

DuPont's Safety Culture & Confined Space Entry Safety

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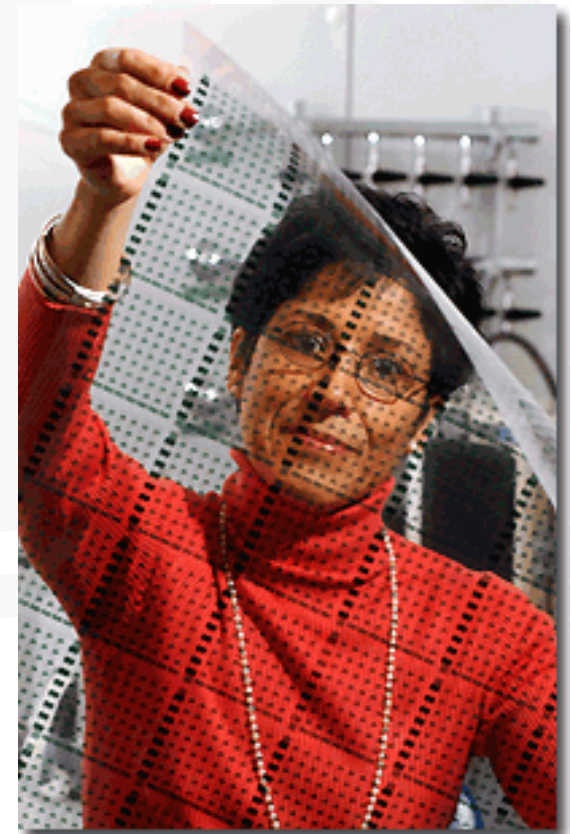
Jurong Island



The miracles of science™

The Vision of DuPont

**To be the world's most dynamic science company,
creating sustainable solutions
essential to a better, safer, healthier life for people everywhere.**



DuPont Core Values

- **Safety and Health**
- **Environmental Stewardship**
- **Highest Ethical Behavior**
- **Respect for People**

The Goal is Zero

Background of DuPont's Safety Culture

History:

1802 – El DuPont was formed in USA

1811 – First safety rules set in writing

1911 – Employee safety programs were institutionalize and safety is part of the job

1995 – DuPont plant started on Sakra

Our beliefs:

- **SHE is one of our 3 core values.**
- **Good safety is good business.**
- **Pre-job planning is essential for working safely.**

Selected principles:

- **All injuries and occupational injuries can be prevented**
- **Management is responsible for safety.**
- **It is necessary to train all employees thoroughly to work safely**

Selected Life Saving Rules:

- **Lock, Tag, Clear and Try procedure must be observed and complied prior to performing any servicing, repairing or inspection works.**
- **Procedure must be observed and complied when performing work involving vessel entry or confined space entry.**

Safety Pyramid



Confined Space Entry Reference Standards

Our confined space entry (CSE) permit procedure and practices are governed by:

- 1) DuPont's Standard on Confined Space Entry**
- 2) S'pore Standard (CP 84: 2000) on Entry into and safe working into confined spaces**

Note:

Confined space entry permit is one of the 9 permits we have in the DuPont.

Elements of a Sustainable Safety Culture



Confined Space Entry – Commitment & Will



- Site/Plant Manager is accountable for safety performance.**
- Leaders/supervisors are responsibility for safety performance of his/her team.**
- Everyone, including manager and leaders, are expected to carry out regular STOP audits to correct unsafe acts and unsafe conditions.**
- Safety is part of the work.**
- Exceptions to full CSE permit are analysed and documented. Alternative ways to make confined space entry safe is reviewed and documented.**
- CSE permit will be withdrawn if the requirements are not met or the conditions has changed putting safe work at risk.**

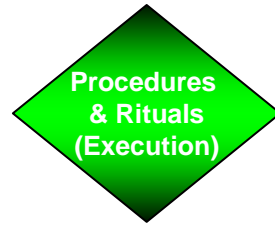
Confined Space Entry – Awareness & Training



- ❑ All personnel who need to work in the plant including engineers
 - Mandatory training on confined space entry permit within 6 month.
 - Refresher training every 3 years

- ❑ *Approvers for confined space entry permit must be certified to MOM's confined space safety assessors course. Refresher training is required every 3 years.*

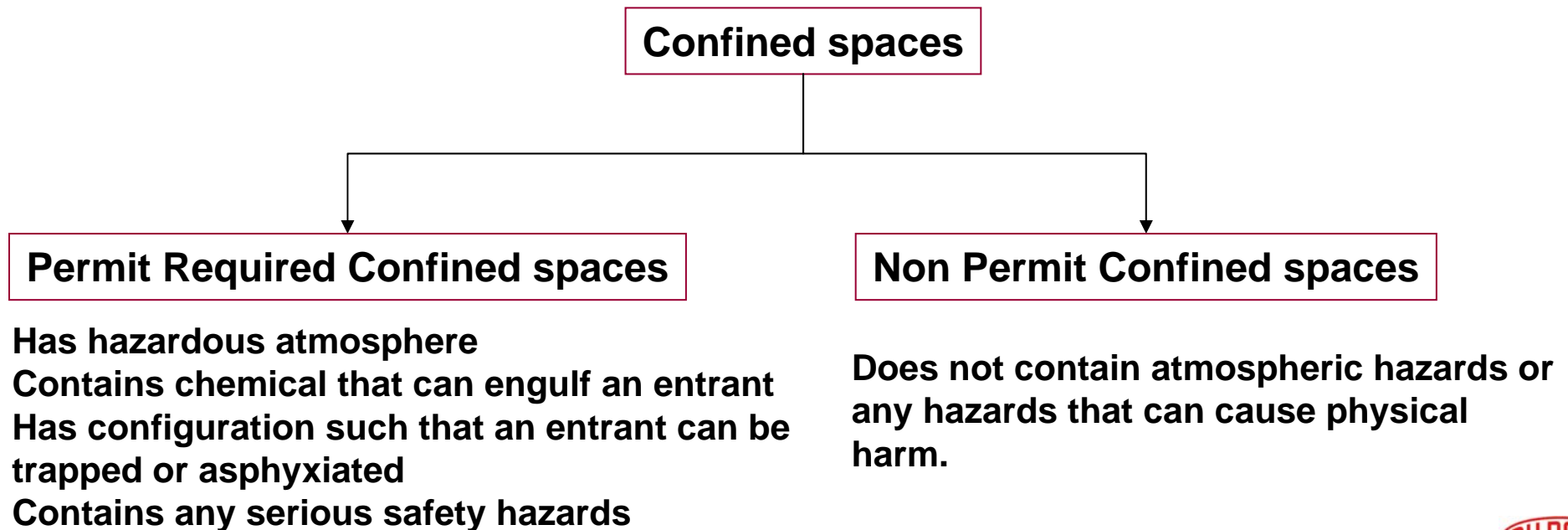
Confined Space Entry – Execution: Procedures & Ritual



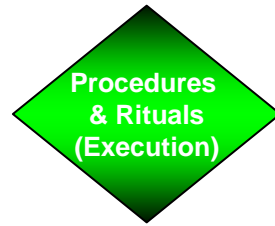
A Confined Space is any enclosed or partially enclosed space that has ALL the following characteristics :

- Is large enough and so configured that a person can bodily enter and perform work, and
- Has limited or restricted means of entry or exit, and
- Is not designed for human occupancy.

Entry is an act of crossing the plane of an opening to a confined space with any part of the body.

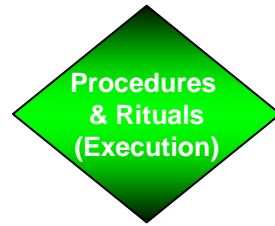


Confined Space Entry – Execution: Procedures & Ritual



- ❑ All confined spaces must be classified and documented into permit confined space and non-permit confined space.
- ❑ CSE entry is control by a CSE permit. Lock Tag Clear and Try (LTCT) is a pre-requisite for CSE permit approval.
- ❑ 3 party (contractor, performing authority & approving authority) confirmation at the field is an integral party of the permit approval process.
- ❑ Physical disconnects and flanging must be at the first flange otherwise management approval is required for the deviation.

Confined Space Entry – Execution: Procedures & Ritual



- Permit must be re-approved after every shift hand over and entry conditions have been re-assessed and continue to be safe.
- Permit will be withdrawn upon sounding of plant emergency alarm and safe conditions will have to be validated and permit re-approved before re-entry.
- Gas check to be carried out at defined frequency but not less than once every 8 hours. Most gas checks are done every 2 hours
- Stand-by man must be a DuPont employee.

Confined Space Entry – Skill & Audits



- Audits need to be conducted by line leadership to ensure compliance with permit and procedures.
- Permit must be withdrawn immediately if conditions have changed or requirements are not fulfilled for safe work.



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