

Petrochemical Corporation of Singapore (Private) Limited



SECURING THE HEALTH AND SAFETY
OF OUR WORKFORCE
SAFEGUARDING OUR COMMUNITY



RESPONSIBLE CARE® OBJECTIVES & TARGETS 2023



Er. Bernard Leong LW Health, Safety & Environment cum Quality Control Manager



Annual PCS-Contractors HSE Meeting 2023 26 January 2023



Responsible Care®



- 1. global chemical industry's commitment
- continuous improvement in health, safety and environmental performance
- open and transparent communication
- signatory since October 1999
- PCS RC Policy* spells out philosophy and principles
 - → governing all decisions related to health, safety and environment, in all business activities
- applies to all employees and contractors
- mindset of identifying and removing hazards at workplace



RESPONSIBLE CARE® POLICY

suppliers, neighbours, the Public and protection of the Environment as the top priority in its operations PCS is committed to:

 Health hazards and reducing occupational health risks

- hazards and reducing occupational health risks ensure a sale workplace, for the prevention of injuries, incidents, property damage and ensure a sale workplace, to the prevention of injuries, incidents, property and process safety risks and process safety risks ensure a secure workplace by prevening security incidents protecting the environment, by minimising the impact of its activities, products an services on the environment, by unimimising the impact of its activities, products and services on the environment, by unique protections of the process of the services on the environment, by unique protections and by minimising services on the environment, by unique protections are services on the environment, by unique protections are provided to the provided of the process of the protection of the services on the environment, by unique protections are provided to the provided of the protection of the provided to the provided of the provided to the provided to the provided to the provided to provided the provided to the provided
- waste, and preventing pollution by reducing emission to air, discharge to water and to
- soil to the practical minimum ensure a clear commitment of product stewardship to minimise any impact of our products throughout their life cycles

These are done through a continual improvement process of Plan-Do-Check-Act cycle and also by subscribing to the Responsible Card* principles for the management system in production, handling, use, transport and disposal of products that PCS produces through:

- allocating sufficient resources to develop, operate and maintain the Health. Safety and Environme
- uncountry summer treatment systems opening summer to reason, salely and principles opening summer to the summer systems openines to employees, contractors, customers, distributors, suppliers, officials and the community including consultation and participation of stakeholders assurance of HSE related quality and safety of our products and processes

- providing feedback to and cooperation with the Government and relevant Bodies regarding Singapore HSE and Security (HSES) logal framework and Responsible Carelr practices assisting our contractors, eustomers and distributors to understand the bazards of our products sharing of HSES expanience and offering assistance to others including suppliers, neighbours and the

- regarding HSES as a direct line management responsibility
 communicating the appropriate HSES consideration to contractors, customers, distributors an maintaining good customer relationship to foster safe use and handling of our products
- assisting distances and distributors in the transmission of product stewardship information

- training and motivating employees and contractors to enhance HSES awareness and to promote bes
- NOSC practices carrying out incident investigation and taking safety management measures to prevent recurrence requesting contractors working at PCS to adopt the same HSES principles of this policy having an effective emergency response system to minimise any property and HSES damage arising from an emergency situation.









^{*} Responsible Care® Policy is PCS' manifestation of generic "Health, Safety & Environment Policy", as PCS is a signatory of Responsible Care®

Objectives & Targets 2023 - 1



1. Maintain a Healthy, Safe Workplace and best in class Environment

| Zero Lost Time Incident | | | |
|--|---|--|--|
| Total Recordable Case Frequency ≤ 1.4 | TRCF, per million hours worked | | |
| Zero Environmental Incident | RAM* Consequence > Rating of 3 * see slide 4 | | |
| Zero Hazardous Exposure leading to Occupational Diseases | | | |
| Zero Process Safety Incident | RAM Consequence > Rating of 3 | | |

Adhere to COVID-19 Safe Management Measures (SMM) according to current advisories; keep ourselves and communities healthy and safe



Risk Assessment Matrix

| | | | | | | Probability of Occurrence | | | |
|-----------------------|------------------------|---|---|--|--|---------------------------|-----------------------|--|--|
| | Pot | ential Co | nsegueno | :e | A | В | С | D | E |
| Potential Consequence | | | | | Very Unlikely | Unlikely | Likely | Occasional | Routine |
| Rating | People | Asset | Environment | Reputation | Never heard of in our industry | Heard of in our industry | Has occurred in PCS | Occurred several times per year in PCS | Occurred several times per year in PCS |
| 0 | No injury | No damage | No effect | No impact | | | | | |
| 1 | Slight injury | Slight damage | Slight effect | Slight impact | | | | | |
| 2 | Minor injury | Minor damage | Minor effect | Limited impact | | | | | |
| 3 | Major injury | Localised damage | Localised effect | Considerable impact | | | | | |
| 4 | Single fatality | Major damage | Major effect | Major national | | | | | |
| 5 | Multiple fatalities | Extensive damage | Massive effect | Major international | | | | | |
| | | | ZON | NES - | LOW RISK | М | EDIUM RISK | HIG | H RISK |
| HARM TO PEOPLE | | | | | | | | | |
| RA | TING | | | | DE | SCRIPTION | | | |
| | 0 | No injury or health effect. Slight injury or health effect (including First Aid and Medical Treatment cases) - not affecting work performance or causing disability. | | | | | | | |
| | 1 | | | | | | | | |
| | I | Minor injury or health effect - affecting work performance, such as restriction on activities (Restricted Workday Case). Limited health effect, which is reversible, eg. skin irritation, food poisoning. | | | | | | | |
| | 2 | | | | | | | | |
| | 3 | Major injury o | or health effect - ge without loss o | affecting work p of life, eg. noise i | erformance, such a nduced deafness, c | hronic back injury. | or a need to take a f | • | |
| | | Major injury o | or health effect - ge without loss o | affecting work p of life, eg. noise i | erformance, such a nduced deafness, c | hronic back injury. | or a need to take a f | • | |

Objectives & Targets 2023 – 2a Pts



2. Maintain Good HSE Performance and Management **System**

- Maintain zero major non-conformity in external and internal **HSE** audits
- Enhance Contractor Companies bizSAFE capacity building through PCS Maintenance Contractors HSE Committee's (PCC) championship as bizSAFE Mentor
- Ensure Safety Case written presentation as a live document
 - ✓ propagate its purpose as knowledge management and retention
 - competency development of newer workforce

Objectives & Targets 2023 – 2b



2. Maintain Good HSE Performance and Management **System**

- Promote technology-enabled HSE
 - ✓ mind-set change to further digital transformation in health, safety, environment and productivity
- Refresh Speak Out for Safety (SOS) programme; practise "self Safety Time Out"* to assess task and hazards







* see slide 7

Safety Time Out (STO) - 1



- planned event which companies take a short time off from daily work routine to improve safety, and communicate importance of WSH to all workers
- activities can take various forms, including:
 - ➤ top management do workplace walkabout to emphasise visibility and commitment to safety
 - > encourage workers to report hazards and near misses
 - > share learning points from incidents
- PCS is already conducting various forms of STOs, prior to call by MOM:
 - monthly Mass Tool Box meeting for contractors
 - monthly Management HSE walkabouts
 - monthly Learning Incident Lessons sessions to share learning points from incidents in the Company and elsewhere, including WSH Alert and CCPS Process Safety Beacon

Safety Time Out (STO) - 2



- STOs are essential parts of PCS' holistic view of Total WSH
 - pause and re-think a health or safety issue, or hazard
- PCS instituted In-situ Risk Assessment (iRA) as a simple and brief assessment conducted by the person or persons jointly before commencing work to ensure that there are no identified hazards at site and preventive measures are in place, in addition to the formal Risk Assessment
- STop And Report (STAR) programme empowers everyone, at any level, to intervene and report any unsafe act or condition by stopping any ongoing unsafe activity







Objectives & Targets 2023 – 3a Pos



3. Ensure a HSE competent Workforce

Identify appropriate training and targeted delivery to enhance awareness and understanding of hazards and risks of workplaces and activities; assess / ensure competence to consistently follow Safe Work Procedures

* see slide 11

Identify underlying human factors [human errors**], including competency-based behaviour and mental health well-being, on performance variability; incorporate learnings for new hires ** see slide 12



Objectives & Targets 2023 – 3b



3. Ensure a HSE competent Workforce

- Emphasise empowerment and nurture ownership in health, safety and environment
 - awareness of Workplace Safety and Health (WSH) legislations and regulations, including Codes of **Practices**

FRIDAY, OCTOBER 14, 2022

First published in the Government Gazette, Electronic Edition, on 14 October 2022 at 5 pm

No. 2861 — WORKPLACE SAFETY AND HEALTH ACT 2006

WORKPLACE SAFETY AND HEALTH (APPROVED CODES OF PRACTICE) NOTIFICATION 2022

In accordance with section 40B(3) of the Workplace Safety and Health Act 2006, the Workplace Safety and Health Council hereby notifies that the Council has approved the Codes of Practice set out in the Schedule, with effect from 31 October 2022.

2. The approved Codes of Practice may be inspected at the place and time and on such days as follows:

Place: Workplace Safety and Health Council

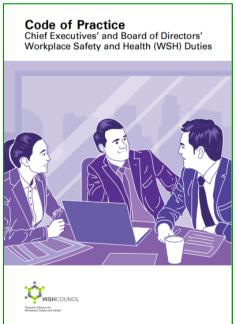
1500 Bendemeer Road, #04-01 Ministry of Manpower Services Centre

Singapore 339946

Mondays to Fridays (public holidays excepted)

9.00 a.m. to 1.00 p.m.

2.00 p.m. to 5.00 p.m.



issued Oct 2022

Pcs

Training and Competency

- Section 12 of Workplace Safety and Health Act 2006
 "...such measures as are necessary to ensure the safety and health of the employer's employees at work"
 - > "...ensuring that those persons at work have adequate instruction, information, training and supervision"
- Different types of expertise required
- Competency is a combination of Knowledge, Ability and Skill
 - ✓ written training programme
 - ✓ compiled by competent person
 - ✓ given prior to start of work, changes
 - √ records to be kept
 - ✓ refresher training every 3 years



Human Error in Process Safety



- Human error led to two of most significant incidents
- ✓ Piper Alpha (1988)
 - > failure to fit blind correctly
 - > shift changeover
 - contractor failed to report status of work
- ✓ BP Texas City (2005) (underlying problems)
 - historical deviations of start-up
 - > lack of communication
 - fatigued operators

Classification

- ✓ Learning gap [don't know]
- ✓ Memory gap
 [know but don't remember]
- ✓ Inconsistency
 [have knowledge but variability in method]
- ✓ **Application** [know but incorrect action]
- ✓ Omission
 [know but missing step or action]
- ✓ **Decision**[wrong decision in a given situation]

Objectives & Targets 2023 – 4a Pts



4. Strengthen Responsible Care® Practices

- Continue outreach activities, sharing practical and sustainable approaches in Responsible Care® programmes as Responsible Care® Leader
 - embed Responsible Care® in marketing collateral and outreach programmes
- Active support and participation in national workplace health and safety initiatives





Objectives & Targets 2023 – 4b



4. Strengthen Responsible Care® Practices

- Explore carbon capture, utilisation and storage (CCUS) opportunities, including renewable energy sources
 - alignment with national net-zero greenhouse gas emissions target
- Active outreach / sharing of HSE experience / expertise, within Complex, and through SCIC / industry avenues



Objectives & Targets 2023 – 5



5. Ensure Compliance with Legal and Other Requirements

- Ensure workplace health and safety awareness and compliance through regular site inspection* * see slide 16
 - identify and control potential risk situations to eliminate injuries
- Ensure alignment to WSH 2028 Vision** (MOM Tripartite) Strategies)
 - incorporate WSH 2028 strategies in programmes and ** see slide 17 activities
- Ensure Contractor Companies demonstrable commitment to, and competence in, the proper management of HSE***

*** see slide 18

Formal inspections



Monthly

- √ Management Team
- √ Safety & Health Working Committee
- √ PCS Maintenance Contractors HSE Committee (PCC)

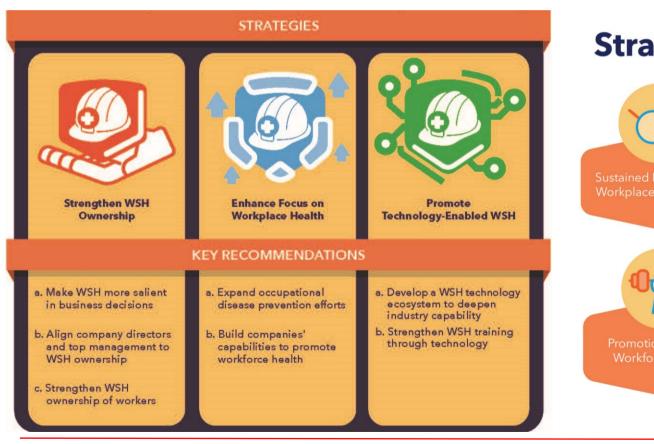
Bi-weekly

√ HSE Officer, support functions (Technology & Optimization, IT & Plant Services, Maintenance, Contractor)

WSH 2028



Vision – A Healthy Workforce in Safe Workplaces; A Country Renowned for Best Practices in Workplace Safety and Health



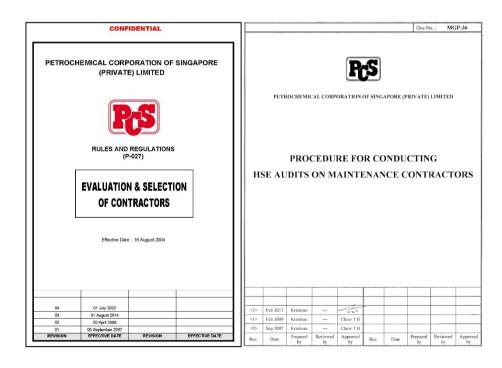
Strategic Outcomes



Evaluation, Selection, Audit



- Regulations for Evaluation & Selection of Contractors
- Procedure for conducting HSE Audits on Maintenance Contractors



- 7.2 Contractors failing to achieve the minimum score of 75% may be subjected to <u>one or more actions</u> as given below, as decided by the Maintenance Manager –
 - Re-audit within three months (only if there is reason to believe that the failure was due to administrative discrepancies and not due to inadequacy of their HSE Management System)
 - Eviction from PCS facilities (land, office or store)
 - Not considered for any new work under PCS Maintenance
 - Termination of contract and/or removal from the 'Approved contractor list' (this shall be on consultation with the Purchasing Manager)

| Score in previous audit | Status | Audit |
|-------------------------------------|--------|---------|
| Score ≥ 85% | Star | 4 years |
| 85% > Score ≥ 75% | Passed | 3 years |
| Score < 75% (Failed in 1st attempt) | Failed | 1 year |

Objectives & Targets 2023 – 6a Pts



6. Achieve Safe and Successful Execution of Projects and SDM 2023

- Ensure safe execution and completion of projects, including small Capex projects
- Execute Shutdown Maintenance (SDM) 2023 safely and successfully
 - maintain "one-stop SDM Centre" communication
 - target Total Recordable Case ≤ 1
- Ensure ongoing communication on HSE issues, coordination of activities and proper work interface
 - appropriate level of supervision and take prompt corrective actions

Objectives & Targets 2023 – 6b



6. Achieve Safe and Successful Execution of Projects and SDM 2023

- Ensure contractors / subcontractors possess adequate knowledge and competency levels through training and mentoring system*
 - requirement of bizSAFE Level 3 (minimum) for subcontractors

*see slide 21



Knowledge & Competency



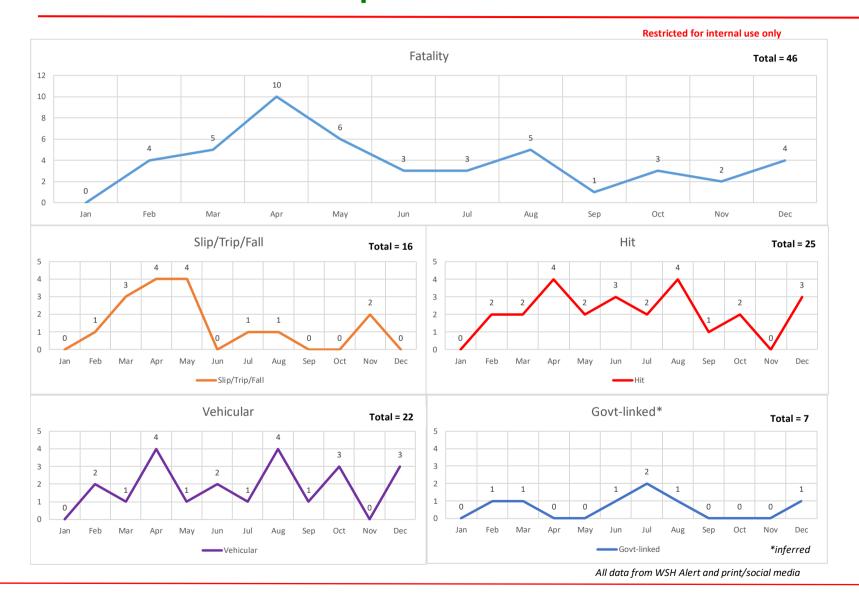
- Apply Workplace Safety & Health in Process Plant (AWSHPP) #
- Complex Safety Induction Training (CSIT) [site specific safety and health awareness] #
- basic language / communication (conversational English)
- where applicable
 - ✓ Work-at-Height Course for Workers
 - ✓ Perform Work in Confined Space Operation #
- trade / skill-based training
- behavioural / culture assimilation
 - ✓ BBS, SOS, STAR

appeal to all Contractors to send their workers (esp. those working in Complex) for courses at PCS ATO (administered by PCCA)

- all fees collected channelled back for workforce HSE promotion and well-being

National Workplace Fatalities 2022





International Advisory Panel (IAP)

- ➤ International Advisory Panel (IAP) for Workplace Safety and Health formed in 2006:
 - ✓ advise on significant trends and developments in workplace practices that would impact WSH in Singapore
 - ✓ share approaches to WSH challenges in other countries that might guide Singapore's WSH developments
 - ✓ critique WSH standards, practices and the regulatory regime in Singapore and provide advice on possible improvements to bring WSH standards in Singapore to the level of leading-edge country leaders
- ➤ 8th IAP meeting convened from 17 19 January 2023, against the backdrop of an increase in workplace fatalities in 2022 to 1.3 per 100,000 workers, amid the post-COVID-19 recovery

International Advisory Panel (IAP)

- theme "Strengthening WSH in the Post-Pandemic Future"
 - ➤ focus on enabling businesses to strengthen WSH as they navigate immediate disruptions post-COVID-19 and plan towards addressing medium- and longer- term issues, such as ageing workforce and climate change, and tapping on technology to enable better WSH outcome
- PCS Senior Advisor and Head of Sustainability, Er. Lucas Ng HK, is on the panel of Local Industry Experts



Key Recommendations of IAP



- IAP offered eight recommendations to strengthen Singapore's WSH in a post-pandemic future
 - placing strong emphasis on top management's responsibility for WSH; top management must foster a safe operations culture where safety considerations are embedded into all aspects
 - extending WSH oversight to contractors in the whole supply chain
 - bring interest of business into greater alignment with WSH
 - building workplaces where workers feel safe to speak up
 - inculcating a more pervasive training culture, beyond foundational training and level up WSH practices
 - improving WSH know-how of small-to-medium enterprises (SME)
 - promoting age-friendly workplace safety practices and designs
 - pre-emptively addressing WSH risks arising from climate change and green technology

https://www.mom.gov.sg/-/media/mom/documents/press-releases/2023/iap-2023-recommendations-report.pdf

International Advisory Panel (IAP)

Senior Minister of State for Manpower Zagy Mohamad emphasised in his closing address of the 8th IAP "We need to ensure that our whistleblowing channels remain accessible, in fact as accessible as they can be, and at the same time remove the fear of reprisals ... because there is always that fear of reprisal should the employers be reported outside of the enterprise. If workers cannot have an open dialogue with their employer, how do you improve workplace safety?"

PCS has in place BBS, SOS and STAR programmes for everyone in any level to speak out and intervene

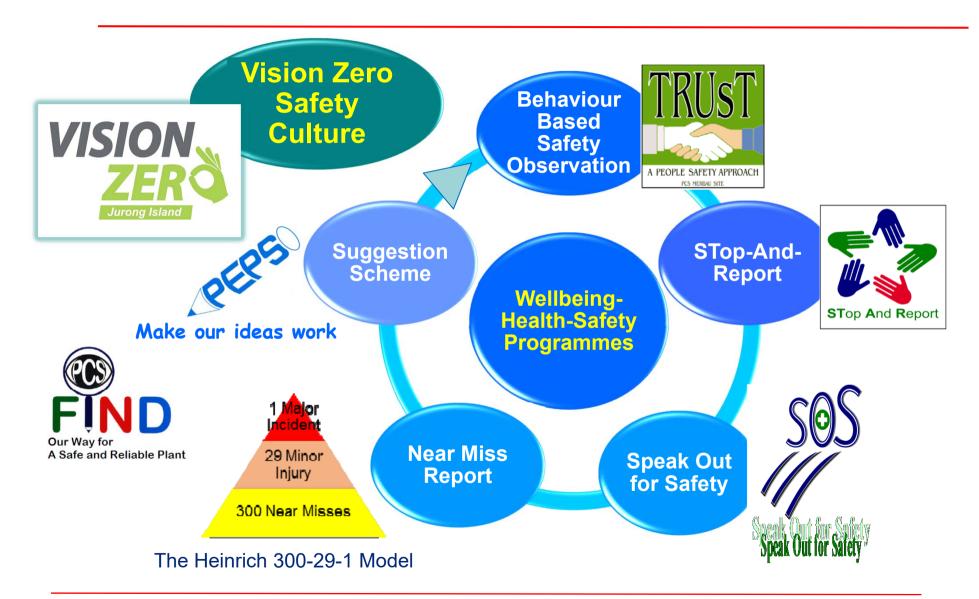


During SDM HSE walkabout, a member of PCS Board of Directors noted a worker stopped her from entering a cordoned off worksite.

Example to emphasise this has been PCS practice all along – speak out / intervene in unsafe act / condition.

Our CULTURE









THANK YOU





















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