

# AUGUST SAFETY THEME: CONFINED SPACE

A confined space is an enclosed, or partially enclosed space that is not designed for human occupancy, and could have:

- an oxygen concentration outside the safe oxygen range
- a concentration of toxic or flammable airborne contaminants
- the potential for engulfment that can cause suffocation or drowning
- limited entry and egress i.e one way in and out.

Confined spaces at Ok Tedi include:

- Roof spaces
- Storage tanks
- Process vessels, e.g. mills
- Tanks drains and chutes
- Pipes, sewers, shafts, tunnels and ducts
- Ditches and trenches.

## WHAT ARE THE RISKS?

One of the greatest risks when working in a confined space is that the atmosphere may be:

- Toxic (containing gases such as carbon monoxide or particles such as dust or silica, that can cause illness and death)
- No work is to be done in a confined space that has oxygen level 19.5% or below or above 23.5% above
- Flammable or explosive.

Gas testing must be conducted before anyone is allowed to enter the confined space and ongoing monitoring is required while personnel are in the space. Depending on the results of gas testing, ventilation or breathing apparatus (BA) may be required as a control prior to entering a confined space. BA is dependant on the type of task.



Other risks associated with working in a confined space include:

- Engulfment by stored product (if working in storage container) or introduced product (if working in pipe, trench, storage tank or conveyor chute)
- Heat related illness from working in a hot and humid environment with limited air flow
- Musculoskeletal injury from working in cramped conditions
- Potential to contact mechanical or electrical energy due to the proximity to equipment within the confined space
- The space may also be dusty, contain vermin, have poor light and amplify noise.

For more information watch the [Confined Space Video](#) on the OTML Site Portal.

### Be the CONTROL not the HAZARD

An Authority to Work (ATW) and confined space documents must be in place before anyone enters a confined space. The ATW will only be issued after:

- A confined space risk assessment is done
- All hazards associated with the specific location have been identified
- Suitable controls have been identified for each hazard that will enable work to be conducted safely in the location.

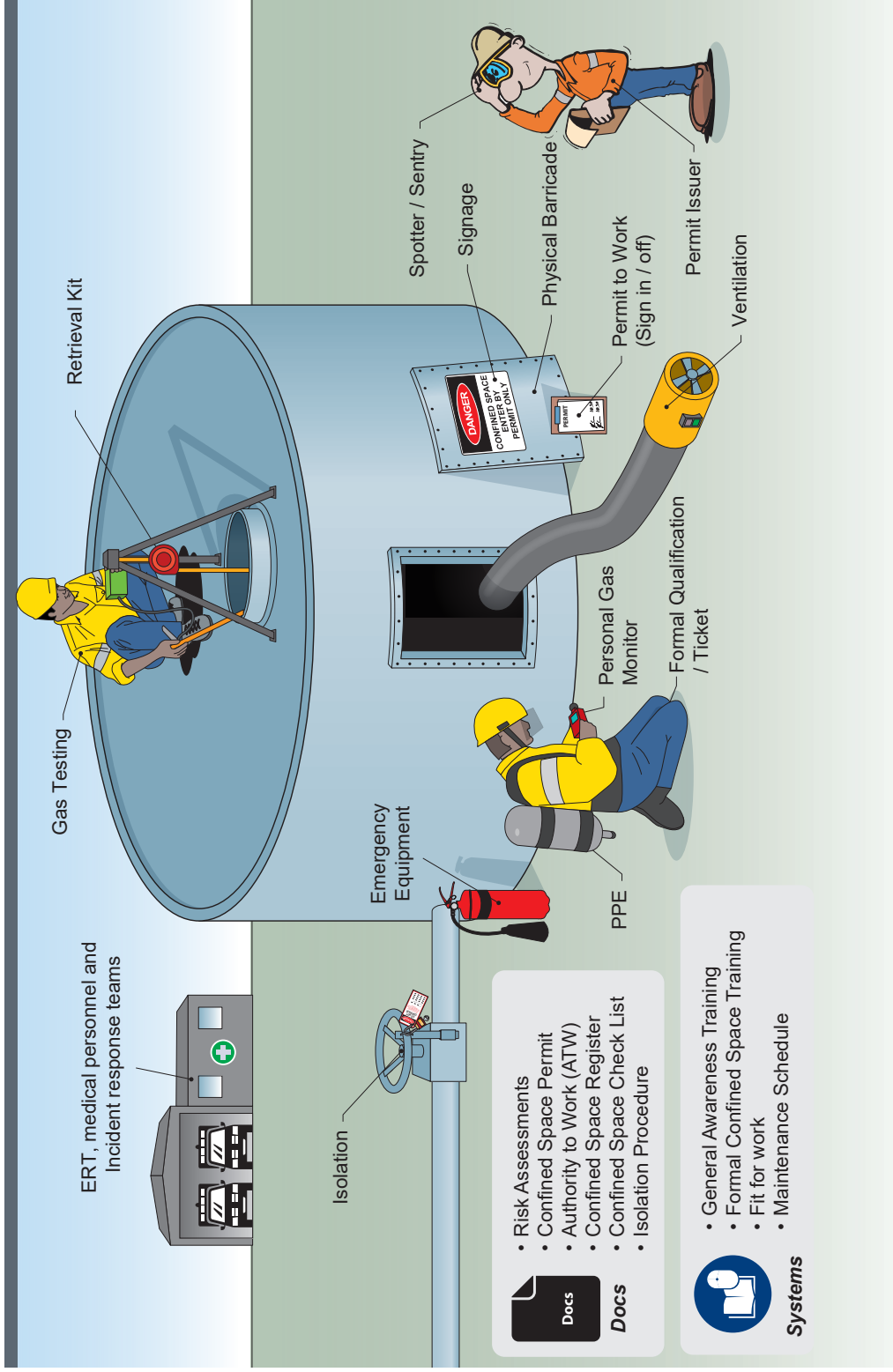
The person in charge of the job (the ATW Acceptor) must make sure that all persons who will enter the confined space are trained to enter the confined space, aware of the hazards and are satisfied that the appropriate controls are in place and working effectively to make the space safe.

Each person must then sign and date the Authorisation before attaching their personal Danger Tag and Lock to the ATW Control Board and entering the confined space.

Other Key Controls include:

- Restricted access
- Trained and authorised personnel
- Signage
- Gas testing / monitoring
- Sentry / Standby Person outside the space
- Emergency equipment and rescue plan in place
- Purging and ventilation
- PPE including breathing apparatus.

## BE THE CONTROL NOT THE HAZARD



### RISKS

- Fatality or illness from toxic atmosphere
- Engulfment
- Heat stress
- Musculoskeletal injury

### KEY CONTROL CHECKLIST

- Am I fit for work (no drugs or alcohol)?
- Am I trained, competent and authorised for the task I am about to do?
- Is an Authority to Work in place, do I understand it, have I signed on?
- Have I checked controls are working?
- Has atmosphere been tested? Is it safe?
- Will atmosphere be monitored during task?
- Is a spotter or sentry in place?
- Have I inspected my equipment?
- Is equipment is fit for purpose?
- If I am required to wear breathing apparatus, have I been trained in its use?
- Am I aware of the procedures to follow?
- Do I know what to do in an emergency?
- Am I prepared for an emergency should it happen?

### OPERATOR CONFINED SPACE CONTROL CHECKLIST

## OPERATOR / EMPLOYEE

- Am I fit for work (no drugs or alcohol)?
- Am I trained, competent and authorised for the task I am about to do?
- Is a JSA and ATW in place, do I understand the requirements and have I signed on?
- Have I checked controls are in place and working, e.g isolation, ventilation, physical barriers?
- Has the atmosphere been tested and is it safe for entry?
- Will the atmosphere be monitored throughout the task?
- Is a spotter or sentry in place?
- Have I inspected all the equipment that I will be using, including radio and PPE?
- Have I ensured that equipment is fit for purpose?
- If I am required to wear breathing apparatus, have I been trained in its use?
- Am I aware of the procedures I must follow?
- Do I know what to do in an emergency should it happen?

## SUPERVISORS / SUPERINTENDENT

- Are all persons fit, competent and authorised for the assigned task?
- Has a risk assessment been completed and controls put in place?
- Has an Authority to Work (permit) been developed and authorised?
- Have all relevant persons read, understood and signed the permit?
- Are physical barricades in place to prevent unauthorised personnel from entering the space?
- Is ventilation in place and working effectively?
- Has the atmosphere been tested and is it safe?
- Is a spotter in place? Do they have constant communication with persons working in the space?
- Are all persons trained in and wearing correct PPE for the task and conditions?
- Have procedures been provided for the task, and are personnel aware of the requirements?
- Is a plan in place in case things go wrong and are all persons aware of what to do?
- Is emergency equipment easily available and does the spotter know how to use the equipment?

## MANAGERS / GENERAL MANAGERS

- Are training systems in place to ensure competencies are achieved and maintained?
- Is a risk management / work permit process in place for high risk tasks?
- Are procedures in place and being followed?
- Does equipment undergo regular inspections and maintenance according to required schedule?
- Is an emergency response plan developed?
- Are emergency response resources available and in good working order?
- Could the approved practices for confined space be improved?