**Inert Space Entry**

1. **Purpose**

The purpose of this procedure is to establish guidelines to protect personnel while working in or near inert atmospheres. This procedure is to be used in conjunction with the written Confined Space procedure.

1. **Policy**

* Simultaneous communications will be established and maintained between the entrant, the attendant and the person monitoring the breathing air supply.
* If for any reason the primary communication link fails, the persons working inside the space must be evacuated.
* Stand-by personnel cannot leave their post until relieved.
* The area around the Inert Entry Operation must be barricaded to limit personnel in the area. The perimeter of this regulated area will be a minimum of 4-feet from the vessel opening or manway.

1. **Hazard Analysis**

Prior to entry of a vessel a written JSA shall be completed specific to the vessel being entered and the work being undertaken. The supervisor shall communicate the JSA to all personnel involved. The JSA must address all the risks associated with the work such as:

* Setting up the inert entry and catalyst handling equipment at the work site
* Access and egress to the equipment.
* Provisions for adequate lighting.
* Control of employee access.
* Lifting and rigging activities.
* Removal of vessel internals.
* Installation of warning signs.

1. **Permit**

The required entry permit will be completed and posted at the entry point of the confined space. The presence of an inert atmosphere will be stated on the permit. All entry points to an inert confined space will have a sign placed at the entry stating **DANGER, INERT ATMOSPHERE**, **DO NOT ENTER.**

1. **Personal Protective Equipment**

* Protective equipment for entry will include an approved air supply, positive pressure supplied air respirator, backup 5-minute escape pack and a safety harness with attached lifeline. Equipment must be inspected and in good working order before entry.
* Technicians entering the inert space must wear a helmet which is sufficiently secured to prevent inadvertent removal. ('clam type' helmets with integral breathing air, which cannot be accidentally removed or dislodged are acceptable).
* Air supply must be Certified Grade D quality breathing air and must be checked and tagged by Safety before use at the site. Only bottled air is permitted.
* The technicians entering the space must wear an auxiliary escape air bottle.

1. **Air Monitoring**

The oxygen and combustible gas levels shall be monitored continuously during occupancy to ensure the proper atmosphere is maintained. A log of the air monitoring results shall be maintained. Log entries shall not exceed 15 minutes.

1. **Heat Stress**

A documented heat stress plan shall be available onsite. The plan will include guidelines for heat stress prevention, a work/rest regimen based on the ACGIH Threshold Limit Values, and signs and symptoms of heat stress.

1. **Emergency**

Trained personnel to provide emergency first aid and cardiopulmonary resuscitation shall be available to respond in a timely manner. An emergency action plan shall be developed and available onsite. The written emergency plan shall include but is not limited to the following elements:

* Loss of Nitrogen supply
* High Nitrogen pressure
* High vessel oxygen
* High/increasing vessel temperature
* Loss of breathing air supply
* Emergency inside the vessel
* Plant emergency outside the vessel.
* Loss of communication

1. **Training**

Prior to working in or around an Inert Space, affected employees shall be trained in inert confined space entry, respiratory equipment use and care, standby requirements and the use of communications equipment.

The training shall be certified by the employer and include employee name, trainer signature/initials, and date of training. Certification shall be made available to employees & their authorized representative.