – Flare Separator Area: North side of mini LNG plant (SUPAGAS will have their own recovery system in 2025)

Before commencing work on any process or utility pipes, the area responsible for the maintenance task will need to discuss the required isolations and safety considerations within the affected plant either upstream or downstream of the battery limit valves.

If the responsible area requires work and with battery limit isolations, the affected area will be contacted to discuss the isolations and process disruptions. This is to ensure the affected area has the knowledge of the task before isolating and placing lock and tags on the affected battery limit valve(s). The area issuing the permit will keep the keys locked in the lock box till the job is completed.

4.2.1 Preparation Process – Work affecting both areas

1. KPF and SUPAGAS to discuss the job if it involves:

   i. a process disruption and / or

   ii. isolating a battery limit utility or product valve causing a disruption.

2. KPF and SUPAGAS to discuss the commissioning process to avoid pipe and equipment damage.

3. The responsible area will develop an Isolation Checklist and must be reviewed by both parties (KPF and SUPAGAS).

4. The responsible area will place their locks and tags on the battery limit valve(s) stated on the isolation checklist. (This will also apply to electrical isolations)

5. The keys will be locked in the responsible area permit lock box till the job is completed.

6. Once the work is completed, both parties (KPF and SUPAGAS) will discuss the agreed commissioning process before removing the locks, tags and normalising the isolations.

5. RESPONSIBILITIES

5.1 PERMIT AUTHORITY

Any person authorised by the KPF management and completed the Permit Authority training, is to be responsible for the issuing of permits and the coordination of all activities within the Permit Area. The Permit Authority is a person who has been authorised to issue Permits for a specific building, area, plant or section of plant for which they have been trained, assessed and deemed competent in:

- the work environment
- process and area related hazards
- isolation requirements for specific plant or equipment
- as an Isolating Authority, and
- to authorise permits as described in this document

The Permit Authority is responsible for:

- Clarifying the exact scope of work with the Permit Holder.
- Accepting requests for Permits from Permit Holders and agreeing to the final set of hazard controls for the area to be made safe for a specific scope of work.
- Ensuring that JSAs have been completed by the Permit Holder and Team Members (if more than one person working on the task).
- Endorsing JSAs out of hours, if required.
- Implementing the Permit hazard controls defined in the Permit and Certificates.
- When the Permit involves isolation of energy as a hazard control - authorises the isolations for the specific scope of work.
- Confirming that all agreed hazard controls have been implemented and all necessary documentation has been signed off by the correct authorised personnel.
    - If the DCS / Delta V requires a download, a Manager's approval attached to the JSA / Work Order / Risk Assessment is required to allow for the download to occur.
- Confirming with the permit holder that the work site is safe for work and that operational activities do not compromise safety in the work area.
- Briefing the Permit Holder on the hazard controls in place.
- Authorising the issue of the Permit and if required, isolations and certificates.
- Ensuring an operator is standing by prior to breaking into the system (first break)
- Revalidating the Permit at recommencement of work.
- Managing the Permit Authority's locks and keys including cross checking of the isolation key number against the key referred to on the Permit when locking the Permit lock box with the Permit Authority lock (No tag is required with the Permit Authority lock when the permit is ready for issuing or has been issued. Isolation or De-isolation In Progress tags are required during the isolation / de-isolation process).
- Managing the storage of isolation locks and keys.
- Being aware of the work being carried out in the plant and any interactions from adjacent work activities or hazards.
- Ensure all certificates are correctly cross referenced to the Permit.
- Ensuring copies of all Permits and associated documentation are maintained by the Permit Authority on the Permit Boards.
- Maintaining and updating the Permit Register.
- Providing briefing and handing-over the control of active Permits to oncoming shift Permit Authority.
- Initiating removal of hazard controls following hand back of a Permit.
- Authorising closure of the Permit by signing off all copies of the Permit and the Permit Register.
- Filing Permit documentation in compliance with Kleenheat Record Keeping, as per Section 10.
- When issuing multiple permits to a Permit Holder, precise details of jobs over the next 2-hour period must be discussed and agreed before commencing work. This is to ensure the equipment or instruments worked on are still in a safe state or requires operations intervention before carrying out maintenance work.
- Managing the Authorisation of Removing a Personal Danger Lock document process (Form: KHP-SF-OHS-070-01).

Note:	The permit holder and permit authoriser must not to be the same person. An exception is required for the camera permit as shift controllers may need to take photos outside normal business hours.

5.2 ISOLATION AUTHORITY

The Isolation Authority is a person authorised by the KPF management and completed the Permit Isolation training to isolate and remove isolations from the plant, equipment or systems for which they have been trained, assessed and deemed competent. Assuming that all training and competencies can be verified, all combinations of roles within the Permit to Work System are allowed except that the Isolation Authority cannot be the same person as the Isolation Reviewer. A Permit Authority who is also trained as an Isolation Authority can conduct the isolations for a permit.

Competency must be able to be verified by training records:

- To be able to perform and prove isolations.
- Knowledge of the isolation requirements for specific plant or equipment.
- Deemed as competent to isolate as described in this document.

The Isolating Authority is responsible for:

- Developing the Non-Standard Isolation Checklist and marked up PID's and assisting the Permit Authority to do so.
- Printing Standard Isolation Checklist and PIDs
- Preparing the isolation tags and locks.

Note:	The person who develops the Non Standard Isolation Checklist cannot be the person who validates the isolation list for the appropriate Scope of Work. This is the role of a different Isolation Authority being responsible as a Reviewer.

- Establishing isolations of plant or equipment according to the Isolation list to prevent inadvertent re-energisation which may cause injury to others or damage to plant or equipment.
- Confirming the isolations where possible by conducting a 'Try Step' or a 'Test step' to verify that a zero-energy state exists (in conjunction with Control Room operators where DCS input is required).
- Tagging all isolation points using either Danger Do Not Operate Tag, Master Isolation Danger Do Not Operate Tag or Confine Space Entry Tag and referencing on the tag:
    1. Permit number,
    2. the date of the isolation, and
    3. the time of isolation, when using a Master Isolation Tag.
- Isolating with a lock and tag then placing the key in the relevant Permit lock box and informing the Permit Authority, who then immediately locks the lock box. Until the lock box is locked by the Permit Authority the Isolating Authority is responsible for the key.
- De-isolating equipment according to Permit Authority requirements, when authorised to do so.
- Maintain housekeeping in the lock and tag storage area

5.3 ISOLATION REVIEWER

The Isolation Reviewer will have the same authorisation and competency as Isolation Authority, however, they are responsible for:

- When a non-standard isolation checklist has been created, before it becomes a working document, it must be reviewed and signed by a different isolation authority known as a reviewer.
- Provide reviewed isolation list to Operations Supervisor
- Verifying that isolation of energies according to the requirements of the non-standard isolation checklist will generate a safe situation for the scope of work nominated.
- Signing on the non-standard isolation checklist that the isolation is appropriate.

Note:	For Standard Isolation Checklists, the isolations will already have been reviewed and as such will only require the authorisation by the Permit Authority.

5.4 PERMIT HOLDER

The Permit Holder is a person authorised by the KPF management and completed the Permit Holder training to be responsible for the task being done at all times during the validity of the Permit. The Permit Holder role can be transferred to another qualified Permit Holder during the task.

Team members will sign onto the Permit and have the same responsibilities as all other work permits.

Competency required:

- Knowledge of the Permit to Work System as described in this document.
- Passed the competency assessment connected to the Permit Holder training.
- Specific skills related to the task being performed (e.g.: High Voltage, Hot Work, Confined Space Entry, Working at Heights, Live Work Access etc.).
- Knowledge of hazard control requirements for the Permit and associated Certificates, if applicable, that will apply to the task.
- Knowledge of the task to be completed as per the scope of work.

The Permit Holder is responsible for:
Presenting to the Permit Authority a scope of work that describes at least:

- what is going to be done
- where it will be done (equipment number if applicable), and
- How long it will take.

Note:	The scope of work may be a work order or scope of work under a contract, but must contain the items listed above.

- Inspecting the work site, understanding the scope of work before commencing the task.

- Carry out inspection of work area to check that area is safe with no impinging tasks that may affect the work.
- Participating in and understanding the JSA. Ensure the JSA contains specific hazards and controls of that specific area. Preparing a Working at Height / Live Work Access certificate if required and presenting it to the Permit Authority.
- Signing Section 3 – Permit Holder Understand the Work and Accepts the Conditions on the Permit once they understand and accept the extent of hazard controls that have been established and need to be maintained.
- Signing onto the blue copy of the Permit, noting the date and time. This indicates that the Permit Holder will commence working on the task.
- Briefing team members on the JSA, highlighting hazard controls and signing onto the JSA daily.
- Escort a visitor (not inducted / PTW trained) who has been requested to perform work within the permit area at all times.
- Ensuring a communication radio set is available for use at the work site.
- Check and ensure all permit requirements are completed prior to signing the permit and commencing work.
- Ensuring that the Permit Authority lock secures the isolation lock key before placing own Personal Danger lock with tag on the lock box if the Permit requires isolation.
- Ensuring each team member signs onto the Permit (blue copy) and JSA. Ensures their Personal Danger lock with tag to the correct Permit Lock Box Board lock box in line with this procedure.
- Maintaining the original (white) copy of the Permit and associated documentation at the work site. Documents shall be available to team members at all times.
- Ensure an operator is standing by prior to breaking into the system (first break)
    - The first break process will also be applicable to the Mechanical Isolations and De-Isolation task.
- Ensuring that work performed remains within the defined scope of work.
- Ensure the Fire Watch complies to the Hot Work Certificate requirements including recording gas test results.
- Ceasing work and informing the Permit Authority when any hazard controls have been breached.
- Where necessary, handing over the work activity and Permit to a new Permit Holder at shift change or during work progress. The Permit Holder will be required to sign off the Permit, so that the new Permit Holder can sign onto the Permit.
- Inspecting the work site before commencing / recommencing work and at the end of shift or completion of work.

- Confirming that the work site is left in a clean and safe state when work is completed or at the end of each shift.
- Checking that all team members sign off the blue copy of the Permit and, if required, remove their Personal Danger locks with tags when working on an isolated task.
    - ➢ Reporting to the Permit Authority if a Personal Danger Lock key has been misplaced.
- Signs off the blue copy of the Permit, noting the date and time, when the task is complete or at the end of shift.
- Communicate status of the incomplete task to the Permit Authority, if required.
- When work is complete, handing back the work area by:
    1. Returning the Permit documentation to the Permit Authority.
    2. Providing a briefing on the status of work.
    3. Signing off all copies of the Permit and any certificates associated with the task.

The Permit Holder will normally be a worker under a Permit.

The exception will be in the case of shutdowns where a Permit Holder can be a full-time supervisor of a range of Permits. If a Permit Holder is given authority to hold multiple permits, the Permit Holder and the team member(s) assigned to the job(s), over the first two-hour period, must discuss the job(s) with the Permit Authority before starting each job. This is to ensure the equipment or instruments worked on are still in a safe state or requires operations intervention before carrying out maintenance work. Thereafter, the Permit Holder holding multiple permits must return to the permit office with team members to discuss each new job even though the Permit Holder has been issued with the permit.

As the Permit Holder with multiple permits will not be able to be at all jobs at the same time, the Permit Holder must hand the team member(s) a copy of the permit to ensure the team understands the permit requirements and the ability to confirm the equipment worked on.

If at any point the supervisor needs to become involved in the work, then they will need to lock on to the lock box if isolations are in place for the job.

Note:	The permit holder and permit authoriser must not to be the same person. An exception is required for the camera permit as shift controllers may need to take photos outside normal business hours.

Note:	The exception noted above for shutdown Permit Holders does not apply to Confined Spaces, where the Permit Holder shall always be a worker on the task.

5.5 TEAM MEMBER

A Team Member is the person doing the work supervised by the Permit Holder.

Competency required:

- Trained and deemed competent in the Permit to Work System. (See Section 3 for exceptions.)

The Team Member is responsible for:

- Understanding the job scope and the hazard controls that have been implemented for the defined task.
- Signing, participating in and understanding the JSA. Ensure the JSA contains specific hazards and controls of that specific area. Conduct a STOP, if conditions have changed since you were last at the job site. Signing on and off the blue copy of the Permit.
- Attaching their Personal Danger lock with tag to the Permit lock box on commencement and removing at the end of their shift or job, should the Permit involve isolations. The information on the tag will include the name of the team member, date and Permit number of the task being worked on.
    - Reporting to the Permit Holder and Permit Authority if a Personal Danger Lock key has been misplaced.
- Ensuring that they follow the hazard controls defined in the Permit and associated Certificates, if applicable.
- If taking supervision under a Permit Holder holding multiple permits, the team member must:
    - Ensure a copy of the permit is available at the work site
    - Discusses the job with the Permit Holder and Permit Authority
    - If required communicate with the panel operator when carrying out the task
- Ensure an operator is standing by prior to breaking into the system (first break)
    - The first break process will also be applicable to the Mechanical Isolations and De-Isolation task.
- Leaving a clean and safe work site.

5.6 STANDBY PERSON

A person appointed by the Permit Holder to assist if an adverse situation was to arise. Duties may include:

- Raising alarm and seeking aid

- Assisting in the use of safety showers
- A spotter while moving equipment, monitoring hot works and working at height activities
- Keeping unnecessary personnel out of the work area

5.7 RESPONSIBLE OFFICER

A Responsible Officer is the Company representative responsible for organising a task and the day to day overall duty of care of the Contractors. More details could be found in the Responsible Officer Health Safety Requirements document WCEF-GM-OHS-040-11.

5.8 ACCOUNTABLE PERSON

An Accountable Person is the Company representative responsible for the Contractors infield duty of care and performance on a day to day basis. More details could be found in the Responsible Officer Health Safety Requirements document WCEF-GM-OHS-040-11.

5.9 FIRE WATCH

A Fire Watch Person is responsible for monitoring and ensuring the effectiveness of risk controls for the Hot Work activity and standing-by at the job site for 1 hour after completing the hot work. More details could be found in the Hot Work Procedure KHP-GM-OHS-070-07.

6. TAG AND LOCKS SYSTEM

6.1 DANGER-DO NOT OPERATE TAG

This tag is attached to each point of electrical, mechanical and process isolation of plant and equipment as detailed on the Work Permit and Electrical Disconnection Work Permit.

The tag must state the relevant Work Permit or Electrical Disconnection Work Permit reference number and date. The tag is locked onto the equipment by the appropriate isolation lock and the equipment must not be operated until the tag has been removed and this can only be done when de-isolation is authorised on the Work Permit or Electrical Disconnection Work Permit.

This tag can only be used with an associated Work Permit or Electrical Disconnection Work Permit.

A black permanent marker must be used to fill out these tags.

When de-isolation is authorised by the Permit Authority, the isolation lock with the accompanying tag must be removed.

6.2 MASTER ISOLATION DANGER DO NOT OPERATE TAGS

A red, white and green tag attached to plant or equipment indicating the boundaries of the master isolation. This is the only tag that can be used in association with a Master Isolation Permit. The tag is locked onto the equipment by the appropriate isolation lock and the equipment must not be operated until the tag has been removed and this can only be done when de-isolation is authorised on the Master Isolation Permit. If the Master Isolation Permit is cancelled all locks with tags must be removed.

The tag must state the relevant Master Isolation Permit reference number, date and time. A black permanent marker must be used to fill out these tags.

6.3 PERSONAL DANGER DO NOT OPERATE TAG

A red, white and black tag similar to the “Danger Do Not Operate” tag is attached to a lock box to indicate that the team member is working on the equipment. These tags are only used for personnel who are locking onto lock boxes with their own personal lock for a Permit that has isolations in place.

The tag must state the name, permit number, date and time. A black permanent marker must be used to fill out these tags.

6.4 OUT OF SERVICE TAG

This tag identifies faulty, unsafe or unserviceable equipment and equipment taken out of service which must not be operated. The tag must be placed on all points of electrical, mechanical and process isolation of the equipment concerned.

The "Out of Service" tag must not be attached to equipment to protect personnel while they are working on that equipment - a "Danger-Do Not Operate" tag must be used for this purpose.

If a Permit with isolations is required to be closed and the equipment is still not available for use, then the equipment still requires to be tagged for unsafe or unserviceable reasons. All "Danger-

Do Not Operate" tags must be replaced with "Out of Service" tags and all isolations are to remain in place.

Equipment tagged "Out of Service" are to have details of the reason for this status entered in the "Out of Service Register" located in the CCR and to be numbered one digit higher than the previous entry. (E.g.: previous entry 26, next entry 27 and so on).

The tag must state the register number, equipment, date and time. A black permanent marker must be used to fill out these tags.

6.5 INFORMATION TAG

This tag is used to indicate (communicate) an abnormal but not unsafe status of plant or equipment. The tagged item may be operated safely after due consideration of the information contained on the tag.

An "Information" tag must never be used in lieu of a "Danger-Do Not Operate" or an "Out of Service" tag.

Should the condition of the item become unsafe, or inoperative, an "Out of Service" tag must be installed.

6.6 CONFINED SPACE ENTRY TAG

A purple and black tag is attached to plant or equipment indicating the boundaries of the confined space entry isolations. This is the only tag that can be used in association with confined space entry certificate. If the CSE is cancelled all locks with tags must be removed.

The tag must state the CSE number, date and time. A black permanent marker must be used to fill out these tags.

6.7 ISOLATION LOCKS

Isolation locks are used to physically lock the relevant isolation point in a desired position (Opened / Closed).

A yellow lock is used by the KPF Permit Authority to lock onto lock boxes which have isolations associated with the Permit (Note: these are keyed alike locks).

A red personal danger lock is used by Permit Holders and Team Members to lock onto isolated Permit lock boxes when commencing and for the duration of a task. If a lock is required to be cut from the lock box, the Authorisation of Removing a Personal Danger Lock document process must be used. (Form: KHP-SF-OHS-070-01).

A blue isolation lock is used by an Isolation Authority to carry out isolations in the field (tagged and locked).

A green lock is used by an Isolation Authority to carry out Instrument/Electrical (Inlec) isolations.

An orange high voltage lock is used by authorised High Voltage Switching personnel to control access to high voltage and switches (Note: these are keyed alike locks).

6.8 ISOLATIONS / DE-ISOLATION IN PROGRESS TAGS

The red and orange tags have been developed to provide a visual aid, in order to help identify Permits or Master Isolation Permits on the Permit lockbox board that have isolations or de-isolations that are still in progress, where therefore, the Permit cannot be issued or closed.

The Permit Authority shall always use these tags for Permits requiring isolations or de-isolations. These tags shall always be accompanied by a Permit Authority Yellow Lock when in use.

The red Isolations in Progress Tag shall be applied to the Permit lockbox by the Permit Authority upon authorising isolations. It shall only be removed from the Permit lockbox once isolations have been completed and signed off.

The orange De-Isolations in Progress Tag shall be applied to the Permit lockbox by the Permit Authority upon authorising de-isolations. It shall only be removed from the Permit lockbox once de-isolations have been completed and signed off.

Permits requiring Permit Holder Isolations do not require the use of these red Isolations in Progress or orange De-Isolations in progress tags.

During Mechanical isolations, Personal Danger Lock and Tags shall be attached to a Permit lockbox which has these red Isolations in Progress Tag or orange De-Isolations in Progress Tag.

6.9 ADDITIONAL LOCK OUT DEVICES

6.9.1 CAR SEAL LOCK

The Green and Red disposable car seal locks are not to be used for any standard isolation or attached to any permit tags in the plant. They are to be used on valves which are required to be locked in the OPEN (Green) OR CLOSED (Red) positions in lieu of chains. These valves are identified by Lock open / lock closed tags attached to the valve. The locks are kept in a plastic tool box with two side cutters in the permit office.

Yellow hi visible UV resistant car seal locks will be used on all locked open fire water ring main valves and hydrants.

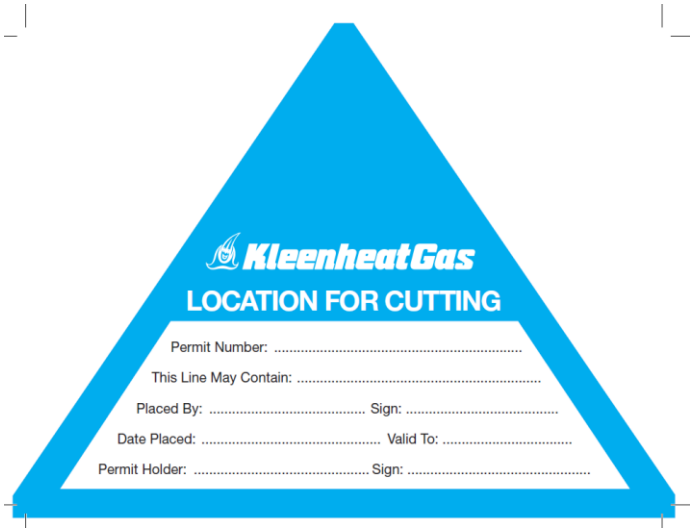
6.9.2 LOCK OUT DEVICES

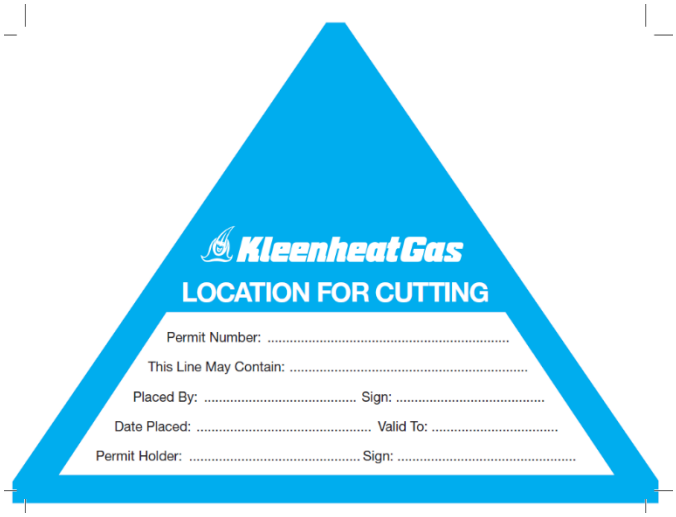
These devices are used to isolate valves in the plant and are used in preference to wire cable and lock. Pictured below are the various types.




6.10 LOCATION FOR CUTTING TAG

This tag is used to identify the exact location of the break in before commencing cutting, hot tapping or drilling into a hazardous pipeline. See section 13.3 for more details.





7. PERMIT SYSTEM

7.1 OBJECTIVES

The Permit to Work procedure is intended to ensure the highest level of personnel safety for all personnel working on, or within a processing facility (whether operating or not).

The Objectives of the Permit to Work System are:

a) To provide instructions to ensure a safe system of work is employed and that the necessary precautions are given due consideration and are implemented.

b) To ensure the proper authorisation of all work performed in the Permit Area.

c) To make clear to the Permit Holder and Team Members, the potential risks involved and the precautions necessary to minimise those risks.

d) To ensure that the Permit Authority is aware of the number and location of all personnel working in the Permit Area, and of all the tasks in progress.

e) To ensure a clear handover of equipment between departments.

f) The sequence set out on the Permit and Master Isolation Permit must be followed

7.2 AREA CLASSIFICATION

To maintain a safe workplace without unreasonable restriction, the following area classifications shall be designated:

7.2.1 KPF Non-Permit Area

The "Non-Permit Area" consists of the areas within the CONTROLLED AREA, it includes:

- Security Gatehouse
- Administration Buildings
- Maintenance Building, Bottle Storage Area and Oil Storage Area
- Training Centres
- Laboratory and Residue Testing Hut
- Perimeter road to the fire reservoir, excluding Domestic Storage and Loading Area
- Construction yard

ALL WORK WITHIN A NON-PERMIT AREA THAT REQUIRES ANY CERTIFICATE AND ALL CRANE LIFTS MUST HAVE AN AUTHORISED PERMIT AND JSA.

7.2.2 KPF Permit Area

The Permit Area consists of:-

- All areas within the CONTROLLED AREA with the exception of those areas defined as Non-Permit Areas.
- The Ship Loading Trolley.
- The Export Loading system including:
  - Jetty Fire Pump, piping and monitors
  - Jetty Electrical Equipment
  - Pig Launching and Receiving facilities

- 6", 10" and 16" export loading lines and associated equipment
- Jetty Route Station

ALL WORK WITHIN A PERMIT AREA REQUIRES AN AUTHORISED PERMIT AND JSA.

There are a number of tasks deemed to be normal operational activities that do not require a Permit to be carried out. They include (but are not limited to) the following:

- Loading and unloading of LPG road tankers at the Domestic Loading Bays
- Loading of LNG tankers at the Domestic Loading Bays

7.3 PERMITS

A Permit must be obtained prior to commencement of work in the Permit Area and can be obtained from the Permit Authority in the permit issuing area. Refer to section 4.1.

The Permit Authority will decide the type of permit to be issued and make the necessary arrangements to ensure the work area is safe.

Requests for Permits should, where possible, be made one day in advance of the date on which the task is to be carried out. This will assist in minimising delay to the commencement of scheduled task.

The person who signs and receives the permit shall be deemed the Permit Holder and shall be responsible for ensuring adherence to the conditions identified on the Permit.

7.4 PERMIT VALIDITY

Any permit issued will be normally valid for the day of issue only and must be returned to the permit issuing office by the close of work on that day. If circumstances dictate that the work is required to continue into the next shift (1800 hrs to 0600 hrs), the permit must be revalidated by the Permit Authority.

All Permits will be valid for the duration of the task discussed between the Permit Authority and Permit Holder. Depending on the job, a maximum of one calendar month from the date of issue will be permitted. Permits can only be revalidated when the conditions of work are the same as those originally on the permit. Should the conditions of work change, the original permit must be cancelled and a new permit issued.

If the Permit with isolations is required to be continued after the validity period, the Permit Authority shall:

a. Ensure the work conditions are the same as stated in the Permit
b. Inform the Operation Supervisor on extending the expiry date on the Permit
c. Change the end valid date on the Work Permit.
d. Initial the change date
e. Revalidate the Permit

7.5 CATEGORIES OF WORK

Work to be performed in the Permit Area will fall into the following categories.

7.5.1 Cold Work

Any work which will not produce a source of ignition (i.e. flame, hot surface, sparks) of sufficient temperature to ignite any flammable material.

Typical examples of cold work include, but are not limited to the following:

- Bolting or unbolting of flanges.
- Repacking leaking glands on valves.
- Pump seal removal/replacement.
- Removal/replacement of strainers.

Note: All open ended piping arising during the task in progress shall be blanked or capped until the system can be returned to normal.

7.5.2 Hot Work

Potentially Hazardous Hot Work (Class "A" Hot Work)

Any hot work in the Permit Area that **will** generate sparks or heat of sufficient intensity to ignite flammable gases, liquids, solids, dusts, fibres or other materials.

Typical examples of Class "A" Hot Work include, but are not limited to the following:

- All Welding activities
- Oxy/Acetylene cutting.
- Soldering.
- Sand or Grit Blasting.
- Concrete Chipping / Cutting
- Grinding.
- Cad-Welding.

- Non-Intrinsically Safe Electrical Equipment that will generate heat.
- Non-Intrinsically Safe Electrical Equipment or electrical tools placed in a vessel or equipment that has been in contact with the process and/or contaminated with any other combustible or flammable material.

For more details on nitrogen purging requirements before Class "A" Hot Work and standing-by at the job site after completing hot work activity, refer to the Hot Work procedure KHP-GM-OHS-070-07 Section 8.4.3 Gas Testing and Monitoring and Section 5.5 Fire Watch.

ALL WORK THAT REQUIRES ANY CERTIFICATE MUST HAVE AN AUTHORISED PERMIT AND JSA

Low Risk Hot Work (Class "B" Hot Work)

Any hot work in the Permit Area that has the potential to create heat that **may not** be of sufficient heat intensity to ignite flammable gases, liquids, solids, dusts, fibres or other materials.

Typical examples of Class "B" Hot Work include, but are not limited to the following:

- Vehicles used for the job
- Grass cutting
- Battery drills / screwdrivers
- Use of Electrical Tools/Meters that may not generate sparks and heat. (Instrumentation meters)
- Work on live Electrical Equipment
- Electronically Operated Cameras
- X-Ray Generating Equipment

- Use of any Non-Intrinsically Safe Electrical Equipment that may not generate heat
- Use of Internal Combustion Engines (mobile or stationary)

All hot work shall be conducted in accordance with the Hot Work Procedure (KHP-GM-OHS-070-07).

⚠ WARNING

The Permit Authority must check the Permit Register to ensure any other active or revalidated permits will not change the risk assessment that could cause harm to individuals and environment or damage property. (Example: Before a lab sampling permit is released, a detail discussion and permit checks must be carried out if a permit with either Class 'A' or 'B' Hot Work is active in the plant. Sampling could be considered in areas away from the Hot Work vicinity.)

7.5.2.1 Restrictions Due to Fire Pump Outages

When the firewater system is not fully operational the following restrictions apply to Hot Work and Domestic loading:

Pump out of service	Number pumps available	Restrictions:
Either pump having minor work done	1	If either pump is expected to be out of service, then no restrictions are required: Hot Work, domestic loading and export to domestic product transfers permitted.
Electric Pump (PM17.25) See Appendix 1	1	If the electric pump is expected to be out of service, then the diesel pump shall be tested and confirmed fit for use prior to work and no restrictions are required: Hot Work, domestic loading and export to domestic product transfers permitted. *Note: If the diesel fire pump fails, then the restriction for 0 pumps applies.*
Diesel Pump (PM17.26) See Appendix 1	1	If the diesel pump is expected to be out of service, then the electric pump shall be tested and confirmed fit for use prior to the work and no restrictions are required: Hot Work, domestic loading and export to domestic product transfers permitted. *Note: If running on electric fire pump only and there is a power outage, then the restriction for 0 pumps applies. The likelihood of a power outage is considered to be low.*
Both pumps: Electric Pump (PM17.25) and	0	If both pumps are out of service, then the following restrictions shall be applied: Suspend domestic loading / transfers and **Class "A" Hot Works**.

Diesel Pump (PM17.26)		***Class "B" Hot Works** will be permitted. Restrictions can be lifted when 1 pump is available and fit for use. ***Note:** Inform SUPAGAS the expected out of service duration.*

Examples of **Class "A" Hot Work** where ignition sources are anticipated include;

- Welding.
- Grinding
- Loading from Domestic Storage (Loading Bay Operations).
- Sandblasting

Examples of permitted **Class "B" Hot Work** activities include;

- Use of battery operated equipment.
- Vehicle access.
- Operation of mobile plant such as air compressors, generators, cranes and the like.

7.5.2.2 Restrictions due to power supply interruptions (Black Site)

In the event of a Black Site/power outage and the diesel pump is not available the restriction for 0 pumps (as described in section 7.5.2.1) applies until the site's power supply is restored.

7.5.2.3 DFES Restrictions -Total Fire Ban

A total fire ban (TFB) is declared because of extreme weather conditions. It is declared by the Minister for Emergency Services on advice from DFES. It prohibits the lighting of any fires in open air includes incinerators, welding, grinding, soldering or gas cutting. A TFB is effective from midnight for 24 hours. KHG has an approved exemption- it covers the entire gas processing facility and all employees and contractors. This includes:

- Heaters and heating processes
- Hot works (welding, cutting, grinding and heating)
- Gas flares
- Standby generators, turbines and diesel fire water pumps

Permits requirements for Hot Work on a TFB day

- An area of 5 meters radius SHALL be free of flammable materials immediately around the hot work area
- Welding screens / spark containment and wetting area SHALL be used to reduce sparks if welding or cutting or grinding is taking place.
- 2 x fire extinguishers SHALL be in the immediate area.

(Current welding procedures and practices in designated fabrication /welding areas are acceptable.

The roller door in the fabrication workshop shall remain down when working during a TFB)

- Hot work (as defined by DFES: generating heat, sparks, flame) outside the designated fabrication workshop SHALL involve 2 people. One person doing the main component of the job – welding, grinding etc. The other person may assist with preparation but mainly acts a fire watch during the hot work task (must be trained in extinguisher use and able to raise the alarm)

- Immediately following the cessation of hot work within the permit area, 2 persons SHALL remain at the work site after the Hot Work is completed for at least 1 hour and potentially longer based on the risk assessment to ensure the site remains safe (clean up and demobilising can be done during this period)

Catastrophic fire conditions issued by Bureau of Meteorology

The TFB exemption does not apply when the fire danger forecast issued by the Bureau of Meteorology in Perth in respect of the locality is “catastrophic”. No Hot Work is permitted. Site flaring is exempt, due to business-as-usual operating principles.

7.5.3 Confined Space Entry

Australian Standard (AS) 2865 Confined Space, defines a confined space as an enclosed or partially enclosed space that is not intended or designed primarily for human occupancy, within which there is a risk of one or more of the following:

a. An oxygen concentration outside the safe oxygen range.

b. A concentration of airborne contaminant that may cause impairment, loss of consciousness or asphyxiation.

c. A concentration of flammable airborne contaminant that may cause injury from fire or explosion.

d. Engulfment in a stored free-flowing solid or a rising level of liquid that may cause suffocation or drowning.

Note: All Confined Spaces shall be sign posted, once opened, with the sign “CONFINED SPACE - ENTRY BY PERMIT ONLY”.

At Kleenheat Production Facility, Confined Spaces may include, but are not limited to:

1. Storage tanks, road tankers, isotainers, process vessels, process drums and heaters
2. Tank-like compartments, usually having only an access hole for entry.
3. Open-topped spaces such as pump pits and bund spaces, which are not subject to good natural ventilation.
4. Pipes, tunnels, ducts, basements with restricted access and similar structures.

Note: Entry into a Confined Space is when a person’s head or upper body is within the boundary of the confined space. Note that inserting an arm for the purpose of atmospheric testing is not considered as entry to a confined space.

Note: Roof spaces or ceilings are not classified as Confined Spaces.

A CONFINED SPACE ENTRY CERTIFICATE IS REQUIRED FOR ALL CONFINED SPACE ENTRIES.

7.5.4 Excavation / Penetration

Excavation is defined as work by hand or mechanical means that disturbs the soil or other surface to a depth greater than 150 mm. The work includes:

▪ Digging holes or trenches ▪ Cutting concrete	▪ Driving piles, posts or spikes ▪ Driving of earthing electrodes

Penetration is defined as work including demolishing, removing, drilling, cutting or otherwise penetrating any floor slab, wall, ceiling, roof, partition or surface where the opposite side is not visible and which may contain electrical cables.

This work is always accompanied by a Permit and Excavation or Penetration Certificate.

Excavation / Penetration Certificates are administered by the Engineering Department. The original shall be kept with its associated Permit at all times and the copy shall be kept by the Engineering Department.

Refer to WesCEF Excavation and Penetrations documents for more information.

Note: Care shall be taken in the planning of work within excavations as all excavations that will be more than 1.5 metres deep or where a person will have their head below ground level, while working in the excavation, will be considered a confined space.

AN EXCAVATION / PENETRATION CERTIFICATE IS REQUIRED FOR ALL EXCAVATION / PENETRATION WORK INCLUDING NON-PERMIT AREAS.

7.5.5 Emergency Situations – Both Fire Water Pumps Isolated

When both fire water pumps are isolated for a task, the isolation keys must be kept in a portable Permit Lock Box Board in the immediate area.

All personnel working on the task will place their personnel danger locks with tags on this lock box.

If there is an emergency and the fire water pumps are required to be activated, personnel are to remove locks from the lock box to access the isolation key. A verbal authorisation from the Permit Authority will be given via two-way radio to authorise the de-isolation. The electrician will perform the de-isolation once this verbal authorisation has been given.

The isolation key for the electric fire water pump will be returned to the Central Control Room (CCR), for HV de-isolate.

In the event that the isolation keys for the fire water pumps cannot be accessed due to the emergency situation, the isolation locks can be cut off using bolt cutters once verbal confirmation has been received from the Permit Authority.

Important: Both fire water pumps should not go under repair / PPM maintenance at the same time as this will prevent a quick turnaround during an emergency.

7.5.6 Working at Height

"Work at Height" is defined as whenever people are at risk of falling from, into or through one level to another.

A 'Working at Height Certificate' shall be issued for tasks that meet the following criteria:

- A person's feet are greater than 1.8m above the ground and there are no fixed engineering controls in place (e.g. fixed handrails) which prevent the person falling, excluding fixed plant ladders,
- Using mechanical device to lift a person (e.g. elevated work platform, scissor lift, crane basket, forklift man-cage etc.),
- Removing flooring or handrails,
- Conducting work on or walking on roofs of any construction, or
- Where determined to be applicable by a risk assessment.

KPF Operations will conduct a risk assessment before commencement of work any time there is a risk of a fall.

Any job carried out above ground level must be risk assessed.

For more details refer to the Working at Height procedure WCEF-PD-R&S-0018 and certificate KHO-SF-OHS-070-16.

ALL WORK THAT REQUIRES ANY CERTIFICATE AND CRANE LIFTS MUST HAVE AN AUTHORISED PERMIT AND JSA

7.5.7 Live Work Access

Live Work Access Certificates are required for live electrical work on energised low and high voltage installations where the electric shock risk and arc flash hazard are assessed as Medium or High (refer to Live Work Guide Manual WCEF-GM-ENG-0001).

A Live Work Access Certificate exists in triplicate (white, yellow, pink) and has a COLOUR edge. It shall be kept with its associated Work Permit at all times i.e. white copy with Permit Holder, yellow copy on the Permit Board.

7.6 PERMIT DOCUMENTATION PROCEDURES

7.6.1 Rules Applying to Work Permits and Electrical Disconnection Work Permits

All Work Permits and Electrical Disconnection Work Permits are produced with an additional signature page and have a unique Permit reference number.

The Work Permit and Electrical Disconnection Work Permit copies are located as follows:

- Original Work Permit (white copy) or original Electrical Disconnection Work Permit (blue copy) is maintained by the Permit Holder along with the JSA and if required the associated originals of the Certificate at the worksite while the task is in progress.

- Duplicate yellow copy of the Work Permit / Electrical Disconnection Work Permit remains in the control of the Permit Authority and is located on the Work Permit Board or Permit Lock Box Board with copies of any associated Certificates, standard isolation checklist and drawings and relevant documentation for the task.
- The duplicate green copy of the Work Permit / Electrical Disconnection Work Permit is the isolation copy and is issued by the Permit Authority for Electrical and Instrumentation equipment isolations. After completing the isolations, the Isolation Authority and a field operator will carry out a try step at field to ensure the correct equipment has been isolated where possible. The isolation authority returns to the permit issuing area, records all the isolations in their relevant discipline and signs the white, yellow, pink and blue copies. If no isolations are required for the electrical / instrumentation or mechanical department, the green copy is not required and can be discarded. Where process isolations require the removal of spools or the swinging of blanks and involves hot work (such as usage of cranes, forklifts or generators), this work shall be undertaken under a separate Work Permit with the scope of work stating “Carry out isolations/De-isolations” prior to the initiation of a Work Permit. The Isolation Authority returns to the permit issuing area, records all the isolations in their relevant discipline and signs the white, yellow and pink copies.
- The Permit Holder signs on and off the Signature page (blue) at the commencement and end of each shift in the presence of the Permit Authority. The Permit Holder ensures that all team members sign on and off the Signature page before commencing work and at the completion of the working day.
- Certificates relating to the task (i.e. excavation certificate maps & drawing of excavation) contain job specific detail and should be kept with the Permit Holder.

Work Permit and Electrical Disconnection Work Permit documentation requirements:

1. All Yes/No questions must be answered and indicated by an "X" or ticked in the appropriate box.
2. Any section 2A to 2E that is not required will be crossed and marked "Not Applicable" (or N/A) by the Permit Authority.
3. Permit Holder and Team members name working under the Permit must be printed and signed.
4. Copies of work permits must be retained for two years, after which they may be disposed of.
5. All sections must be completed in numerical order. No section can be left incomplete.

7.6.2 Permit Area Surveillance

The Permit Authority or their delegate shall maintain regular surveillance of the work area.

Should unforeseen developments render the permit conditions invalid (i.e. change to work scope, plant upsets, etc), the Permit Authority or their delegate may withdraw the permit and all the work detailed on the Permit must stop. The Permit Holder should leave the work area in a safe condition.

A new Permit shall then be requested, taking into consideration the changed circumstances.

7.6.3 Emergency Sirens

With the exception of the routine siren tests which take place at 11.30 hours on each Wednesday, the sounding of the Fire or Gas alarm automatically suspends all permits.

The Permit Holder must cease work immediately, shut down portable machinery and proceed to a muster point.

After the All-Clear siren has sounded, the Permit Holder must ensure the permit is re-validated by the Permit Authority and all Team Members re-sign on to the Blue Copy before the task can recommence.

7.6.4 Work Permit Sections Detailed Description

SECTION 1 - APPLICATION FOR WORK PERMIT

In this section, the Permit Authority will discuss the job details, duration of the permit and records:

Date of Issue
Permit Valid Until
Company and Designation of the PH
Description of work to be carried out
Equipment to be worked on
Type of tools to be used
Master permit number if the permit is being used in a Master Permit work pack
Any additional comments

Note:	If a DCS or Delta V download is required, the Operations Superintendent must be informed before issuing the permit. Downloads could cause a plant shutdown.

SECTION 2 - PREPARATION REQUIRED

The Permit Authority assesses any risks associated with the scope of work and specifies the operational preparations, isolations, hot works, special precautions and any certificates that may be required:

Confined Space Certificate
Excavation / Penetration / Blasting Certificate
HV Switching Program Certificate
Working at Height Certificate
Live Work Access Certificate

These are recorded by the Permit Authority who completes Section 2. If the DCS / Delta V require a download, a Manager's approval attached to the JSA / Work Order / Risk Assessment is required to allow for the download to occur.

Depending on the nature of the hot work activity, both Class "A" and Class "B" hot work could be applicable requiring a Hot Work Certificate and Section 2E completed.

If equipment isolation is required, the Permit Authority proceeds to the relevant discipline (2A, 2B,2C or 2D), completes the required section(s) and arranges for the necessary isolations to be carried out in the alphabetical order of Section 2 (i.e. 2A before 2B etc).

If breaking into the process, the work permit must state that an operator must be standing by prior to the first break.

Note: If an electrical disconnection is required, the Electrical Disconnection Work Permit is required to be used.

Each Isolation section allows for the recording of the following:

- Number of Locks used
- Lock Set number

SECTION 2A - OPERATIONAL ISOLATION

If operational isolation is required, this is identified in section 2A. The Permit Authority specifies the type of operational isolation required using a Standard Isolation Checklists and marked up PIDs. Non Standard Isolation Checklist and PIDs must be reviewed by an Isolation Reviewer. (Note: The system must be prepared for maintenance which includes hydrocarbon freeing and de-pressurising) The required isolations are then carried out by the Isolation Authority and update the isolation checklist with the Danger Do Not Operate Tag reference number. The isolation checklist must be dated and signed on each isolation carried out. Having carried out the isolation, the Isolation Authority returns to the permit issuing area, prints and signs their name to confirm the isolations as complete in section 2A and records the number of locks, tags and lock set number used on the original work permit and the copies. The Isolation Authority or Permit Authority then places the isolation key in the assigned lock box which is then locked by the Permit Authority.

Note: If the Permit Authority is not available to place the Permit Authority lock on the lock box, the Isolation Authority must maintain the isolation key under their control until such time that the Permit Authority can secure the key(s) in lock box with a Permit Authority lock.

SECTION 2B - ELECTRICAL ISOLATION

If electrical isolation is required, this is identified in section 2B. The Isolation Authority is issued with the green copy of the work permit bearing the signature of the Permit Authority (and the operational isolation completion details, if applicable) as authorisation to carry out the isolation. The original work permit remains in control of the Permit Authority at the permit issuing area.

Having carried out the isolation(s), the Isolation Authority and a field operator will carry out a try step at field to ensure the correct equipment has been isolated where possible. The isolation authority will return to the permit issuing area, handover the isolation key of the electrical isolation locks to the Permit Authority. The Isolation Authority then prints and signs their name in the Completed section, recording the number of locks and tags and lock set number used on the original work permit and the copies. If an isolation checklist was used, the Isolation Authority will be required to sign the isolation checklist and update the isolation checklist with the Danger Do Not Operate Tag reference number.

Note: If an electrical disconnection is required, the Electrical Disconnection Work Permit is required to be used.

Note: If the Permit Authority is not available to place the Permit Authority lock on the lock box, the Isolation Authority must maintain the isolation key under their control until

such time that the Permit Authority can secure the key(s) in lock box with a Permit Authority lock.

The Permit Authority locks the electrical isolation key into the correct lock box. If isolations are not required for instrumentation or mechanical, the green copy can be discarded.

SECTION 2C - INSTRUMENTATION ISOLATION

If instrumentation isolation is required this is identified in section 2C. The Isolation Authority is issued with the green copy of the work permit bearing the signature of the Permit Authority (and the operational and electrical isolation completion details, if applicable) as authorisation to carry out the isolation. The original work permit remains in place at the permit issuing area. Having carried out the isolation, the Isolation Authority returns to the permit issuing area, prints and signs their name in the Completed by section, recording the number of locks and tags and lock set number used on the original work permit and the copies. If an isolation checklist was used, Isolation Authority may be required to sign the isolation checklist and update the isolation checklist with the Danger Do Not Operate Tag reference number. The Isolation Authority then places the isolation key in the assigned lock box which is then locked by the Permit Authority.

Note: If the Permit Authority is not available to place the Permit Authority lock on the lock box, the Isolation Authority will maintain the isolation key under their control until such time that the Permit Authority has placed their lock on the lock box.

If instrumentation disconnection is required the Permit Authority will tick the “YES” box authorising the instrumentation disconnection for the Isolation Authority to carry out the disconnection. The original Work Permit remains in place at the permit issuing area. Having carried out the disconnection, the Isolation Authority returns to the permit issuing area, prints and signs their name in the Completed by section, recording the number of locks and tags and lock set number used on the original work permit and the copies. The Isolation Authority then places the isolation key in the assigned lock box which is then locked by the Permit Authority.

If fusible loop disconnection or relocation is required, the Permit Authority will tick the “YES” box and the fusible loop register must be updated.

Note: If the Permit Authority is not available to place the Permit Authority lock on the lock box, the Isolation Authority must maintain the isolation key under their control until such time that the Permit Authority can secure the key(s) in lock box with a Permit Authority lock.

If no mechanical isolations are required, the green copy can now be discarded.

SECTION 2D - MECHANICAL ISOLATION

If mechanical isolation is required, this can be carried out under section 2D. The Permit Authority specifies the type/s of mechanical isolation required by use of spade/ blanking as stated in the isolation checklist and blind list drawing. The Permit Authority confirms that the operational and if required electrical and / or instrumentation isolations are already in place.

As this process requires breaking into process, removal of spools or the swinging of blanks and could involve Class ‘B’ Hot Work (such as usage of cranes, forklifts or generators), the Permit Authority then authorises the mechanical isolations by signing section 2D and issuing a separate Work Permit with the scope of work stating “Install Spades/Blinds and remove spools for Permit number XXX” to the mechanical Permit Holder and team member(s) to perform the

mechanical isolation(s). The Permit Holder and team members will attach their Personal Danger lock and tag to the lock box.

⚠ WARNING

When breaking into the process an Isolation Authority must be in attendance.

The original work permit remains in place at the permit issuing area. When all the isolations are completed, the mechanical fitter returns to the permit issuing area and signs the Completed by section on all copies of the Work Permit. The mechanical fitter may be required to sign the isolation checklist/blind list drawing. The Permit Authority then informs the Operation Isolation Authority to carry out the lock out and tag out in the field for all the mechanical isolations with the appropriate permit tags. Having carried out the lock and tagging, the Operations Isolation Authority returns to the permit issuing area, prints and signs their name to confirm the isolations as complete in the isolation checklist or blind list and records the lock set number used on the original work permit and the copies. The Operation Isolation Authority will sign Section 2D indicating tagging of mechanical isolations was completed. The Isolation Authority or Permit Authority then places the isolation key in the assigned lock box which is then locked by the Permit Authority.

SECTION 2E – LOW RISK HOT WORK (CLASS 'B' HOT WORK)

If the work to be done involves hot work, then the Permit Authority determines the requirements in Section 2E if the hot work is classified as Low Risk Hot Work (Class 'B' Hot Work). These requirements must be satisfied before the work permit is approved. If a Class "A" Hot Work is required, the certificate number must be updated in Section 2E.

Note: Depending on the nature of the hot work activity, both Class "A" and Class "B" hot work could be applicable requiring a Hot Work Certificate and Section 2E completed.

This section is to be used in conjunction with the ***Hot Work Procedure*** ***KHP-GM-OHS-070-07***.

Note:	Any number, or none, of the Sections 2A to 2E may be required as preparatory work to be completed before the work permit is approved. Any work that is required must be carried out in the alphabetical order as laid out in Section 2.

SECTION 3 - CONDITIONS ACCEPTED BY PERMIT HOLDER

The Permit Holder being conversant with and in agreement with the conditions specified on the Work Permit, and having checked the work area, prints and signs their name accepting these conditions. The time and date is also noted in this section.

Signing of this acceptance indicates the Permit Holder's understanding of and agreement with adherence to the conditions specified by the Permit Authority.

Note: The Permit Holder must check and ensure all permit requirements are completed prior to signing the permit and commencing work.

SECTION 4 - WORK PERMIT APPROVED BY PERMIT AUTHORITY

When all the requirements of Section 2 have been satisfied and section 3 completed, the Permit Authority prints and signs their name approving the Work Permit, noting the time and date of issue.

The Work Permit is issued and now active. The original white copy is maintained by the Permit Holder, with the other copies being maintained by the Permit Authority at the permit issuing area. The Permit Register must be updated with the appropriate information.

If the designated work is not completed by the end of the day, then the work site must be left in a safe, tidy condition and the Work Permit must be returned to the Permit Authority. The Permit Register must be updated. The work permit must then be re-validated before work can restart.

⚠ WARNING

When breaking into the process an Isolation Authority must be in attendance.

Note:	The permit holder and permit authoriser must not to be the same person. An exception is required for the camera permit as shift controllers may need to take photos outside normal business hours.

SECTION 5 - WORK COMPLETED

The Permit Holder, having completed the designated work and left the area in a clean, tidy and safe condition, returns to the permit issuing area and prints and signs their name in the work completion section on the work permit and all copies.

SECTION 6A MECHANICAL DE-ISOLATION

Authorisation for mechanical de-isolation is identified in section 6A. Before authorising mechanical de-isolations, the Permit Authority will hand over the isolation checklist or blind list to an Operation Isolation Authority to remove lock and ‘Danger-Do Not Operate’ or ‘Confined Space Entry’ or “Master Isolation” tags from spades or spools used for isolations. Once removed, the Operation Isolation Authority will sign the permit that tagging was removed. The Permit Authority then signs section 6A of the Work Permit to authorise the mechanical de-isolation and issues the Work Permit to the relevant mechanical fitter. As this process requires breaking into process, reinstate of spools or the swinging of blanks and could involve hot work (such as usage of cranes, forklifts or generators), this work shall be undertaken under a separate Work Permit with the scope of work stating “Remove spades/blinds and reinstate spools for Permit number XXX”. The Permit Holder and team members will attach their Personal Danger lock and tag to the lock box. When mechanical de-isolation is complete, the nominated mechanical fitter prints and signs their name in the de-isolation completion section on the Work Permit and all copies. If an isolation check list or blind list was used, the nominated mechanical fitter will be required to sign the isolation checklist / blind list. A nominated Operations Isolation Authority shall verify all isolations are removed.

⚠ WARNING

When breaking into the process an Operation Isolation Authority must be in attendance.

SECTION 6B INSTRUMENTATION RECONNECTION & DE-ISOLATION

Instrumentation reconnection and de-isolation is identified in section 6B and is authorised by the Permit Authority bearing their signature (and the mechanical de-isolation completion, if applicable) to the relevant Isolation Authority. Instrumentation de-isolation can be carried out with the authorisation by the Permit Authority, by bearing their name/signature in the authorisation section for Instrumentation De-Isolation. Having carried out the de-isolation, the Isolation Authority prints and signs their name in the de-isolation completion section on the Work Permit and all copies. An isolation checklist may also be required to be signed.

SECTION 6B ELECTRICAL DE-ISOLATION

Authorisation for electrical de-isolation is identified in section 6B. The Permit Authority authorises the electrical de-isolation after the mechanical and instrumentation de-isolation is completed. The Permit Authority then issues the original Work Permit, bearing their signature (and the mechanical and instrumentation de-isolation completion, if applicable) to the relevant Isolation Authority to carry out de-isolations.

When electrical de-isolation is complete, the nominated Isolation Authority prints and signs their name on the de-isolation completion section on the Work Permit and all copies. An isolation checklist may also be required to be signed.

SECTION 6C OPERATIONAL DE-ISOLATION

In section 6C a Process Operator, trained as an Isolation Authority, is requested to remove associated locks and tags listed on the Work Permit or Isolation Checklist and return the equipment to operational status including LO/LC valves and Hardware Override if applicable. Having carried out the de-isolation the Process Operator prints and signs their name in the completion section on the Work Permit and all copies.

RE-VALIDATIONS

Re-validation may continue to be utilised up until the work permit valid date, providing work continues to be carried out on consecutive normal working days. In any situation where continuous work is delayed for one normal working day (i.e. work permit is not re-validated), the Permit Authority will review the work area and work permit conditions before re-validating the permit.

Permits can only be re-validated when the conditions of work are the same as those originally stated on the Work Permit.

The re-validation section is used to record gas testing results as per the frequency requirements of the original work permit conditions. The Work Permit is also revalidated when a new person becomes the Permit Holder.

SECTION 7 – PERMIT TO WORK CLOSED

Following the above steps have been completed and after the Permit Authority is satisfied that:

- an acceptable level of work was carried out, and
- the work area has been left in a clean and safe state,

- fusible loop reinstated and fusible loop register updated

The Permit Authority prints and signs their name to state that the Work Permit is closed, noting the time and date.

7.6.5 Electrical Disconnection Work Permit Sections Detailed Description

SECTION 1 - APPLICATION FOR ELECTRICAL DISCONNECTION WORK PERMIT

In this section, the Permit Authority will discuss the job details, duration of the permit and records:

Date of Issue
Permit Valid Until
Company and Designation of the PH
Description of work to be carried out
Equipment to be worked on
Type of tools to be used
Master permit number if the permit is being used in a Master Permit work pack
Any additional comments

Note: When writing the description of work, the wording is to include “Electrical disconnection and reconnection of equipment xxx”.

Note:	If a DCS or Delta V download is required, the Operations Superintendent must be informed before issuing the permit. Downloads could cause a plant shutdown.

SECTION 2 - PREPARATION REQUIRED

The Permit Authority assesses any risks associated with the scope of work and specifies the operational preparations, isolations, hot works, special precautions and any certificates that may be required:

Confined Space Certificate
Excavation / Penetration / Blasting Certificate
HV Switching Program Certificate
Working at Height Certificate
Live Work Access Certificate

These are recorded by the Permit Authority who completes Section 2. If the DCS / Delta V require a download, a Manager’s approval attached to the JSA / Work Order / Risk Assessment is required to allow for the download to occur.

Depending on the nature of the hot work activity, both Class “A” and Class “B” hot work could be applicable requiring a Hot Work Certificate and Section 2E completed.

If equipment isolation is required, the Permit Authority proceeds to the relevant discipline (2A, 2B,2C or 2D), completes the required section(s) and arranges for the necessary isolations to be carried out in the alphabetical order of Section 2 (i.e. 2A before 2B etc).

Each section will record the number of locks and tags and the lock set number used.

SECTION 2A - OPERATIONAL ISOLATION

If operational isolation is required, this is identified in section 2A. The Permit Authority specifies the type of operational isolation required using a Standard Isolation Checklists and marked up PIDs. Non Standard Isolation Checklist and PIDs must be reviewed by an Isolation Reviewer. (Note: The system must be prepared for maintenance which includes hydrocarbon freeing and de-pressurising) The required isolations are then carried out by the Isolation Authority and update the isolation checklist with the Danger Do Not Operate Tag reference number. The isolation checklist must be dated and signed on each isolation carried out. Having carried out the isolation, the Isolation Authority returns to the permit issuing area, prints and signs their name to confirm the isolations as complete in section 2A and records the number of locks, tags and lock set number used on the original electrical disconnection work permit and the copies. The Isolation Authority or Permit Authority then places the isolation key in the assigned lock box which is then locked by the Permit Authority.

Note: If the Permit Authority is not available to place the Permit Authority lock on the lock box, the Isolation Authority mustmaintain the isolation key under their control until such time that the Permit Authority can secure the key(s) in lock box with a Permit Authority lock.

SECTION 2B - ELECTRICAL ISOLATION

The Isolation Authority is issued with the green copy of the electrical disconnection work permit bearing the signature of the Permit Authority (and the operational isolation completion details, if applicable) as authorisation to carry out the isolation. The original electrical disconnection work permit remains in control of the Permit Authority at the permit issuing area.

Having carried out the isolation(s), the Isolation Authority and a field operator will carry out a try step at field to ensure the correct equipment has been isolated where possible. The Isolation Authority will return to the permit issuing area, handover the isolation key of the electrical isolation locks to the Permit Authority. The Isolation Authority then prints and signs their name in the Completed section, recording the number of locks and tags and lock set number used on the original electrical disconnection work permit and the copies. If an isolation checklist was used, the Isolation Authority will be required to sign the isolation checklist and update the isolation checklist with the Danger Do Not Operate Tag reference number.

Note: If the Permit Authority is not available to place the Permit Authority lock on the lock box, the Isolation Authority must maintain the isolation key under their control until such time that the Permit Authority can secure the key(s) in lock box with a Permit Authority lock.

The Permit Authority locks the electrical isolation key into the correct lock box. If isolations are not required for instrumentation or mechanical, the green copy can be discarded.

SECTION 2C - INSTRUMENTATION ISOLATION

If instrumentation isolation is required this is identified in section 2C. The Isolation Authority is issued with the green copy of the work permit bearing the signature of the Permit Authority (and the operational and electrical isolation completion details, if applicable) as authorisation to carry out the isolation. The original electrical disconnection work permit remains in place at the permit issuing area. Having carried out the isolation, the Isolation Authority returns to the permit issuing area, prints and signs their name in the Completed by section, recording the number of locks and tags and lock set number used on the original electrical disconnection work permit and the copies. If an isolation checklist was used, Isolation Authority will be required to sign the isolation checklist and update the isolation checklist with the Danger Do Not Operate Tag reference number. The Isolation Authority then places the isolation key in the assigned lock box which is then locked by the Permit Authority.

Note: If the Permit Authority is not available to place the Permit Authority lock on the lock box, the Isolation Authority must maintain the isolation key under their control until such time that the Permit Authority can secure the key(s) in lock box with a Permit Authority lock.

If instrumentation disconnection is required the Permit Authority will tick the “YES” box authorising the instrumentation disconnection for the Isolation Authority to carry out the disconnection. The original electrical disconnection work permit remains in place at the permit issuing area. Having carried out the disconnection, the Isolation Authority returns to the permit issuing area, prints and signs their name in the Completed by section, recording the number of locks and tags and lock set number used on the original electrical disconnection work permit and the copies. The Isolation Authority then places the isolation key in the assigned lock box which is then locked by the Permit Authority.

If fusible loop disconnection or relocation is required, the Permit Authority will tick the “YES” box and the fusible loop register must be updated.

Note: If the Permit Authority is not available to place the Permit Authority lock on the lock box, the Isolation Authority must maintain the isolation key under their control until such time that the Permit Authority can secure the key(s) in lock box with a Permit Authority lock.

If no mechanical isolations are required, the green copy can now be discarded.

SECTION 2D - MECHANICAL ISOLATION

If mechanical isolation is required, this can be carried out under section 2D. The Permit Authority specifies the type/s of mechanical isolation required by use of spade/ blanking as stated in the isolation checklist and blind list drawing. The Permit Authority confirms that the operational and if required electrical and / or instrumentation isolations are already in place.

As this process requires breaking into process, removal of spools or the swinging of blanks and could involve Class ‘B’ Hot Work (such as usage of cranes, forklifts or generators), the Permit Authority then authorises the mechanical isolations by signing section 2D and issuing a separate Work Permit with the scope of work stating “Install Spades/Blinds and remove spools for Permit number XXX” to the mechanical Permit Holder and team member(s) to perform the

mechanical isolation(s). The Permit Holder and team members will attach their Personal Danger lock and tag to the lock box.

⚠ WARNING

When breaking into the process an Operation Isolation Authority must be in attendance.

The original electrical disconnection work permit remains in place at the permit issuing area. When all the isolations are completed, the mechanical fitter returns to the permit issuing area and signs the Completed section and on all copies of the electrical disconnection work permit. The mechanical fitter may be required to sign the isolation checklist/blind list drawing. The Permit Authority then informs the Operation Isolation Authority to carry out the lock out and tag out in the field for all the mechanical isolations with the appropriate permit tags. Having carried out the lock and tagging, the Operations Isolation Authority returns to the permit issuing area, prints and signs their name to confirm the isolations as complete in the isolation checklist or blind list and records the lock set number used on the original electrical disconnection work permit and the copies. The Operation Isolation Authority will sign Section 2D indicating tagging of mechanical isolations was completed. The Isolation Authority or Permit Authority then places the isolation key in the assigned lock box which is then locked by the Permit Authority.

SECTION 2E - LOW RISK HOT WORK (CLASS 'B' HOT WORK)

If the work to be done involves hot work, then the Permit Authority determines the requirements in Section 2E if the hot work is classified as Low Risk Hot Work (Class 'B' Hot Work). These requirements must be satisfied before the work permit is approved. If a Class "A" Hot Work is required, the certificate number must be updated in Section 2E.

Note: Depending on the nature of the hot work activity, both Class "A" and Class "B" hot work could be applicable requiring a Hot Work Certificate and Section 2E completed.

This section is to be used in conjunction with the ***Hot Work Procedure*** ***KHP-GM-OHS-070-07***.

SECTION 3 - CONDITIONS ACCEPTED BY PERMIT HOLDER

The Permit Holder being conversant with and in agreement with the conditions specified on the electrical disconnection work permit, and having checked the work area, prints and signs their name accepting these conditions. The time and date is also noted in this section.

Signing of this acceptance indicates the Permit Holder's understanding of and agreement with adherence to the conditions specified by the Permit Authority.

Note: The Permit Holder must check and ensure all permit requirements are completed prior to signing the permit and commencing work.

SECTION 4 - WORK PERMIT APPROVED BY PERMIT AUTHORITY

When all the requirements of Section 2 have been satisfied and section 3 completed, the Permit Authority prints and signs their name approving the electrical disconnection work permit, noting the time and date of issue.

The electrical disconnection work permit is issued and now active. The original blue copy is maintained by the Permit Holder, with the other copies being maintained by the Permit Authority

at the permit issuing area. The Permit Register must be updated with the appropriate information.

The electrical disconnections could be carried out as stated in “Section 1 Description of Work” once Section 4 has been authorised.

If the designated work is not completed by the end of the day, then the work site must be left in a safe, tidy condition and the electrical disconnection work permit must be returned to the Permit Authority. The Permit Register must be updated. The work permit must then be re-validated before work can restart.

⚠ WARNING

When breaking into the process an Operation Isolation Authority must be in attendance.

SECTION 5 –ELECTRICAL RECONNECTION AND DIRECTION TEST

This section is required when the equipment is ready for a direction test. The Permit Authority must ensure that all personnel working under the permit must stop their job and relinquish the permit and inform them that the equipment will be energised and tested for correct rotation or valve movement.

Note: Due to some equipment commissioning processes, Operations isolations may be needed to be removed and normalised for the direction test. The Permit Authority will use his discretion and safely de-isolate the process for this task. The Permit Authority must also discuss and consider if the rotation check could be completed after the permit has been closed.

SECTION 5A

The task is completed up to the point where direction testing is required. An electrician re-connects the electrical disconnection then prints and signs their name in the Completed by section 5A.

SECTION 5B

- The permit authority asks the electrician whether a direction test is required.
    - If YES:
        - The current permit holder signs off the “blue sign on/off” copy of the electrical disconnection work permit, along with all team members and must return the electrical disconnection work permit to the Permit Authority. All personal locks must be removed from the permit lock box. This is to ensure all personnel not involved with the direction test are not working on the equipment.
        - Proceed to 5C to relinquish the work permit.
    - If NO:
        - Proceed to section 5H of the work permit and continue the process until the electrical disconnection permit closed (section 8)

SECTION 5C

Section 5C is signed by the permit holder (currently working on the job) to relinquish the work permit. The Permit Holder must ensure that all team members are taking off the job till direction test is completed. The Permit Authority must ensure the equipment is safe for the direction test and all personnel locks have been removed from the permit lock box. If the permit was not revalidated and not issued and no personnel were working on the job, Section 5C should be updates as “N.A” or Not Applicable.

SECTION 5D

The Permit Authority will unlock the permit lock box and remove the required key(s) for electrical de-isolation. The Permit Authority authorises the electrical de-isolation in Section 5D bearing their name and signature. Having carried out the de-isolation, the electrical isolation authority returns to the permit issuing area and signs the Completed by section 5D on all copies of the electrical disconnection work permit.

SECTION 5E

The electrical isolation authority will carry out direction test on the equipment.

- Direction testing is carried out.
    - If ok (YES):
        - The electrician will tick the YES box and sign that the direction test was conducted and has no issues. The Permit Authority will write N/A in 5G (Direction Change Completed) and then go to 5F for electrical isolation before normal work could be resumed on the equipment.
    - If not ok (NO):
        - The electrician will tick the NO box. The Permit Authority will proceed to 5F to authorise isolation of the equipment for direction change.

SECTION 5F

The Permit Authority authorises the electrical isolation bearing their name and signature. Having carried out the isolation, the electrical isolation authority returns to the permit issuing area and signs the Completed by section 5F on all copies of the electrical disconnection work permit. The key(s) used to isolate the equipment will be place in the permit lock box and locked by the Permit Authority.

- The electrician will then carry out the direction change

OR

- The permit could be revalidated for normal work if no direction change is required.

SECTION 5G

Having carried out the direction change, the electrical isolation authority returns to the permit issuing area and signs the Completed by section 5G on all copies of the electrical disconnection work permit.

SECTION 5H

The permit authority must ensure the electrical isolation is isolated before revalidating the electrical disconnection work permit if work is required on the equipment. The permit holder and all team members are required to sign back on to the blue sign on/off copy of the work permit. Once the task has been completed, continue the electrical disconnection work permit process from section 6 onwards.

SECTION 6 - WORK COMPLETED

The Permit Holder, having completed the designated work and left the area in a clean, tidy and safe condition, returns to the permit issuing area and prints and signs their name in the work completion section on the electrical disconnection work permit and all copies.

Before signing Section 6 Work Completed, the electrical reconnection must be completed. Mechanical and INLEC must sign Section 6 to ensure no other work is required before the permit is closed.

SECTION 7A MECHANICAL DE-ISOLATION

Authorisation for mechanical de-isolation is identified in section 7A. Before authorising mechanical de-isolations, the Permit Authority will hand over the isolation checklist or blind list to an Operation Isolation Authority to remove lock and tags from spades or spools used for isolations. Once removed, the Operation Isolation Authority will sign the permit that tagging was removed. The Permit Authority then signs section 7A of the electrical disconnection work permit to authorise the mechanical de-isolation and issues the electrical disconnection work permit to the relevant mechanical fitter. As this process requires breaking into process, reinstate of spools or the swinging of blanks and could involve hot work (such as usage of cranes, forklifts or generators), this work shall be undertaken under a separate Work Permit with the scope of work stating “Remove spades/blinds and reinstate spools for Permit number XXX”. The Permit Holder and team members will attach their Personal Danger lock and tag to the lock box. When the mechanical de-isolation is complete, the nominated mechanical fitter prints and signs their name in the de-isolation completion section on the electrical disconnection work permit and all copies. If an isolation check list or blind list was used, the nominated mechanical fitter will be required to sign the isolation checklist / blind list. A nominated Operations Isolation Authority shall verify all isolations are removed.

⚠ WARNING

When breaking into the process an Operation Isolation Authority must be in attendance.

SECTION 7B INSTRUMENTATION RECONNECTION & DE-ISOLATION

Instrumentation reconnection and de-isolation is identified in section 7B and is authorised by the Permit Authority bearing their signature (and the mechanical de-isolation completion, if applicable) to the relevant Isolation Authority. Having carried out the reconnection, the Isolation Authority prints and signs their name in the reconnection completion section on the Electrical Disconnection Work Permit and all copies. Instrumentation de-isolation can now be carried out

with the authorisation by the Permit Authority, by bearing their name/signature in the authorisation section for Instrumentation De-Isolation. Having carried out the de-isolation, the Isolation Authority prints and signs their name in the de-isolation completion section on the electrical disconnection work permit and all copies. An isolation checklist may also be required to be signed.

SECTION 7B ELECTRICAL DE-ISOLATION

Authorisation for electrical de-isolation is identified in section 7B. The Permit Authority authorises the electrical de-isolation after the mechanical and instrumentation de-isolation is completed. The Permit Authority then issues the original electrical disconnection work permit, bearing their signature (and the mechanical and instrumentation de-isolation completion, if applicable) to the relevant Isolation Authority to carry out de-isolations.

When electrical de-isolation is complete, the nominated Isolation Authority prints and signs their name on the de-isolation completion section on the electrical disconnection work permit and all copies. An isolation checklist may also be required to be signed.

SECTION 7C OPERATIONAL DE-ISOLATION

In section 7C a Process Operator, trained as an Isolation Authority, is requested to remove associated locks and tags listed on the electrical disconnection work permit or Isolation Checklist and return the equipment to operational status including LO/LC valves and Hardware Override if applicable. Having carried out the de-isolation the Process Operator prints and signs their name in the completion section on the electrical disconnection work permit and all copies.

RE-VALIDATIONS

Re-validation may continue to be utilised up until the work permit valid date, providing work continues to be carried out on consecutive normal working days. In any situation where continuous work is delayed for one normal working day (i.e. work permit is not re-validated), the Permit Authority will review the work area and work permit conditions before re-validating the permit.

Permits can only be re-validated when the conditions of work are the same as those originally stated on the electrical disconnection work permit.

The re-validation section is used to record gas testing results as per the frequency requirements of the original work permit conditions. The electrical disconnection work permit is also revalidated when a new person becomes the Permit Holder.

SECTION 8 – PERMIT TO WORK CLOSED

Following the above steps have been completed and after the Permit Authority is satisfied that:

- an acceptable level of work was carried out, and
- the work area has been left in a clean and safe state,
- fusible loop reinstated and fusible loop register updated

The Permit Authority prints and signs their name to state that the electrical disconnection work permit is closed, noting the time and date.

Note: If the motor direction test was not completed, the Permit Authority will organise process commissioning and the rotation check.

7.6.6 Permit Preparation, Acceptance and Issuing Procedure with Isolations

The following is a step-by-step description of issuing a Work Permit and Electrical Disconnection Work Permit:

1. The Permit Holder develops a JSA. If the job falls into the Working at Height or Live Work Access criteria, the Permit Holder will complete the required certificates.

2. The Permit Holder reports to the Permit Authority with a JSA and requests a permit, detailing all relevant information associated with performing the task.

3. The Permit Authority evaluates the work and equipment details and assesses any risk associated on the request and determines the appropriate type of permit.

4. The Permit Authority fills out the work permit or electrical disconnection work permit requiring details from the Permit Holder. See **Work Permit Sections Detailed Description** for more information.

5. The Permit Authority identifies any prerequisite activities necessary to be carried out to enable the specified work to be performed safely and identifies all of the necessary precautions and isolation to be performed to ensure the safety of the persons doing the work. All additional/special instructions relevant to the workplace and the proposed work shall be listed on the permit by the Permit Authority. The use of a Hot Work Certificate may be required if Class “A” hot Work is required. When breaking into the process, the work permit must state that an operator must be standing by prior to the first break. Certificates (Hot Work, HV Switching, Confine Space Entry, Excavation / Penetration, Working at Height / Live Work Access) may be required and will be updated in the permit.

6. The Permit Authority then nominates which lock box is to be used by labelling the front of the lock box with the permit number and the task description.

7. The Permit Authority will place the work permit or electrical disconnection work permit in the lock box sleeve and attach an Isolation in Progress tag to the lock box. The Operations Isolation Authorities commence the isolations as per the agreed isolations stated on the Isolation checklist /P&IDs/ drawings and lock all isolations in the isolated position. Signing all documents upon completion. (Note: The system must be prepared for maintenance which includes hydrocarbon freeing and de-pressurising)

8. The Permit Authority will issue the green copy of the permit or(and) the isolation checklist or marked up P&IDs or drawings to the Isolation Authority to carry out the electrical and instrument isolation(s). On completion of the isolations, the Isolation Authority and a field operator will carry out a try step at field to ensure the correct equipment has been isolated. The Isolation Authority will return to the permit issuing area, handover the isolation key of the electrical isolation locks to the Permit Authority. The Isolating Authority will sign on all copies of the Permit and the isolation list or marked up P&IDs and drawings if these were used during isolation. If fusible loop disconnection or relocation was required, the fusible loop register must be updated.

9. The Permit Authority will issue the isolation checklist or marked up P&IDs or drawings to the mechanical fitter to carry out the isolation. As the process

requires the removal of spools or the swinging of blanks and could involve Class B hot work (such as usage of cranes, forklifts or generators), a separate Work Permit with the scope of work stating “Carry out isolations/De-isolations for Permit number XXX” will be issued to the Mechanical Permit Holder. The Permit Holder and team members will attach their Personal Danger lock and tag to the lock box. On completion of the isolation the mechanical fitter returns to the permit issuing area, records the isolations and signs on all copies of the Permit and the isolation list or marked up P&IDs and drawings if these were used during isolation. The Permit Authority will request the Operation Isolation Authority to tag the mechanical isolations and sign the permit when complete.

Note: Where process isolations require the removal of spools or the swinging of blanks and involves hot work (such as usage of cranes, forklifts or generators), this work shall be undertaken under a separate Work Permit with the scope of work stating “Carry out isolations/De-isolations for Permit number XXX”.

⚠ WARNING

When breaking into the process an Isolation Authority must be in attendance.

10. Once all isolations have been completed, the Permit Authority then removes the Isolation in Progress Tag from the Permit Authority Lock and re-locks the lock box to ensure the isolation key/s is secure.

11. If the work to be done involves hot work, then the Permit Authority determines the required preparations using the Hot Work Certificate or/and in Section 2E. The Permit Authority specifies gas testing requirements and frequency, if required.

This section is to be used in conjunction with the Hot Work Procedure KHP-GM-OHS-070-07.

12. The Permit Authority checks the Permit Register to ensure any other active or revalidated permits will not change the risk assessment that could cause harm to individuals and environment or damage property. (Example: Before a lab sampling permit is released, a detail discussion and permit checks must be carried out if a permit with either Class ‘A’ or ‘B’ Hot Work is active in the plant. Sampling could be considered in areas away from the Hot Work vicinity.)

13. The Permit Holder checks all permit requirements are completed prior to signing the permit. The Permit Holder signs the ‘Permit Holder’ section of the work permit or electrical disconnection work permit, accepting the conditions of the permit and associated documents as correct and that they will strictly observe the hazard controls and brief all the team members in the permit requirements.

14. It is the responsibility of the Permit Holder to ensure that all team members working under the permit sign on and off the blue copy of the work permit and use a personnel danger tag and personal lock to lock on and off the lock box before commencement and at the completion of their shift. The Permit Holder is to also ensure that all specified safety equipment is at the workplace before task is allowed to start, and that the equipment remains at the workplace for the duration of the task. The permit and associated documentation is to be maintained at the work site.

15. The Permit Authority or their delegate checks the workplace to ensure all precautions have been adhered to, including gas testing (where necessary) in the area of the proposed task.

16. The Permit Authority issues the work permit or electrical disconnection work permit and shall update the Permit Register on a continuous basis. The Permit Authority is responsible for checking the register against the status of permits on the Permit Lock Box Board.

17. The Permit Authority places the yellow copy of the permit, the blue sign on/off document and any related documents (isolation checklist / PIDs) to the lock box located at the Permit Lock Box Board.

18. It is the responsibility of the Permit Holder and Permit Authority to ensure that an operator is standing by prior to breaking into the process.

7.6.7 Permit Preparation, Acceptance and Issuing Procedure Without Isolations

The following is a step-by-step description of issuing a Work Permit:

1. The Permit Holder develops a JSA. If the job falls into the Working at Height or Live Work Access criteria, the Permit Holder will complete the required certificates.

2. The Permit Holder reports to the Permit Authority with a JSA and requests a permit, detailing all relevant information associated with performing the task.

3. The Permit Authority evaluates the work and equipment details and assesses any risk associated on the request and determines the appropriate type of permit.

4. The Permit Authority fills out the work permit requiring details from the Permit Holder. See **Work Permit Sections Detailed Description** for more information.

5. The Permit Authority identifies any prerequisite activities necessary to be carried out to enable the specified work to be performed safely and identifies all of the necessary precautions and isolation to be performed to ensure the safety of the persons doing the work. All additional/special instructions relevant to the workplace and the proposed work shall be listed on the permit by the Permit Authority. The use of a Hot Work Certificate may be required if Class “A” hot Work is required. Certificates (Hot Work, Excavation / Penetration / Blasting, Working at Height / Live Work Access) may be required and will be updated in the permit.

6. If no isolations are required, the Permit Authority then discards the green copy of the work permit and updates the Isolation Section 2 A, B, C, and D with Not Applicable (NA) or Not Required. If fusible loop disconnection or relocation is required, the fusible loop register must be updated.

7. If the work to be done involves hot work, then the Permit Authority determines the required preparations using the Hot Work Certificate or/and in Section 2E. The Permit Authority specifies gas testing requirements and frequency, if required.

This section is to be used in conjunction with the Hot Work Procedure KHP-GM-OHS-070-07.

8. The Permit Authority checks the Permit Register to ensure any other active or revalidated permits will not change the risk assessment that could cause harm to individuals and environment or damage property. (Example: Before a lab sampling permit is released, a detail discussion and permit checks must be carried out if a permit with either Class 'A' or 'B' Hot Work is active in the plant. Sampling could be considered in areas away from the Hot Work vicinity.)

9. The Permit Holder signs the 'Permit Holder' section of the permit, accepting the conditions of the permit and associated documents as correct and that they will strictly observe the hazard controls and brief all the team members in the permit requirements.

10. It is the responsibility of the Permit Holder to ensure that all team members working under the permit sign on and off the blue copy of the work permit before commencement and at the completion of their shift. The Permit Holder is to also ensure that all specified safety equipment is at the workplace before task is allowed to start, and that the equipment remains at the workplace for the duration of the task. The permit and associated documentation is to be maintained at the work site.

11. The Permit Authority or their delegate checks the workplace to ensure all precautions have been adhered to, including gas testing (where necessary) in the area of the proposed task.

12. The Permit Authority issues the permit and shall update the Permit Register on a continuous basis. The Permit Authority is responsible for checking the register against the status of permits on the Work Permit Board.

13. The Permit Authority places the yellow copy of the permit, the blue sign on/off document and any related documents on the Work Permit Board.

7.6.8 Working under a Permit

To commence work under a Permit the following shall occur in order:

The Permit Holder shall brief team members about the hazard controls already in place and any additional controls required for the task using the Permit, first break process, Certificates (if applicable) and JSA as a basis for this briefing. Any issues that team members raise will be clarified and then the Team Members shall sign onto the blue copy of the Permit to acknowledge they have been briefed and understand the hazard controls in place and will comply with the requirements.

Team Members will attach their Personal Danger lock with tag to the relevant Permit lock box if the permit has isolations.

The Permit Holder ensures the work performed is as defined in the Permit scope of work and risk assessed on the Permit and if any conditions are breached, all work shall cease and the Permit Holder shall refer the matter to the Permit Authority.

Note: When all of the 'sign on' entries on the Blue page of the Permit are used, a photocopy can be attached to the Permit for additional entries.

7.6.9 Change of Permit Holder

If the Permit Holder is required to change after issuing the Permit, both Permit Holders (current and new) are responsible for identifying themselves to the Permit Authority.

The Permit Authority ensures the new Permit Holder is fully briefed on the hazard controls in place and that they sign in the space provided on the Blue copy of the Permit. All copies of the Permit shall come together for revalidation noting the time and date of the changeover. The original copy of the Permit is given to the new Permit Holder.

Should the current Permit Holder cease to be responsible for the performance of the task detailed on the Permit, then the Permit becomes invalid and the task must cease.

The current Permit Holder must:

- Ensure that all Team Members are informed of the change of the PH
- Sign off as Permit Holder on the blue copy of the Permit
- Initial the “PERMIT RETURNED” box on the original copy and all other copies

The new Permit Holder must:

- Request re-validation of the Permit
- Sign for acceptance of the Permit on the re-validation section on the white copy
- Sign on the blue copy of the Permit as Permit Holder

7.6.10 Original or Duplicate Copy of Work Permit Lost

In the event that the original copy of the Permit is lost, a copy of the Permit can be made by photocopying the Permit Authority’s yellow copy.

7.6.11 Work is Completed But Not Able to be Commissioned.

When work defined in the scope of work is completed, but the equipment is not able to be commissioned or work on a job has reached a point where no one will be required to work on the job, the following shall occur in order:

The Permit Holder ensures the work site is left in a clean and safe state.

All work team members shall remove their Personal Danger locks with tags from the Permit Lock Box Board lock box and sign off the blue copy of the permit. The Permit Holder is responsible for ensuring that this occurs and shall investigate any remaining locks with tags.

The Permit Holder shall return the Permit documentation to the Permit Authority and sign off all copies of the Permit that the work is complete, but the equipment cannot be commissioned. The Permit Holder will explain to the Permit Authority the state of the job and why the job cannot be commissioned.

The Permit Authority will issue the key to the isolation lock set to the de-isolating authority to remove the locks and “Danger Do Not Operate” tags and replace them with “Out-of-Service” tags. The out of service register must be filled in, however all the isolation points are to remain in place.

7.6.12 Work Completed And Permit Closure

When work defined in the scope of work is complete or there is a requirement to close the Permit, the following shall occur in order:

The Permit Holder ensures the work site is left in a clean and safe state.

All team members and the permit holder will sign off the blue copy of the work permit. If isolations were in place, all work team members shall remove their Personal Danger locks with tags from the Permit Lock Box Board lock box. The Permit Holder is responsible for ensuring that this occurs and shall investigate any remaining locks with tags.

The Permit Holder shall return the Permit documentation to the Permit Authority and sign off all copies of the Permit that the work is complete and the equipment is fit to be returned to service.

In the case of work conducted in a confined space, the Permit Authority (who may designate to an Isolating Authority) shall inspect the confined space to ensure that work is completed and closure can proceed.

The Permit Authority will start the de-isolation process.

Once the work environment status has been returned to a state of readiness for return to normal duties, the Permit Authority shall:

- Sign any certificates as “Closed” if required.
- Sign the “Permit Closed” section on all copies of the Permit. If fusible loop is required to be reinstated, the fusible loop register must be updated.
- Remove the orange “De-Isolations in Progress Tag” from the Permit Lock Out Board lock box

The original copy, yellow copy, and associated certificate are to be removed from the lock box and all copies are kept together for archiving.

The Permit Authority shall file all copies of the Permit, with its associated documentation such as, isolation list and Certificates. Permits must be retained for two years, after which they may be disposed.

7.6.13 Equipment Requires Urgent Commissioning

There may be a need to urgently commission equipment or part of a process when the Permit Holder has failed to sign the Work Completed section and(or) has left Personnel Danger Locks and tags on the lock box. The Permit Authority will try to locate the Permit Holder or team members named on the Permit. If the person cannot be located then Authorisation Record of Removing Locks Form KHP-SF-OHS-070-01 must be followed.

⚠ WARNING

IF COMPLETION OF THE TASK CANNOT BE CONFIRMED
THE EQUIPMENT/PROCESS IS NOT TO BE COMMISSIONED

7.6.14 Scaffolding

When issuing a Work Permit for scaffolding, the scope of work can be generalised, that is state “Erect and dismantle scaffold in xxx area”. However, if the scope of work is generalised and

several scaffolds will be worked on under this Work Permit, each individual scaffold will require a STOP card to be completed in addition to the JSA originally submitted for the Work Permit.

7.6.15 DBP COMPOUND

There may be a situation where Kleenheat Production Facility requires access to the DBP compound. Under these circumstances, Kleenheat Production Facility's isolation locks and tags will piggyback those already put into place by DBP. This will ensure the safety of Kleenheat personnel, plant and equipment.

7.7 MASTER ISOLATION PERMIT

When a number of different tasks are being completed under separate Work Permits with all tasks sharing the same Isolation checklist, the isolation is called a Master Isolation.

The Master Isolation Permit is a document that ensures all isolations are in place before individual permits are issued for task within the isolated boundary. The Master Isolation Permit is not issued to Permit Holders to carry out a task.

Consideration needs to be given to dividing the plant up into logical, manageable sections, which will allow work in other areas to continue while ensuring the safety of those working in areas that are isolated under the Master Isolation Permit process.

The Master Isolation Permit must have an isolation checklist and marked up PID's to define the boundaries of the isolations.

The Master Isolation Permits are designed to be used on major equipment, or for sectional areas of the plant. The Permit Authority could issue working copies of the isolation checklist (not the original) or marked up PID's to the Isolation Authority to carry out the isolations. These isolations are identified in the field by "Danger-Do Not Operate Master Isolation" tags which have a green striped border.

7.7.1 Master Isolation Permit Sections Detailed Description

SECTION 1 - APPLICATION FOR MASTER ISOLATION PERMIT

In this section, the Permit Authority will decide on the boundaries of isolation and generate an Isolation Checklist with all the required isolations:

Date of Issue
Description of Isolation System

SECTION 2 - PREPARATION REQUIRED

The Permit Authority assesses any risks associated with the scope of work and specifies the operational preparations, isolations, special precautions and any certificates that may be required:

HV Switching Program Certificate
Hot Work Certificate: The hot work certificate is rarely linked to the Master Isolation Permit. Permits issued under the MIP, will normally have their own Hot Work Certificate due to the nature of the hot work and gas testing requirements.

These are recorded by the Permit Authority who completes Section 2.

If equipment isolation is required, the Permit Authority proceeds to the relevant discipline (2A, 2B,2C or 2D), completes the required section(s) and arranges for the necessary isolations to be carried out in the alphabetical order of Section 2 (i.e. 2A before 2B etc).

Each section will record the lock set number used.

SECTION 2A - OPERATIONAL ISOLATION

If operational isolation is required, this is identified in section 2A. The Permit Authority specifies the type of operational isolation required using a Standard Isolation Checklist and marked up PIDs. Non Standard Isolation Checklist must be reviewed by an Isolation Reviewer. The required isolations are then carried out by the Isolation Authority and update the isolation checklist with the Master Isolation Danger Do Operate Tag reference number. The isolation checklist must be dated and signed on each isolation carried out. (Note: The system must be prepared for maintenance which includes hydrocarbon freeing and de-pressurising) Having carried out the isolation, the Isolation Authority returns to the permit issuing area, prints and signs their name to confirm the isolations as complete in section 2A and records the lock set number used on the original Master Isolation Permit and the copies. The Isolation Authority or Permit Authority then places the isolation key in the assigned lock box which is then locked by the Permit Authority.

Note: If the Permit Authority is not available to place the Permit Authority lock on the lock box, the Isolation Authority will maintain the isolation key under their control until such time that the Permit Authority has placed their lock on the lock box.

SECTION 2B - ELECTRICAL ISOLATION

If electrical isolation is required this is identified in section 2B. The electrical Isolation Authority is issued with the Isolation Checklist and a separate Work Permit with the scope of work stating “Carry out isolations/De-isolations for Master Isolation Permit number XXX”. The Permit Authority will authorise Section 2B isolations (after operational isolation completion, if applicable) and state the Work Permit number used to carry out the isolations. The original Master Isolation Permit remains in control of the Permit Authority at the permit issuing area.

On completion of the isolation the electrical Isolation Authority and a field operator will carry out a try step at field to ensure the correct equipment has been isolated where possible. The electrical isolation authority will return to the permit issuing area, handover the isolation key of the electrical isolation locks to the Permit Authority. The electrical isolating authority will record the lock set number used and sign the Completed section on all copies of the Master Isolation Permit. If an isolation checklist was used, the electrical Isolation Authority will be required to sign the isolation checklist and update the isolation checklist with the Master Isolation Danger Do Operate Tag reference number. The electrical Isolation Authority will return the Work Permit used to carry out the isolations.

Note: If the Permit Authority is not available to place the Permit Authority lock on the lock box, the Isolation Authority will maintain the isolation key under their control until such time that the Permit Authority has placed their lock on the lock box.

The Permit Authority locks the electrical isolation key into the correct lock box.

SECTION 2C - INSTRUMENTATION ISOLATION

If instrumentation isolation is required this is identified in section 2C. The instrumentation Isolation Authority is issued with the Isolation Checklist and a separate Work Permit with the scope of work stating “Carry out isolations/De-isolations for Master Isolation Permit number XXX”. The Permit Authority will authorise Section 2C isolations (after operational and electrical isolation completion, if applicable) and state the Work Permit number used to carry out the isolations. The original Master Isolation Permit remains in control of the Permit Authority at the permit issuing area.

Having carried out the isolation, the instrumentation Isolation Authority returns to the permit issuing area, returns the isolation key of the instrument isolation locks to the Permit Authority. The instrumentation Isolation Authority then prints and signs their name in the Completed section, recording the lock set number used on the original Master Isolation Permit and the copies. If an isolation checklist was used, the instrumentation Isolation Authority will be required to sign the isolation checklist and update the isolation checklist with the Master Isolation Danger Do Operate Tag reference number. The instrumentation Isolation Authority will return the Work Permit used to carry out the isolations.

Note:	If the Permit Authority is not available to place the Permit Authority lock on the lock box, the Isolation Authority will maintain the isolation key under their control until such time that the Permit Authority has placed their lock on the lock box.

The Permit Authority locks the instrument isolation key into the correct lock box.

SECTION 2D - MECHANICAL ISOLATION

If mechanical isolation is required, this can be carried out under section 2D. The Permit Authority specifies the type/s of mechanical isolation required by use of spade/ blanking as stated in the isolation checklist and blind list drawing. The Permit Authority confirms that the operational isolations and if required electrical and / or instrumentation isolations are already in place. The mechanical fitter is issued with a separate Work Permit with the scope of work stating “Install Spades/Blinds and remove spools for Master Isolation Permit number XXX”. The Permit Holder and team members will attach their Personal Danger lock and tag to the lock box.

The Permit Authority then authorises the mechanical isolations by authorising Section 2D isolations (after operational, electrical and instrumentation isolation completion, if applicable) and state the Work Permit number used to carry out the isolations.

⚠ WARNING

When breaking into the process an Operation Isolation Authority must be in attendance.

The original Master Isolation Permit remains in place at the permit issuing area. When all the isolations are completed, the mechanical fitter returns to the permit issuing area and signs the Completed by section on all copies of the Master Isolation Permit. Mechanical Isolation Authority may be required to sign the isolation checklist/blind list drawing. The Permit Authority then informs the Operation Isolation Authority to carry out the lock out and tag out in the field for all the mechanical isolations with the Master Isolation Danger Do Operate Tag permit tags. Having carried out the lock and tagging, the Operations Isolation Authority returns to the permit issuing area, prints and signs their name to confirm the isolations as complete in the isolation

checklist or blind list and records the lock set number used on the original Master Isolation Permit and the copies. The Isolation Authority or Permit Authority then places the isolation key in the assigned lock box which is then locked by the Permit Authority.

SECTION 3 – MASTER ISOLATION PERMIT ISSUED

When all the requirements of Section 2 have been completed, the Permit Authority prints and signs their name approving the master isolation work permit, noting the time and date of issue. The Permit Authority will also ensure a reviewer signs the isolation checklist if more isolations were added to the checklist.

SECTION 4 – DE-ISOLATION AUTHORISED

All three disciplines (Mechanical, Instrument & Electrical and Operations) will ensure all permits linked to the Master Isolation Permit have been closed and no other required work is needed within the isolated system. Each supervisor will be required to print and sign their name in this section.

SECTION 5A MECHANICAL DE-ISOLATION

Authorisation for mechanical de-isolation is identified in section 5A. The Permit Authority then signs section 5A of the Master Isolation Permit to authorise the mechanical de-isolation and issues the Master Isolation Permit to the relevant mechanical fitter. As this process requires breaking into process, reinstate of spools or the swinging of blanks and involves hot work (such as usage of cranes, forklifts or generators), this work shall be undertaken under a separate Work Permit with the scope of work stating “Remove spades/blinds and reinstate spools for Permit number XXX”. The Permit Holder and team members will attach their Personal Danger lock and tag to the lock box. The Permit Authority instructs the Operation Isolation Authority to remove the isolation locks and Master Isolation Danger Do Operate Tag which carry the permit number on the mechanical isolations. When mechanical de-isolation is complete, the nominated mechanical fitter prints and signs their name in the de-isolation completion section on the electrical disconnection work permit and all copies. If an isolation check list or blind list was used, the nominated mechanical fitter will be required to sign the isolation checklist / blind list. A nominated Operations Isolation Authority shall verify all isolations are removed.

⚠ WARNING

When breaking into the process an Operation Isolation Authority must be in attendance.

SECTION 5B INSTRUMENTATION RECONNECTION & DE-ISOLATION

Instrumentation reconnection and de-isolation is identified in section 5B and is authorised by the Permit Authority bearing their signature (and the mechanical de-isolation completion, if applicable) to the relevant instrumentation Isolation Authority. The Isolation Authority will be issued with a Work Permit with the scope of work stating “Carry out isolations/de-isolations for Master Isolation Permit number XXX”. Having carried out the de-isolation, the instrumentation de-isolation Authority prints and signs their name in the de-isolation completion section on the Master Isolation Permit and all copies. An isolation checklist may also be required to be signed.

SECTION 5C ELECTRICAL DE-ISOLATION

Electrical de-isolation is identified in section 5C and is authorised by the Permit Authority bearing their signature (and the mechanical and instrument de-isolation completion, if applicable) to the relevant electrical Isolation Authority. The Isolation Authority will be issued with a Work Permit with the scope of work stating “Carry out isolations/de-isolations for Master Isolation Permit number XXX”. Having carried out the de-isolation, the electrical de-isolation Authority prints and signs their name in the de-isolation completion section on the Master Isolation Permit and all copies. An isolation checklist may also be required to be signed.

SECTION 5D OPERATIONAL DE-ISOLATION

In section 5D a Process Operator, trained as an Isolation Authority, is requested to remove associated locks and tags listed on the Isolation Checklist and return the equipment to operational status (if applicable) including LO/LC valves and Hardware Override. Having carried out the de-isolation the Process Operator prints and signs their name in the completion section on the Master Isolation Permit and all copies. The isolation checklist will also be required to be signed.

SECTION 6 – MASTER ISOLATION PERMIT CLOSED

Following the above steps have been completed and after the Permit Authority is satisfied that:

- an acceptable level of work was carried out, and
- the work area has been left in a clean and safe state,

The Permit Authority prints and signs their name to state that the Master Isolation Permit is closed, noting the time and date.

7.7.2 Master Isolation Permit Preparation, Acceptance and Issuing Procedure

1. The Permit Authority identifies any prerequisite activities necessary to be carried out to enable the specified task to be performed safely and identifies all of the necessary precautions and isolations to be performed in that section to ensure the safety of the personnel performing the task. All additional/special instructions relevant to the workplace and the proposed task shall be listed on the Master Permit by the Permit Authority.

2. The Permit Authority then nominates which lock box is to be used by labelling the front of the lock box with the Master Permit number and the task description.

3. The Permit Authority shall place a red “Isolations in Progress Tag” with the yellow Permit Authority isolation lock on the permit lockbox for the duration of the isolation process.

4. The Permit Authority issues the isolation checklist or marked up PID’s to the Isolation Authority (for Operational isolations) who completes all the isolations and ensures all isolations are locked to the correct position. (Note: The system must be prepared for maintenance which includes hydrocarbon freeing and de-pressurising) These isolations are identified in the field by “Master Isolation Danger-Do Not Operate” tags. The Isolation Authority returns to the work permit issuing area and signs all copies of the Master Permit and the original isolation checklist. Keys are locked in the lock box.

5. The Permit Authority issues the white copy of the master permit, isolation checklist and a separate Work Permit to the Electrical and Instrument Isolation Authorities to carry out the isolations/disconnections. These isolations/disconnections are identified in the field by “Master Isolation Danger-Do Not Operate” tags. On completion, the

Electrical and Instrument Isolation Authorities return to the work permit issuing area, record the isolations/disconnections and signs on all copies of the master permit and the original isolation checklist. Keys are locked in the lock box.

6. The Permit Authority issues the white copy of the Master Isolation Permit, a separate Work Permit and a copy of the isolation checklist to the mechanical fitter to carry out the isolations. A nominated Isolation Authority shall accompany the mechanical fitter to identify the spades or blinds. On completion, the mechanical fitter returns to the issuing point and records the isolations and signs all copies of the Master Isolation Permit and the original isolation checklist or blind list. These isolations are identified in the field by 'Master Isolation Danger-Do Not Operate' tags which are attached by the Operation Isolation Authority. Keys are locked in the lock box.

⚠ WARNING

When breaking into the process an Isolation Authority must be in attendance.

7. The Permit Authority then removes the red "Isolations in Progress Tag" attached to the Permit Authority Lock.

8. The white copy of the Master Isolation Permit, the supporting Isolation checklists and any supporting documents shall be stored in the lock box documentation sleeve.

9. The Permit Authority can now issue Permits under the Master Isolation Permit system to carry out work on the equipment or within the sectional isolation with a cross reference to the Master Isolation Permit number. The permits must be filled onto the Master Isolation Work pack document with the date, permit number and work description filled in.

10. Each Permit that is issued shall have its own lock box and documentation sleeve. An Isolation lock (blue) with a Danger Do Not Operate tag with the permit number will be attached (locked) to the Master Isolation Permit lock box. The key will be locked in its own lock box with the yellow Permit Authority isolation lock. This isolation is to be referenced on the permit issued under the Master Isolation Permit.

11. All personnel working under the Permit supported by the Master Isolation Permit will place their Personal Danger Lock with Tag on the lock box or lock jaws attached to the lock box for the Permit they are working under.

12. All Permits associated with a Master Isolation Permit shall be recorded on the Master Isolation Work pack document and updated as soon as permits are closed.

Removal of any isolation points within the Master Isolation Permit must not start until all Permits have been signed off the Master Isolation Work pack document by the Permit Authority.

The only exception is when a change to the isolation of a Master Isolation Permit is required, as described in Section 6.7.3, where all the Permits are suspended while changes are authorised and implemented.

When work is completed the Permits can then be signed off. The blue lock associated with the permit could be removed from the Master Isolation Permit lock box and the Master Isolation Work pack document updated.

When all the Permits are signed as completed and signed off the Master Isolation Work pack document, the completed Permits can be stored for archiving. The Master Isolation Permit can then be authorised for de-isolation.

When reconnection / de-isolations are completed the Master Isolation Permit and the supporting isolation documentation can be stapled together for archiving for two years.

7.7.3 Change of Isolations under a Master Isolation Permit

On occasions, it is necessary to alter the isolations and hence energy status of the safe system of work established under a Master Isolation Permit.

This may be in the case of testing activities or the creation of an additional work activity that is required to be undertaken.

Rather than remove the entire “Master Isolation Permit” isolation and reinstate it with altered or additional isolation points, there is a process to manage the change.

The process shall be to suspend all Permits linked to the Master Isolation Permit, stop all work, remove all personnel and organise removal of all Personal Danger Tags with Locks to ensure the safety of personnel during the change.

The Master Isolation Record of Change form KHP-SF-OHS-070-06 shall be used to authorise changes. Only the Superintendent (or their designate) or Production Manager is eligible to authorise a change to a Master Isolation. This form is to be stored in the documentation sleeve with the other documentation for the Master Isolation Permit.

Before the changes to the isolations on the Master Isolation Permit are performed, the Permit Authority shall place a red “Isolations in Progress Tag” or orange “De-Isolations in Progress Tag” with the yellow Permit Authority lock on the permit lockbox for the duration of the isolation or de-isolation change process.

After the change has been authorised, and the altered isolations or de-isolations has been completed, the changes or additions are noted on the original isolation checklist of the Master Isolation Permit.

Any isolation that existed under the original “Master Isolation Permit” isolations which has been altered shall have a single line drawn through it and any replacement isolation clearly noted immediately below it or added onto an empty line/column in the isolation checklist.

Once the changes have been made and signed off, the Permit Authority shall remove the red “Isolations in Progress Tag” or the orange “De-Isolations in Progress Tag” from the Master Isolation Permit lockbox. Then, all Permits shall be revalidated and all personnel can replace their personal danger locks with tags back onto the permit lock box they were working on and work can recommence.

7.8 CONFINED SPACE DOCUMENTATION PROCEDURE

7.8.1 Confined Space Preparation, Acceptance and Issuing Procedure

The following is a step-by-step description preparing for a CSE and issuing a Confined Space certificate and Work Permit:

1. The Permit Holder informs the Permit Authority of maintenance work in a vessel/area that requires Confined Space entry.

2. Permit Authority will check the system and prepare a Confine Space Entry Certificate and blind list or isolation checklist with all isolations required for the Confined Space entry. Electrical / Process isolations required for the CSE, must be listed on an Isolation Checklist.

   (**Note 1:** If no purging or spading is required, (73.D01 bund gas detection PPMs or CCR Basement work), proceed to **Step 6**.)

3. If process isolations are required to install spades/blanks, Operations will prepare an Isolation Checklist and isolate the system. The vessel is purged and prepared for spading/blinding.

4. Permit Authority to prepare a permit with a lock box stating “Carry out isolations and de-isolations for CSE cert number”. Process Isolation keys to be placed in a lockbox for breaking into the process. (Isolations mentioned in Step 3)

5. Issue the permit “Carry out isolations and de-isolations for CSE cert number” to the Mech to isolate the CSE. Mechanical to place their Personal Lock and Tags on the permit lockbox.

6. Operations & INLEC (if req) to complete Blind list / isolation list for the CSE. (Operations Isolation Authorities will lock and tag all blinds/manways or valves with CSE tags)

   (**Note 1:** 73.D01 – Isolate the fire water supply with a lock and CSE tag. CCR Basement – Isolate the FM-200 system with a lock and CSE tag. If no Mechanical / INLEC isolations required, proceed to **Step 7**)

7. Isolation Authorities to hand the CSE isolation keys to the Permit Authority. The keys will be locked in a lockbox stating “Confined Space Entry for EquipmentXXXX”.

8. The Confined Space Certificate will be updated with the total number of isolations and the lock set key numbers. Operations Isolation Authority will sign the CSE certificate that isolations and tagging has been carried out. Operations will start the vessel ventilation (if req).

   (**Note 1:** 73.D01 bund and CCR Basement CSE. Proceed to **Step 10**)

9. The Permit Authority uses a CSE tag with a blue lock and locks the “Carry out isolations and de-isolations for CSE cert number” permit lockbox. This key is placed in the “Confined Space for EquipmentXXXX” lockbox. (This will ensure the CSE blinds cannot be removed till the CSE cert is closed.)

10. The Permit Authority will prepare the permit and a lockbox for the task in the confined space. A blue lock with a Danger Do Not Operate tag stating the permit number will be locked onto the “Confine Space for EquipmentXXXX” lockbox”. This key will be locked in the permit lockbox for the task in the CSE. (This will ensure the CSE blinds cannot be removed till the permit is closed.)

    a. If multiple permits are issued for the same CSE certificate, the Step 10 process will be followed and each permit lockbox will contain a key.

11. The Permit Authority will complete the Confined Space Entry Certificate stating all conditions, precautions and safety equipment for the entry. The ventilation must be stopped before gas testing.

12. Once the gas test is completed and results updated in the CSE document, the certificate and permit will be issued. The Permit Holder and Team Members will lock onto the permit lock box. The Safety Watch will lock onto the CSE lock box.

13. Once all permits are closed and the Step 10 keys removed from the CSE lockbox, the CSE could be closed and the de-isolation process could be carried out.

7.9 FREMANTLE PORTS / KLEENHEAT PERMIT PROCESS

7.9.1 Fremantle Ports Jetty Handover Permit Procedure

1. Kleenheat request an early access to the Jetty Route compound under EC06 conveyor belt system for pre-shipping work.
2. Fremantle Ports representative will raise a permit as per Fremantle Ports procedure PR 1566. (FPA in-charge or Shift supervisor)
3. Fremantle Ports electrician will isolate EC06 and create a **lockbox**.
4. Kleenheat Supervisor applies a “yellow” lock and the Wesfarmers Isolation tag to the **Master Lock Out Board** for the EC06 lockbox. (See Wesfarmers tag picture below)
5. Kleenheat Supervisor and team members will sign onto the permit and apply a lock and Fremantle Ports Personal Danger tags to the **lockbox**.
6. Kleenheat Supervisor and team members can start working at the Jetty Route compound.
7. Kleenheat Supervisor and team members to sign off the permit and remove Personal Danger locks/tags from the lockbox once no work is required at the Jetty Route compound. **Note:** The yellow lock and tag will still be attached to the **Master Lock Out Board**.
8. If the jetty is still not handed over and a new Kleenheat team is required to carry out work at the Jetty Route compound, the team will sign onto the FP permit and apply red locks and Fremantle Ports Personal Danger tags to the **lockbox.**
9. Kleenheat and Fremantle Ports to complete the official jetty handover. A yellow lock will be placed onto the **Handover Lockbox**. This lockbox will be kept by Kleenheat till the shipping activities are completed.
10. Kleenheat Supervisor returns to the FPA permit office and remove the yellow lock and the Wesfarmers Isolation tag from the **Master Lock Out Board** and signs to acknowledge he has done so as per Fremantle Ports procedure PR 717 Step 49. The Kleenheat Supervisor and team members will also sign off the permit and remove

Personal Danger locks/tags from the **lockbox**. (This step is done immediately after taking over the jetty from FPA)

Wesfarmers Tag

Master Lock Out Board

EC06 Lockbox with locks and tags

8. ISOLATIONS

8.1 ISOLATION TAGGING AND LOCKOUT

When isolations are performed as part of the hazard controls for tasks conducted under a Permit, an Isolation checklist is completed and forms part of the Permit documentation.

All equipment requiring isolation and all isolation points (including locations for insertion of blanks, removal of spool pieces) shall be uniquely and clearly identified and provide an attachment point (immediately upstream of the isolation point in the case of spool or blank isolations) for isolation locks and tags.

The aim of each plant area shall be to uniquely label each isolation point in the field and on drawings. Until all labelling is in place, the isolation points shall be uniquely labelled on the Isolation Checklist and on the isolation tags in the field.

For isolation points requiring the insertion of a blank, removal of a spool or any other item that does not have an attachment point, the isolation lock and tag shall be connected in an acceptably robust way that does not easily allow the removal of the isolation lock and tag without use of the isolation lock key. (e.g.; using a hasp, lock and tag fitted onto the bolt that is used to hold a blank onto a flange face). The intent is to ensure the field isolation is clearly labelled, and therefore these isolation points are not unintentionally removed.

All isolations are performed by an Isolation Authority. Non-Standard Isolation Checklist are reviewed by a person different to the person who created the Isolation Checklist, this person is known as the Isolation Reviewer. This review determines if the isolations is adequate for the scope of work. The Isolation Reviewer shall be a qualified Isolation Authority. A Standard Isolation Checklist have their isolation points verified during their development and have been authorised as a controlled document.

Isolations shall always be applied to the energy source and is not permitted to rely on control circuitry or control valves. Push buttons, stop switches, interlocks, emergency stops, pilot circuitry lanyards, etc. shall not be used as a means of isolation.

When isolating there is a requirement to confirm that a zero-energy state has been created by either trying to start the system or testing the energy in some way.

If zero energy state cannot be reached a separate risk assessment will be carried out to determine how the energies have been reduced to 'As Low as Reasonably Practicable' (ALARP) in each situation and the residual risks will be managed.

8.2 PERFORMING AND PROVING AN ISOLATION

Following advice from a Permit Authority that the Permit hazard controls include isolation of energies, the following shall occur in order:

- The Permit Authority will place the work permit or electrical disconnection work permit in the lock box sleeve and attach the red Isolation in Progress tag to the lock box.
- The Permit Authority authorises the isolations of the Permit and then directs the Isolation Authority to commence the isolations.
- An Isolation Authority shall carry out isolation of energies they are authorised to perform. Isolation of each isolation point must (wherever possible) be provided by the Isolation Authority and the Isolation Checklist signed.

  Proving of Isolation = Proving + Try Step.

- Proving process isolation shall involve checking pressure indicators, drains or vent valves to ascertain that energies have been removed.

- Proving an electrical isolation requires evidence of a physical break in the electrical supply. If the use of a de-contactor, removal of fuses, visible break contactor or phase lights is not possible, continuity testing by an electrician is required to establish proof of isolation.

  A 'Try to Start' or 'Try Step' shall be used to fully confirm the isolation.

- All isolation points will be padlocked with a blue isolation lock, with electrical and instrument isolations using a green isolation lock. All isolation locks will have a Danger Do Not Operate Tag or Master Isolation Danger Do Not Operate Tags attached which references the Permit number and date.

Note:	Electrical Isolations will have a multi lock device fitted when first isolated to allow additional isolation to the same drive, if required.

- An Isolation Authority shall return the completed Isolation checklist to the Permit Authority and place any isolation lock key(s) in the correctly labelled permit lock box board.

- The isolation authority will sign on all copies of the Permit (Isolation section).

- The Permit Authority shall check that the relevant isolation checklist is complete and sign off as completed.

- A Permit Authority shall ensure that all the isolation key(s) are locked in the lockbox by placing a Permit Authority's yellow lock on the lockbox. The Permit Authority shall remove the red "Isolations in Progress Tag" from the Permit lockbox.

The Permit Authority's key shall be held at all times by the Permit Authority.

8.3 REMOVING AN ISOLATION

When the task is completed, the Permit Authority initiates the requirement to remove the isolation/s. The following shall occur in order:

1. All Personal Danger locks and tags shall be removed by the individual working under the Permit from the Permit lock box Board. The Permit Holder and all Team Members sign off the job on all copies of the Permit.
2. The Permit Authority authorises the de-isolation of the Permit and then directs the Isolation Authority to commence de-isolation. The Permit Authority accesses the isolation key(s) from the lock box and presents this to the Isolation Authority to commence de-isolation.
3. The Permit Authority shall then place an orange "De-Isolations in Progress Tag" with the yellow Permit Authority lock on the permit lockbox for the duration of the de-isolation process.
4. The Isolation Authority commences removal of the isolation lock(s) and tag(s).
5. When all the isolation locks and tags have been removed and the Isolation checklist signed, the Isolation Authority shall return to the Permit office.
6. The isolation authority will sign on all copies of the Permit (De-isolation section).
7. When the Permit Authority has confirmed all de-isolations have been completed and signed off, the Permit Authority shall remove the orange "De-Isolations in Progress Tag" from the Permit lockbox.

8.4 WORK NOT REQUIRING ISOLATIONS

Work in the permit area that does not require isolations will then not require the use of personal locks or lock boxes. The Permit Authority will discuss the scope of work with the Permit Holder to ensure no isolations are required.

All non-isolation Permits are kept under the control of the Permit Authority in the permit issuing area and stored in the documentation sleeves of the Work Permit Board as either Active or Non-active Permits.

8.5 FAULT FINDING

When a permit is issued to conduct fault finding, the individual performing the fault finding requires the equipment to be in its normal operating mode to allow for the fault to be identified, and as such, no isolations will be required by the electrical or instrument personnel. There is no need for the permit to state "own isolation", as this implies that an isolation is required. Therefore, a permit will be raised with the scope of work identifying that fault finding will be conducted on a specific piece of equipment or instrument.

Once the fault has been identified the permit for fault finding is closed and another permit to repair the fault is issued, as the scope of work has changed.

8.6 ISOLATION CHECKLIST

Isolation checklists shall be created as a permanent record of isolations required to safely allow a particular scope of work.

Controlled documents versions are referred as Standard Isolation Checklist and are located in DOCOVA. Refer to section 2.5.

Documents not located in DOCOVA are referred as Non-Standard Isolation Checklist. These documents must be reviewed by an Isolation Authority before use.

The Isolation checklist shall include any notes or additional comments in relation to isolation activities such as: required venting of stored energy, securing of rotor / fan blades, electrical isolation, disconnecting, bleeding of equipment or lines. It will identify any connections to the DCS.

Note:	Where equipment tag numbers are not available, then sequentially number each process isolation point onto marked up P&ID's. Each number is to be referenced on the Isolation Tags in the field.

For complex, irregular isolations, or those that must be done sequentially, all isolations shall have a drawing illustrating the isolation points. These shall be stapled to the Permit.

A drawing may consist of any or all of the following:

- A copy of the Piping and Instrument Diagrams (P&ID's),
- A schematic drawing,
- A computer-generated drawing showing isolation points.

Note:	The person who develops the Non Standard Isolation Checklist cannot be the person who validates the isolation list for the appropriate Scope of Work. This is the role of a different Isolation Authority being responsible as a Reviewer.

Note:	If a Standard Isolation Checklists needs to be altered, a second Isolation Authority must review the changes.

8.7 PERMIT HOLDER ISOLATIONS

This section describes the procedure to be followed to allow for small tasks that are best suited to have the isolations controlled by the Permit Holder or approved contractors (who has been trained and deemed competent as an Isolating Authority for the area and equipment). This work is typically carried out by a trade discipline i.e. Electrical & Instrument personnel that are carrying out calibration checks or tuning on equipment in the plant.

⚠ WARNING

WHEN ISOLATIONS ARE UNDER THE PERMIT HOLDER'S CONTROL, NO OTHER WORK GROUPS SHALL BE PERMITTED TO WORK UNDER THE ISOLATION.

The Permit Authority consults with the Permit Holder to ensure the isolation valves could only isolate flow/energy to the instrument/equipment and that they will not adversely affect the plant process.

The isolations can be controlled in two ways,

a) Direct line of sight of the Permit Holder.

b) Use of Personal Danger Lock and Tag. The Permit Holder shall be permitted to use his Personal Danger Lock for temporary isolations when the job requires energy to be isolated or de-isolated during the work permit process when the isolation is not in the line of sight. No other work shall be permitted on that equipment or adjacent to it. The Permit Holder will ensure that all workers assisting with the task are signed on as a team member and have also locked onto the point of isolation with the Permit Holder.

Approved contractors could carry out Permit Holder Isolations i.e. the water treatment plant or air conditioning units which do not require access to the Switch room/MCC isolation points and isolation valves to instruments/equipment.

If these conditions are all confirmed, the permit can be issued marked in Section 2 as "Permit Holder Isolations".

The permit will be issued as per normal procedure; however there will be no isolations keys locked in the lock box. The Permit Holder is responsible for returning the instrument to its original state.

Note: When issuing a permit that involves Permit Holder Isolations, the Permit Authority is to write Permit Holder Isolations on the permit.

Note: During planned shutdown activities, approved INLEC contractors who have been deemed competent by their company as an Isolating Authority could carry out Permit Holder Isolations. These isolations must not require access to the Switch room/MCC. The approved list of contractors must be made available for the Permit Authority.

8.8 PERSONAL DANGER LOCKS AND TAGS

The Personal Danger lock and tag is used to protect the person named on the tag. Personal Danger Tags are used to indicate which personnel are working on equipment and who could be put at risk if the equipment starts. The Personal Danger tag is red, black and white in colour and states "Do Not Operate" and is always attached to a Personal Danger Lock. It is a warning to all personnel that the equipment shall not be operated until the Personal Danger Lock with Tag has been removed from the Permit Lock Box Board or Permit Holder Isolations by the person named on the tag.

The Personal Danger locks are red and issued to all employees on successful completion of Permit to Work training (Module 2 – Permit Holder).

A person working under a Permit (Permit Holder and Team Members) shall attach their Personal Danger lock with the tag and place these on the correct Permit Lock Box Board prior to commencing the task.

After the task described on the Permit is completed, the Permit Holder will check that the plant and equipment is left in a safe condition and the area is clean and tidy. All workers under the Permit then remove their Personal Danger locks with tags from the Permit Lock Box Board at the end of each working shift and on completion of the task, and also sign off the blue copy of the permit.

Where the person named on a Personal Danger Tag has not removed their lock with tag at the time a Permit Holder wishes to sign off a Permit, the Permit Holder is responsible for locating the owner of the Personal Danger lock. To leave a Personal Danger lock with tag on the Permit Lock Box Board and leave the site is a breach of the Permit to Work System and is a disciplinary offence.

If the Permit Holder cannot locate / contact the owner of the Personal Danger lock or if the Personal Danger Lock key has been misplaced, then the Authorisation Record Of Removing Locks Form KHP-SF-OHS-070-01must be followed.

⚠ WARNING

TO REMOVE ANOTHER PERSON'S PERSONAL DANGER LOCK WITH TAG IS AN EXTREMELY SERIOUS DISCIPLINARY OFFENCE.

9. ELECTRICAL ISOLATIONS

An employee shall only touch the high voltage conductors of any apparatus when all the following conditions are met:

a) They have a signed Permit;
b) They are inspecting work covered by a Permit;
c) The apparatus is/has been declared "Out of Service"
d) They are working under special circumstances detailed in clause 4.2.3 of the "High Voltage Electrical Safety Procedures";
e) They are working in pairs and;
f) They are accredited as HV compliant.

(Full details of high voltage isolation procedures can be found in the "High Voltage Electrical Safety Procedure" document.)

9.1 APPARATUS "OUT OF SERVICE" BY DECLARATION

g) High voltage apparatus may be declared "Out of Service" by the Isolation Authority when it has been disconnected from all sources of supply by the removal of a portion of each conductor appropriate to the voltage and where applicable by the prevention of rotation of the prime mover. The "Out of Service" declaration shall be in writing, using the "Out of Service" Register and shall include a statement of the condition of all relevant auxiliary equipment and the affixing of an "Out of Service" Tag.
h) Work on apparatus declared "Out of Service" shall require the issue of a Permit.
i) Notwithstanding the fact that the apparatus has been declared disconnected from all sources of supply, due regard shall be given to the possibility of inadvertent

energising from adjacent apparatus, induction, lightning, static charges, or other means.

9.2 LOW VOLTAGE ISOLATIONS PROCESS

Low voltage isolation will be carried out by a trained Electrical Isolation Authority following the procedure below.

1. PERMIT ISSUING AREA

The Electrical Isolation Authority must obtain authorisation for the equipment to be isolated from the Permit Authority.

If electrical disconnection is required, then the blue electrical disconnection work permit for electrical disconnection will be issued.

2. MOTOR CONTROL CENTRE (MCC) & FIELD EQUIPMENT ROOM (FER)

Using the green copy of the Permit and/or an isolation checklist, the Isolation Authority identifies the appropriate motor starter/isolator location. Switch off the main isolator, withdraw motor starter (where applicable), lock off and fasten a legibly completed 'Danger-Do Not Operate' or 'Master Isolation Danger-Do Not Operate' tag.

3. FIELD EQUIPMENT

Only an electrician can confirm the isolation has been performed correctly by using a test meter.

If electrical disconnection is specified, the blue Electrical Disconnection Work Permit will be used for disconnection of field electrical cabling as the blue Electrical Disconnection Work Permit covers re-connection and direction testing.

4. PERMIT ISSUING AREA

Return the copy of the Permit to the Permit Authority, with section 2 of the Permit completed. Sign the original Permit and all copies as isolations completed.

9.3 LOW VOLTAGE DE-ISOLATION PROCESS

Low voltage de-isolation will be carried out by a trained Electrical Isolation Authority following the procedure below:

1. PERMIT ISSUING AREA

Obtain the original copy of the Permit that relates to the equipment that is to be de-isolated from the Permit Authority.

Using the Permit, identify the appropriate equipment and visually check it for electrical safety.

If electrical disconnection has taken place, reconnect the field electrical cabling, and remove the isolation lock with 'Danger-Do Not Operate' tag. When an electrical motor has been disconnected, prior to re-connecting the mechanical coupling, a direction check may be required to determine the correct rotation of the motor. This should have been completed in section 5 of the blue Electrical Disconnection Work Permit.

2. MOTOR CONTROL CENTRE (MCC) & FIELD EQUIPMENT ROOM

Using the Permit, identify the appropriate motor starter/isolator. Remove the isolation lock with ‘Danger-Do Not Operate' tag, lock and rack module into the switchboard. Turn isolator to the 'On' position.

3. FIELD EQUIPMENT

Remove the isolation lock with 'Danger-Do Not Operate' tags leaving the equipment ready for local starting.

4. PERMIT ISSUING AREA

Return the original copy of the Permit to the Permit Authority and sign all copies of the Permit.

10. RECORD KEEPING

All copies of the Permit and associated documentation are to be retained for a period of two (2) years. After this time they are to be disposed.

The method of how this documentation will be stored, will be decided by the location, however, for ease, once the Permit has been closed, it can be stored in an archive box which must be labelled with the month and year of the first and last Permit stored in each archive box.

11. DISCIPLINE AND CONSEQUENCES

The Permit System protects all personnel working in operational areas of the Kleenheat Production Facility. Compliance with this Permit to Work system Guide Manual is a condition of working at the Kleenheat Production Facility.

A breach of the Permit to Work system may result in disciplinary action which could lead to termination of employment.

12. MONITORING AND REVIEW

The Permit to Work System is a live system of documentation and procedures. To facilitate the ongoing improvement of the system a periodic review of the Permit to Work System will be carried out every 24 months.

PTW issues / improvements can be raised in Monthly Safety meetings, as well as Safety Representative meeting(s) formally held.

12.1 SPOT CHECKS

Managers and supervisors from various departments (management, maintenance, engineering, and operations) will have to perform regular spot checks of active Permits and will include:

- Review of the Permit documentation in the permit issuing area and Work Permit Boards or Permit Lock Box Board.
- Review of the JSA used with the permit

- Confirmation that the task being performed is consistent with the written scope of work and that the hazard controls defined in the Permit remain in place. A Work Permit Spot Check sheet could be used to assist in the spot checks.

PTW spot checks form part of individual as well as team commitment to safety, and the requirement to perform checks on the PTW system are reflected in; operational duties, PDRs, Team STIPs targets, Business Scorecards, and published audit plans. The frequency of these spot checks will be determined by the Safety Department in conjunction with the supervisory team at the Kleenheat Production Facility.

12.2 AUDITS

A comprehensive Permit to Work System audit will be conducted as per the WesCEF auditing process.

Auditing results shall be communicated to the Production Manager and Operations Superintendent and at the shift controllers meeting.

13. OVERVIEW OF ISOLATION

All isolation activities shall be carried out to help develop and maintain a safe working Procedures. These Procedures specifies the control process for implementing and checking of a safe and effective Isolation.

The Procedures shall be based upon the objective to secure plant and equipment so that the risk of an uncontrolled release to atmosphere with consequent injury to personnel or damage to plant / equipment or the environment is reduced to as low as reasonably practicable (ALARP). This should be used along with common sense, technical judgement and experience.

There may be times when the desired standard of isolation cannot be achieved (e.g. insufficient isolation points, or the isolation points available do not provide effective isolation) and a lower level of integrity has to be accepted. All instances of this shall be appropriately analysed by a further risk assessment and authorised prior to a Permit being issued. In all situations the final set of hazard controls implemented prior to commencing work shall provide an acceptable level of safety for people, plant and the environment. To satisfy long term improvement to the site isolation facilities, an Engineering Change Proposal (ECP) should be raised for upgrade of isolation equipment.

Refer to the KPF Plant Isolation Standard KHP-OP-PRD-000-04 for more information.

This section deals primarily with mechanical and process isolations for intrusive work and not electrical isolations.

13.1 DEFINITIONS

Term	Definition
Blank Flange	A component for closing an open end of pipework which is rated to the same standard as the flange to which it is fitted
Bleed, Drain or Vent Valve	A valve for draining liquids, venting gas or monitoring pressure for confirmation of isolation valve integrity
Block Valve	A valve which provides a tight shut-off for isolation purposes

Double Block and Bleed	An isolation method consisting of an arrangement of two block valves with a bleed valve located in between the two block valves
Isolation	The separation of plant from every source of energy in such a way that separation is secure
Isolation Procedures	A system incorporating three key components – management arrangements, risk control procedures and working level practices, to ensure hazardous substances are not released nor people or the environment exposed to risks during the maintenance or repair of plant and equipment
RA	Risk Assessment
Slipring	A spacer ring installed in pipework to facilitate the insertion of a spade
Spade (slip-plate)	A solid plate made of the same material and rating as the flange, for insertion into pipework to secure isolation
Spectacle Blind	A combined spade and slip ring in figure 8 shape rated to match flange fittings
Long Term Isolation	An isolation that remains in place after Permit cancellation and carries an “Out of Service “ tag

13.2 GENERAL

Mechanical isolation is the prevention of energy movement between equipment parts in the work area. This requires the application of some or all of the following provisions:

- Positive isolation from any process or utility (air or other) drive source
- Disconnection of mechanical couplings and drive shafts
- The fitting of physical stops between moving parts to prevent inadvertent movement.

Process isolation refers to the isolation of various process substances (solids, liquids and gases) to allow intrusive work, confined space entry and various other works. Wherever practicable, work should be carried out on units or systems that have been totally shutdown, isolated, depressurised, drained and freed from flammable, corrosive, asphyxiate and toxic material.

The primary objective is to use the highest level of isolation integrity which is reasonably practicable.

The adequacy of isolations should reflect the reasonably foreseeable risk and the consequences should that risk be realised.

If it can be shown that the cost of adopting a more secure method of isolation is not disproportionate to the benefit, in terms of risk reduction, the more secure isolation method should be used.

Where it is determined during the risk assessment process that the exposure to hazards in achieving the required standard of isolation may be greater than the exposure to the hazards in carrying out the intrusive work i.e. time, access and location of isolation points etc, the risk assessment process shall be used to determine a suitable alternative method.

Isolations shall be secure throughout the duration of the activity and be adequately tested to prove their effectiveness.

Plant and equipment shall be clearly identified. Isolation documentation shall be developed according to the Permit to Work requirements.

Personnel shall be proven competent in their knowledge and understanding of hazards, the plant and equipment and the skills necessary to effect, prove and remove isolations. By having completed the structured training program.

To allow for situations when a total process shutdown is not possible, the system design incorporates facilities to adequately isolate individual units or sub-systems from live plant in order to protect personnel and equipment.

The Permit Authority shall assess the implications of any potential ignition source release from isolations with other work planned in the same vicinity.

When carrying out isolations the following general rules apply:

- The valves closest to the equipment should be used.
- Some process plant and equipment is potentially dangerous if valves that are part of the isolation procedures are not operated in the correct sequence. This sequence shall be defined in the Isolation Procedures.
- Do not spade off Pressure Safety Valves until the equipment or vessel is depressurised and adequate vents are open to prevent over pressurising equipment.
- Ensure that no gas or liquid is trapped in sections that do not have pressure protection or thermal release. In certain circumstances pressure build up due to increase in ambient temperature can lead to catastrophic failure of equipment.

Caution must be taken when performing mechanical isolations as some old gaskets still remain in the system and have the potential of containing asbestos.

13.3 HARDWARE OVERRIDES

An override is an intentional deactivation, bypass of, or temporary change to any part of a system including:

Bypass of hardware safety shutdown systems

Bypass of Fire Gas protection system

Refer to Process Hardware Override Procedure KHP-OP-LPG-011-112.

13.4 VALVES

Valves provide the simplest form of isolation device. Their advantages are:

- They are already installed

- They are quick to use
- Isolations can be easily removed to reinstate plant
- The disadvantages of using valves include the following:
- They may not provide a tight shut-off due to seal damage
- Positive indication of complete isolation is not always available
- They must be locked off to prevent inadvertent operation
- They may not be in the optimum position, resulting in large inventories beyond the isolation

Only use gate, knife, plug, globe or ball valves which provide a reliable, positive, tight shut-off seal for isolations of hazardous substances.

Modulating control valves and butterfly valves are only suitable for non-hazardous systems as they may not always provide a tight shut-off. (Note: Pneumatically operated butterfly valves should be mechanically locked in the isolated position)

Manual actuation is preferred with a lockable closed position and position indication.

Spectacle Blind

Pneumatically actuated valves (not including modulating control valves) can be used for primary isolation purposes if their fail-safe position matches their isolation function. When used as an isolation valve, the instrument air supply shall be isolated and de-pressured to atmosphere.

When a power-actuated valve is to be used as part of isolation, the actuating mechanism power supply shall be isolated and disabled for the duration of the isolation.

Blowdown (fail open) valves require a reliable energy source to provide closure and should be mechanically locked in the isolated position. Their use must be carefully considered as part of the risk assessment.

Pressure safety valves, check valves or non-return valves, including latch swing check valves must never be used as primary isolation.

Double wedge gate, parallel expanding gate or double seal ball valves, which provide a double seal in a single valve body with a bleed in between, can be used. However, care should be taken in their application. Such valves should only be used in preference to a double block and bleed isolation method after increased risks have been considered in the risk assessment.

Metal seat valves are more reliable than plastic or elastomer but have a higher minimum leakage rate. Elastomeric valves or seats have a lower leakage rate when new but are not as reliable.

13.5 SPADES AND SPECTACLE BLINDS

Spades and spectacle blinds provide a mechanically simple means of physically isolating plant.

The advantages are:

- Simplicity
- Low cost

- Positive indication of presence
- Positive isolation.

The disadvantages are:

- Relatively slow to install and require valve isolation for insertion and removal. Such isolations may also be remote from the work site, making control/monitoring more difficult
- They may be in a non-optimum position
- Care is needed when installing and removing them as pressure can build up behind them.

They shall be of adequate design and manufacture. They shall be clearly marked as to size and
material together with the class rating for which they are suitable.

They shall be checked before use to ensure they are suitable for the isolation and in good condition.

Gaskets used shall be in good condition and correctly rated for the particular service.

When not in use they should be maintained in a controlled storage system.

Spades can easily be mistaken for spacers when they are installed in line . A spade will have a solid circle on the top of the identifying spigot, where a spacer will have a hollow circle on the identifying spigot as pictured below.

Spacer with the hollow circle on the identifying spigot

Spade showing a solid yellow circle on the identifying spigot

13.6 BLANK FLANGE

Blank flanges are used when some of the plant is physically disconnected as part of the work to be done or as part of the isolation. The advantages are:

- Simplicity
- Low cost
- Clear indication of presence
- Positive isolation
- Clear indication of even minor failure.

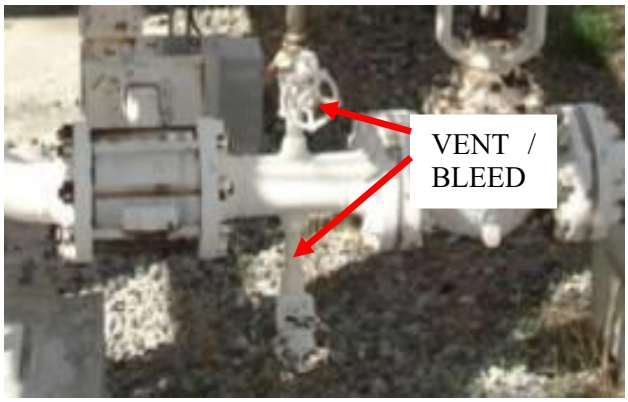
The disadvantages are:

- Care is needed when installing and removing them as pressure can build up behind them
- They are slow to install and remove.

They shall be manufactured from material consistent with the service conditions and clearly marked with the system rating. All blank flanges shall be applied within their line rating capacity.

Gaskets used shall be in good condition and correctly rated for the particular service.

13.7 BLEEDS AND VENTS



Bleeds and vents allow the safe depressurisation of parts of the plant when it has been isolated
and also enable the integrity of isolations to be checked. Inadequate provision of bleeds or vents may compromise the safety of isolation.
For process plant in hazardous areas, bleeds or vents which discharge locally should not be left open, as double valve isolation will have effectively been downgraded to a single valve isolation.

The selection, provision and design of bleeds and vents will depend on the configuration of the plant and the type of isolation to be used, but certain common points should be considered:

- Be easily accessible for checking
- Be mechanically robust
- Be of sufficient size and design to minimise the possibility of becoming blocked in service

- Bleeds used for depressurising hydrocarbons will generally lead to a disposal system that
  may itself be subject to variable backpressures. Having depressurised the system, some
  small controllable venting facility to atmosphere should be used to ensure that no pressure remains
- Vents that are connected to closed venting systems that may become pressurised, such as
  closed drains or flares, must be closed afterwards to maintain the isolation envelope.

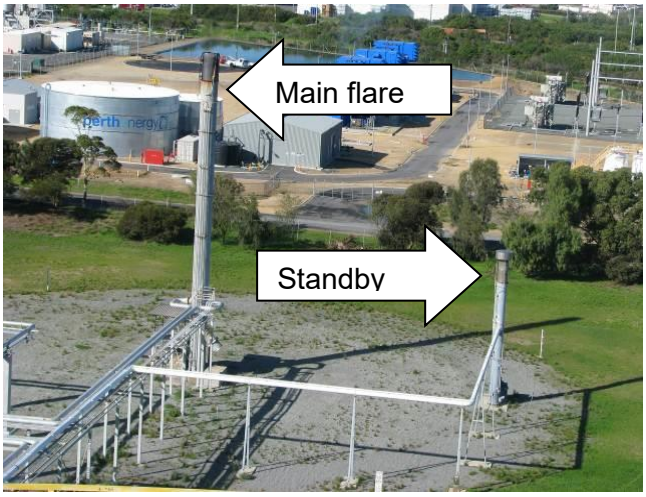
13.8 VENTING AND FLARING

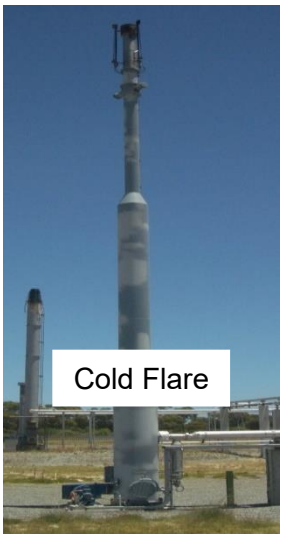
The following need to be considered when planning to vent large volumes of gas from high pressure systems:

- Only one system is being depressurized at one time to prevent pressurising the second system.
- Ignition by stray electrical currents or static electricity must be avoided by fitting earthing straps. All potential ignition sources need to be avoided and during periods of atmospheric electrical disturbance there should not be any venting of flammable gases.
- The dispersal of gas or the formation of gas clouds that may gather at ground level and low points at or near areas of habitation. They may also be carried a considerable distance from the point of venting due to wind and or other atmospheric effects.
- Hydrate formation, valve freezing or embrittlement effects on steel pipework.
- The effect of noise.
- The asphyxiating effects of vented gases.

Liquids may be drained from process vessels and pipework. Liquids may also be pumped out of a process system or pipeline or away from a section to be worked on by using nitrogen or an inert substance. For all cases, the following need to be considered:

- The asphyxiating effects of inert gases
- Volatile vapours given off from a liquid
- Protection of reception facilities from over pressurisation or over filling
- Vacuum effects within vessels/equipment during draining
- Drainage of valve cavities (ball valves etc), dead legs, valve pits
- Disposal of pipeline fluids, contaminated water
- Blocking of drain points by debris
- Hydrostatic load on the pipeline.
- Cold embrittlement in piping / vessels





13.9 PURGING

The content of plant or pipelines may need to be removed and the equipment purged before the installation of isolations. The purge rate needs to be controlled so that the contents are satisfactorily removed, taking special care to deal with low points and dead legs. Factors influencing the method of purge are:

- The contents of the pressure system
- The physical layout of the system or change in elevations
- The asphyxiating effects of purge gases and the need to minimise the volume of toxic or flammable liquids released to the environment
- The stratification or mixing effects between transported fluid and purge gas if the purge rate is not properly controlled.

Nitrogen may be used for removing flammable gases. A correct purging sequence is vital, i.e. flammable gas, nitrogen purge, test for any residual flammable gas, air purge with the reverse sequence on reinstatement. Vaporised nitrogen under pressure can be effective in purging liquids.

14. CUTTING, DRILLING INTO HAZARDOUS PIPELINES

This guide has been developed to reduce the risk of injury or incident due to cutting, drilling or hot tapping into hazardous pipelines.

Refer to Breaking into Hazardous Pipelines procedure KHP-GM-OHS-070-10 for more information.

14.1 HAZARDOUS PIPELINE

A hazardous pipeline is any pipeline or inline equipment item that could potentially contain:

- stored energy,
- a hazardous substance. A hazardous substance refers to any chemical or material that possesses a classification under the NOHSC criteria and which possess any of the following characteristics:

  - toxicity,
  - corrosive or reactive state,
  - human sensitivity, and/or
  - explosive or combustible state
- Temperature less than -40°C
- Temperature more than 60°C

14.2 HAZARDOUS SUBSTANCE CLASSES

Recommended standards for each class of hazardous material are defined below.

CLASS 1 - substances are hazardous because of their physical condition, e.g.: explosives. None onsite.

CLASS 2 - substances are hazardous because of their chemical properties, e.g.: Natural Gas- Ethane-Methane

CLASS 3 - substances are hazardous because of the possibility that they may produce toxic gas in high concentrations, e.g.: Hydrocarbon Liquids - Condensate

14.3 PIPELINE MARKING

Pipeline marking shall be used by attaching the “Location for Cutting” Tag at the exact location of where the pipes is to be broken into. The tag contains relevant information about the break in including:

- Work Permit Number
- Hazardous Material in the Pipe
- Name and signature of the KPF Engineer placing the tag at the break in point.
- Date tag is hung
- Date tag is valid to
- Name and signature of the Permit Holder (If a Permit Holder has not been designated at the time of the pipe marking, the Maintenance supervisor must witness the break in point and sign the tag)

The tags will always be completed with a permanent marker pen.

Refer to Breaking into Hazardous Pipelines procedure KHP-GM-OHS-070-10 for more information.

14.4 PREPARATION PRIOR TO COMMENCING THE JOB

- Identification of Cut-In location
- Job Safety Analysis (JSA) developed and must include a person that understands the process in the area and the hazardous materials involved.
- Hazardous Pipeline Isolation and Purging

- Procedure for Hot Tapping
- Permit preparation including all required documents. Permit Holder understands the Hot Work gas testing requirements for the task.

Refer to Breaking into Hazardous Pipelines procedure KHP-GM-OHS-070-10 for more information.

If the person(s) physically carrying out the cutting tasks has(have) not witness the requirements above, the person must report to the Permit Authority and verify the break in (cut-in) location.

IF AN EXTREME RISK IS IDENTIFIED TASK MUST NOT OCCUR.

HOT WORK

Cutting, drilling or hot tapping into a hazardous pipeline using hot work methods will require a Hot Work Certificate and a Permit. Before cutting, drilling or hot tapping into any pipeline using methods involving a possible ignition source, i.e. grinding or oxy cutting, ensure that the residual contents or atmosphere within the pipe is not flammable or explosive.

IF THERE IS ANY DOUBT ABOUT PRESENCE OF FLAMMABLE OR EXPLOSIVE SUBSTANCES INSIDE THE PIPELINE, DO NOT USE HOT WORK METHODS.

15. RESOURCES

Confined Space Procedure KHP-GM-OHS- 070-02

KPF Plant Isolation Standard KHP-OP-PRD-000-04

Kleenheat Work Permit KHP-PF-OHS-070-07

Electrical Disconnection Permit KHP-PF-OHS-070-01

Master Isolation Permit KHP-PF-OHS-070-04

Master Isolation Record of Change KHP-SF-OHS-070-06

Master Isolation Workpack KHP-SF-OHS-070-05

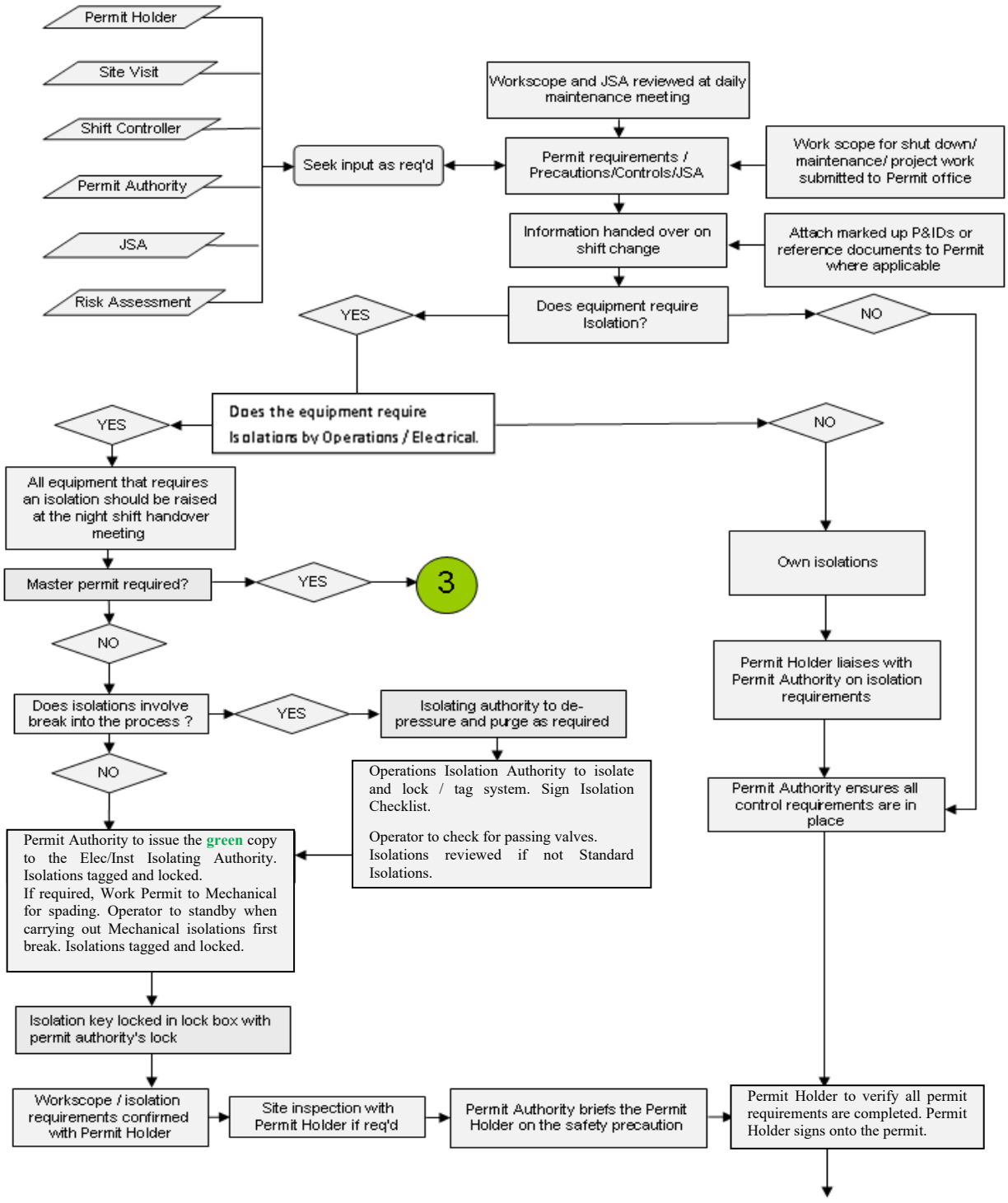
Isolation Checklist Template

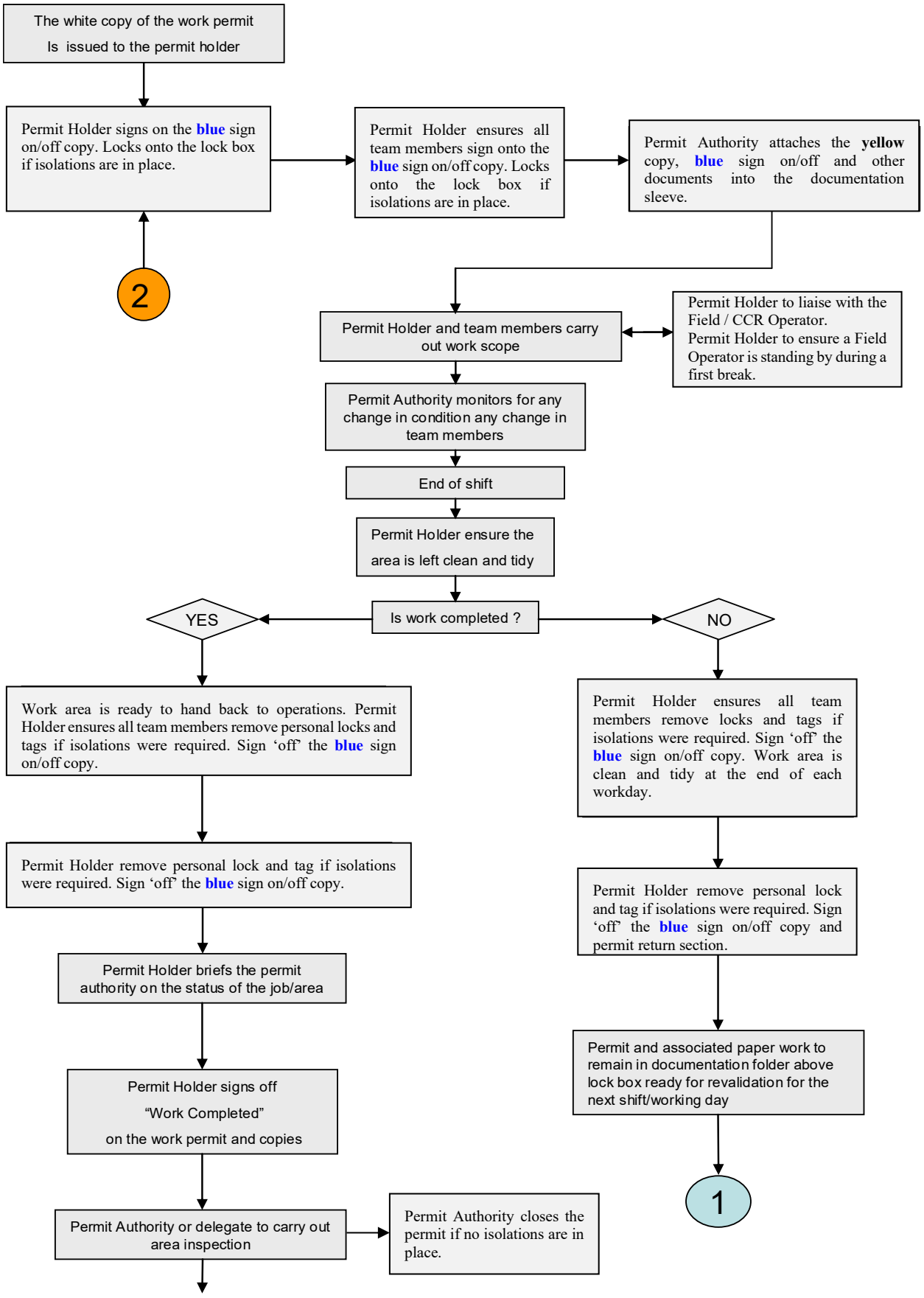
High Voltage Procedure KHP-MP-MNT-111-02

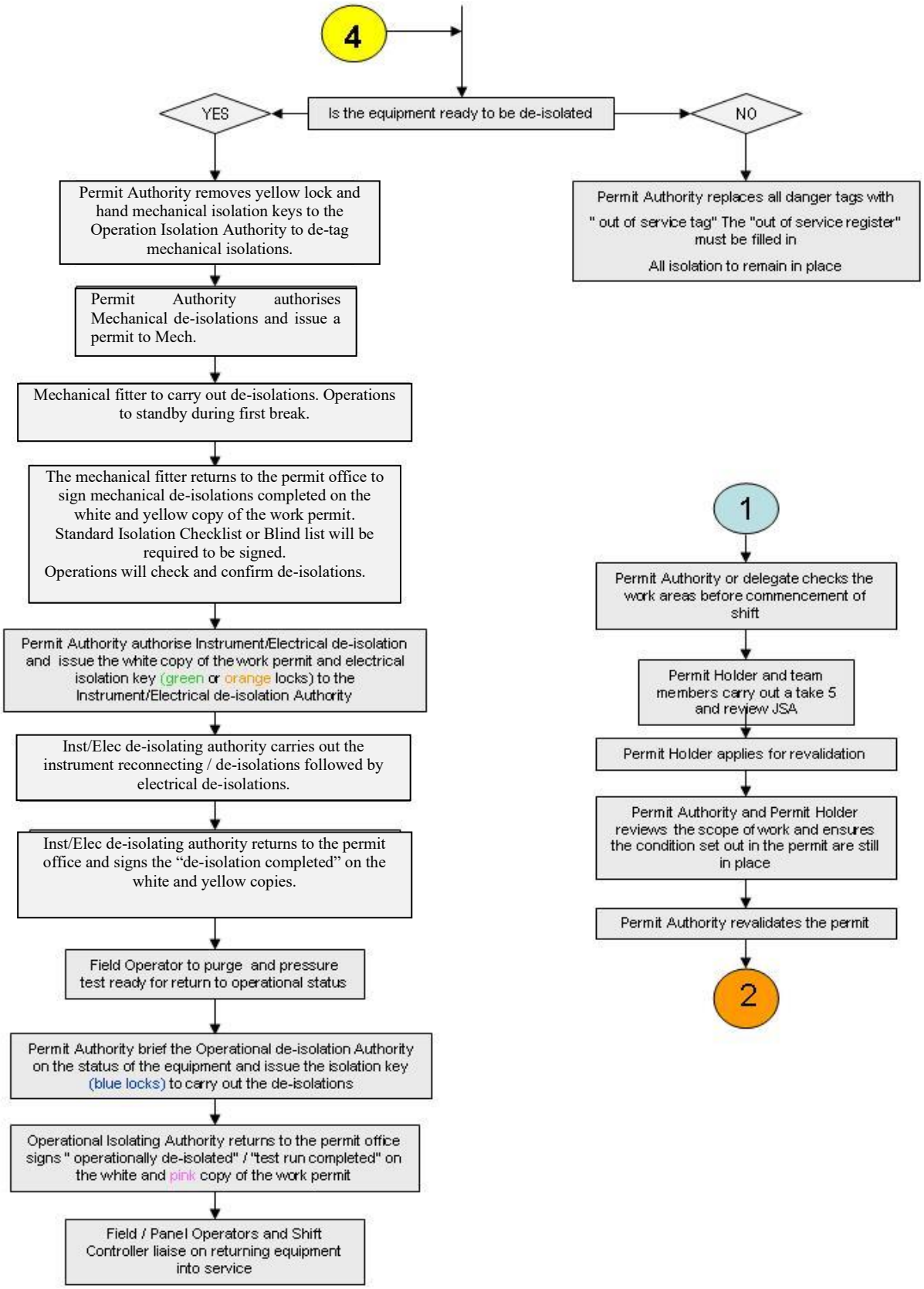
WesCEF Live Work Guidelines WCEF-GM-ENG-0001

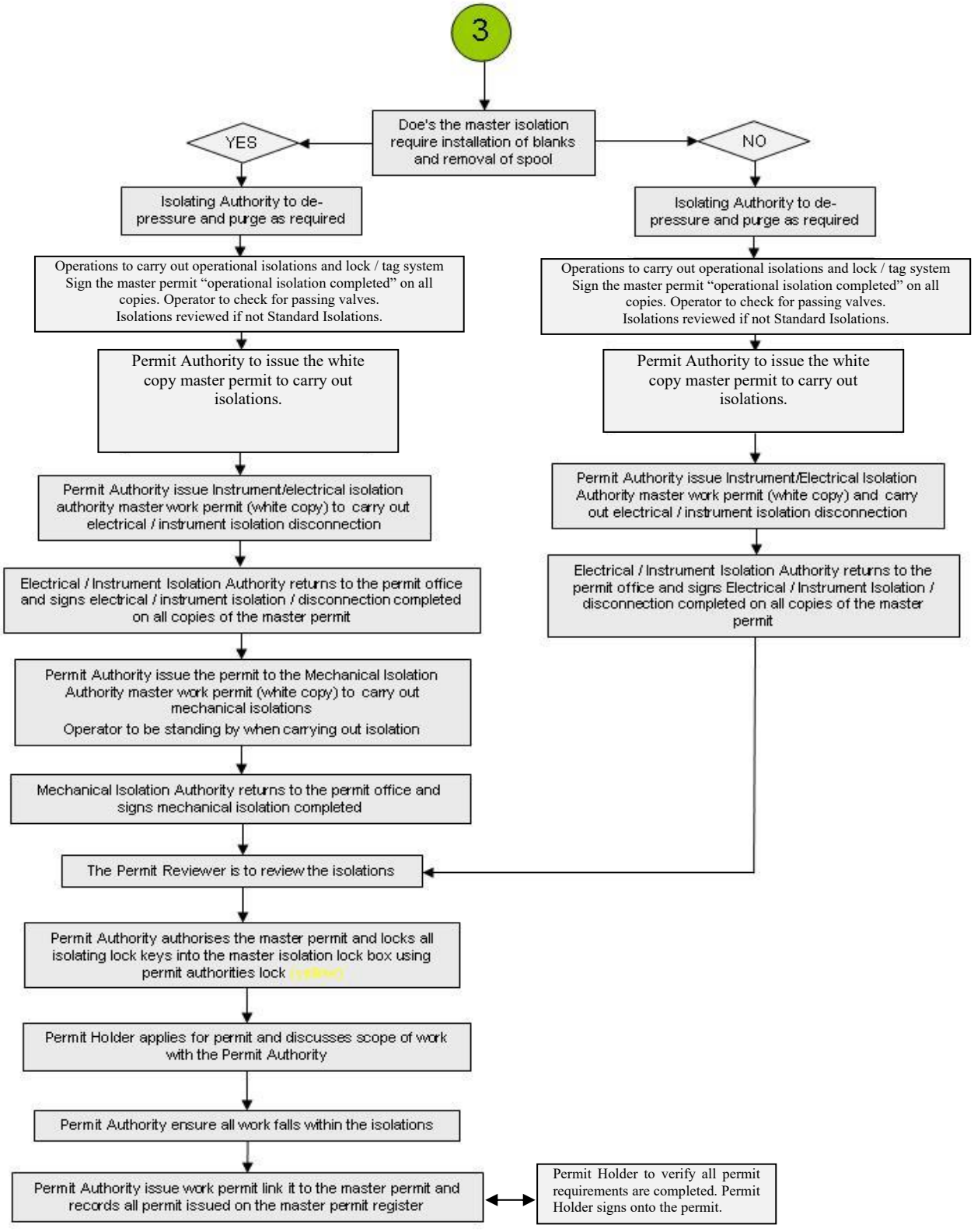
Hot Work Procedure KHP-GM-OHS-070-07

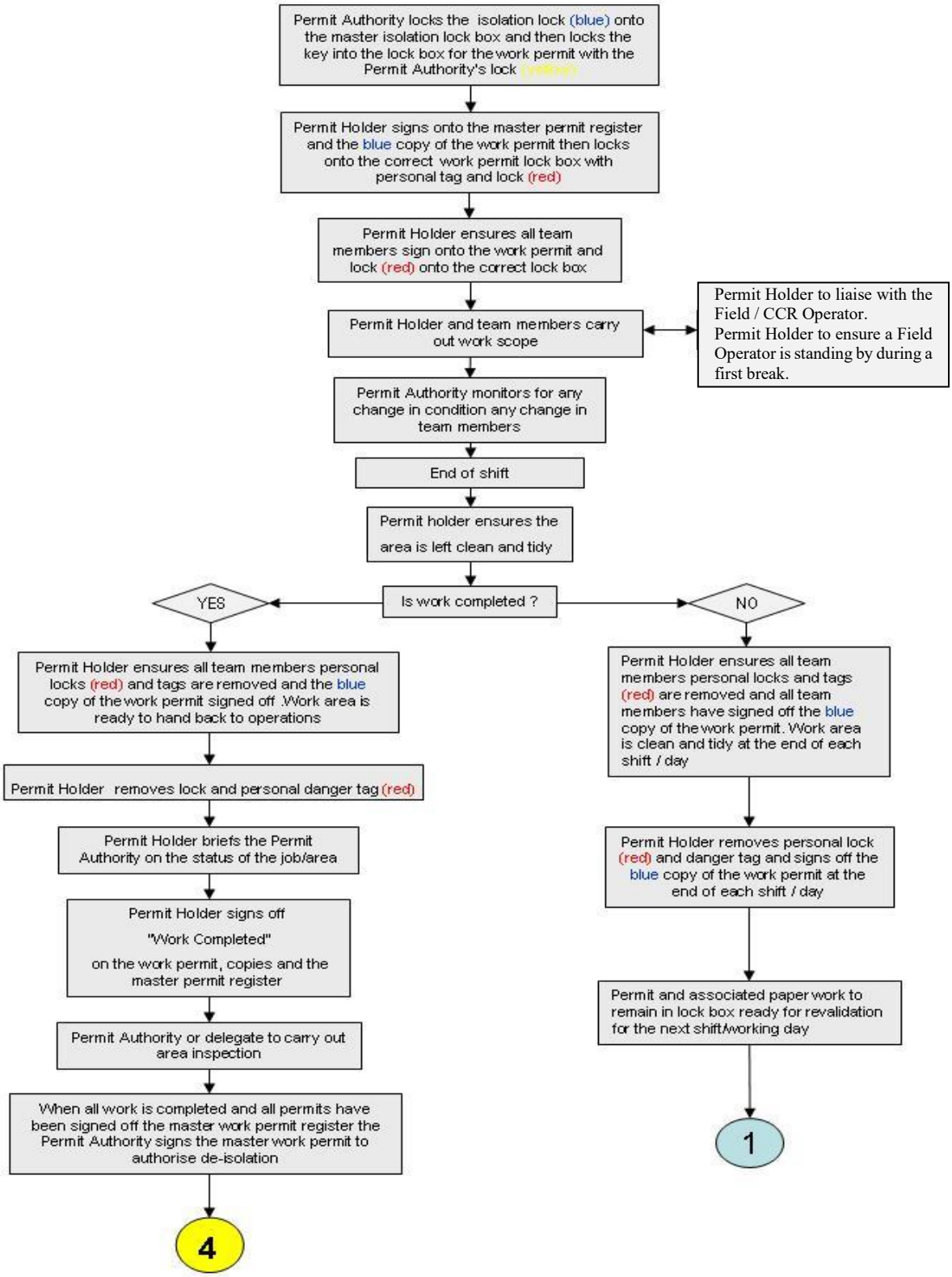
16. WORKSCOPE IDENTIFICATION, EQUIPMENT PREPERATION & PERMIT ISSUE FLOWCHART




The white copy of the work permit
Is issued to the permit holder
Permit Holder signs on the blue sign on/off copy. Locks onto the lock box if isolations are in place.
Permit Holder ensures all team members sign onto the blue sign on/off copy. Locks onto the lock box if isolations are in place.
Permit Authority attaches the yellow copy, blue sign on/off and other documents into the documentation sleeve.
2
Permit Holder and team members carry out work scope
Permit Holder to liaise with the Field / CCR Operator.
Permit Holder to ensure a Field Operator is standing by during a first break.
Permit Authority monitors for any change in condition any change in team members
End of shift
Permit Holder ensure the area is left clean and tidy
Is work completed ?
YES
NO
Work area is ready to hand back to operations. Permit Holder ensures all team members remove personal locks and tags if isolations were required. Sign 'off' the blue sign on/off copy.
Permit Holder remove personal lock and tag if isolations were required. Sign 'off' the blue sign on/off copy.
Permit Holder briefs the permit authority on the status of the job/area
Permit Holder signs off "Work Completed" on the work permit and copies
Permit Authority or delegate to carry out area inspection
Permit Authority closes the permit if no isolations are in place.
Permit Holder ensures all team members remove locks and tags if isolations were required. Sign 'off' the blue sign on/off copy. Work area is clean and tidy at the end of each workday.
Permit Holder remove personal lock and tag if isolations were required. Sign 'off' the blue sign on/off copy and permit return section.
Permit and associated paper work to remain in documentation folder above lock box ready for revalidation for the next shift/working day
1


4
Is the equipment ready to be de-isolated
YES
NO
Permit Authority removes yellow lock and hand mechanical isolation keys to the Operation Isolation Authority to de-tag mechanical isolations.
Permit Authority replaces all danger tags with " out of service tag" The "out of service register" must be filled in
All isolation to remain in place
Permit Authority authorises Mechanical de-isolations and issue a permit to Mech.
Mechanical fitter to carry out de-isolations. Operations to standby during first break.
The mechanical fitter returns to the permit office to sign mechanical de-isolations completed on the white and yellow copy of the work permit. Standard Isolation Checklist or Blind list will be required to be signed.
Operations will check and confirm de-isolations.
Permit Authority authorise Instrument/Electrical de-isolation and issue the white copy of the work permit and electrical isolation key (green or orange locks) to the Instrument/Electrical de-isolation Authority
Inst/Elec de-isolating authority carries out the instrument reconnecting / de-isolations followed by electrical de-isolations.
Inst/Elec de-isolating authority returns to the permit office and signs the “de-isolation completed” on the white and yellow copies.
Field Operator to purge and pressure test ready for return to operational status
Permit Authority brief the Operational de-isolation Authority on the status of the equipment and issue the isolation key (blue locks) to carry out the de-isolations
Operational Isolating Authority returns to the permit office signs " operationally de-isolated" / "test run completed" on the white and pink copy of the work permit
Field / Panel Operators and Shift Controller liaise on returning equipment into service
1
Permit Authority or delegate checks the work areas before commencement of shift
Permit Holder and team members carry out a take 5 and review JSA
Permit Holder applies for revalidation
Permit Authority and Permit Holder reviews the scope of work and ensures the condition set out in the permit are still in place
Permit Authority revalidates the permit
2


3
Doe's the master isolation require installation of blanks and removal of spool
YES
NO
Isolating Authority to de-pressure and purge as required
Isolating Authority to de-pressure and purge as required
Operations to carry out operational isolations and lock / tag system Sign the master permit "operational isolation completed" on all copies. Operator to check for passing valves. Isolations reviewed if not Standard Isolations.
Operations to carry out operational isolations and lock / tag system Sign the master permit "operational isolation completed" on all copies. Operator to check for passing valves. Isolations reviewed if not Standard Isolations.
Permit Authority to issue the white copy master permit to carry out isolations.
Permit Authority to issue the white copy master permit to carry out isolations.
Permit Authority issue Instrument/electrical isolation authority master work permit (white copy) to carry out electrical / instrument isolation disconnection
Permit Authority issue Instrument/Electrical Isolation Authority master work permit (white copy) and carry out electrical / instrument isolation disconnection
Electrical / Instrument Isolation Authority returns to the permit office and signs electrical / instrument isolation / disconnection completed on all copies of the master permit
Electrical / Instrument Isolation Authority returns to the permit office and signs Electrical / Instrument Isolation / disconnection completed on all copies of the master permit
Permit Authority issue the permit to the Mechanical Isolation Authority master work permit (white copy) to carry out mechanical isolations
Operator to be standing by when carrying out isolation
Mechanical Isolation Authority returns to the permit office and signs mechanical isolation completed
The Permit Reviewer is to review the isolations
Permit Authority authorises the master permit and locks all isolating lock keys into the master isolation lock box using permit authorities lock
Permit Holder applies for permit and discusses scope of work with the Permit Authority
Permit Authority ensure all work falls within the isolations
Permit Authority issue work permit link it to the master permit and records all permit issued on the master permit register
Permit Holder to verify all permit requirements are completed. Permit Holder signs onto the permit.


Permit Authority locks the isolation lock (blue) onto the master isolation lock box and then locks the key into the lock box for the work permit with the Permit Authority's lock (yellow)
Permit Holder signs onto the master permit register and the blue copy of the work permit then locks onto the correct work permit lock box with personal tag and lock (red)
Permit Holder ensures all team members sign onto the work permit and lock (red) onto the correct lock box
Permit Holder and team members carry out work scope
Permit Holder to liaise with the Field / CCR Operator.
Permit Holder to ensure a Field Operator is standing by during a first break.
Permit Authority monitors for any change in condition any change in team members
End of shift
Permit holder ensures the area is left clean and tidy
Is work completed ?
YES
NO
Permit Holder ensures all team members personal locks (red) and tags are removed and the blue copy of the work permit signed off .Work area is ready to hand back to operations
Permit Holder removes lock and personal danger tag (red)
Permit Holder briefs the Permit Authority on the status of the job/area
Permit Holder signs off "Work Completed" on the work permit, copies and the master permit register
Permit Authority or delegate to carry out area inspection
When all work is completed and all permits have been signed off the master work permit register the Permit Authority signs the master work permit to authorise de-isolation
4
Permit Holder ensures all team members personal locks and tags (red) are removed and all team members have signed off the blue copy of the work permit. Work area is clean and tidy at the end of each shift / day
Permit Holder removes personal lock (red) and danger tag and signs off the blue copy of the work permit at the end of each shift / day
Permit and associated paper work to remain in lock box ready for revalidation for the next shift/working day
1

Appendix 1

MOC Required: To Be Raised During A Long Term Outage (Greater Than 12 Hours)
FM200 / CO2 – Fire Suppression Systems: Cylinders are pressure tested on a 10 yearly cycle. Local visual gauges show the "working pressure". INLEC conduct routine firing test PPMs when the turbine is offline. Long term outage are captured in the KPF Shift Controllers log book and the hardware isolation form.
Fire pump – One Pump Out Of Service: Priority work repair required. No restrictions required: Plant production, Hot Work, domestic loading and export to domestic product transfers permitted. Long term outage are captured in the KPF Shift Controllers log book and SUPAGAS to be informed of the expected out of service duration. **Fire pump – Both Pumps Out Of Service:** Priority work repair required. Restrictions required: Suspend domestic loading / transfers and **Class "A" Hot Works** Long term outage are captured in the KPF Shift Controllers log book and SUPAGAS to be informed of the expected out of service duration. **Fire / Gas Detection:** Priority work repair required. Long term outage are captured in the KPF Shift Controllers log book and the hardware isolation form. A HIMA override (individual detector) should be isolated to ensure the other sections of the plant are protected.
MOC not required:
Lab Sampling: Gas sampling conducted by lab staff are taken from dedicated locations. Gas detection is temporarily isolated. Managed by work permit system and the hardware isolation form.
Fire Water systems: Operated and functionally tested each month. Blockages in deluge and system defects, are reported in the Work Order system and repaired as a priority.
Hydrant Head and Riser Leaks: *with individual isolations* Many hydrant risers can be individually isolated. Single hydrant isolations **will not** normally be supported by a temporary fire system setup. Leaks will be repaired by maintenance.
Hydrant Riser leaks: *without individual isolations* Multiple riser's isolations, will normally be supported by a temporary fire system setup. Portable monitors with hoses are connected to operational hydrants. Reported in the Work Order system and repaired as a priority. Isolated Fire Water systems are captured in the KPF Shift Controllers logbook. **Fire mains:** Minor leaks - Generally left operational and are reported in the Work Order system. Major / significant leak – Pipe section is isolated and reported in the Work Order system and repaired as a priority. Portable monitors with hoses are connected to operational hydrants. Isolated Fire Water systems are captured in the KPF Shift Controllers logbook.