

Petrochemical Corporation of Singapore (Private) Limited



Review of HSE Performance for 2017



Review of HSE Performance



- 1 Safety & Environmental Performance in 2017
 - 2 Behavioural Based Safety (BBS)

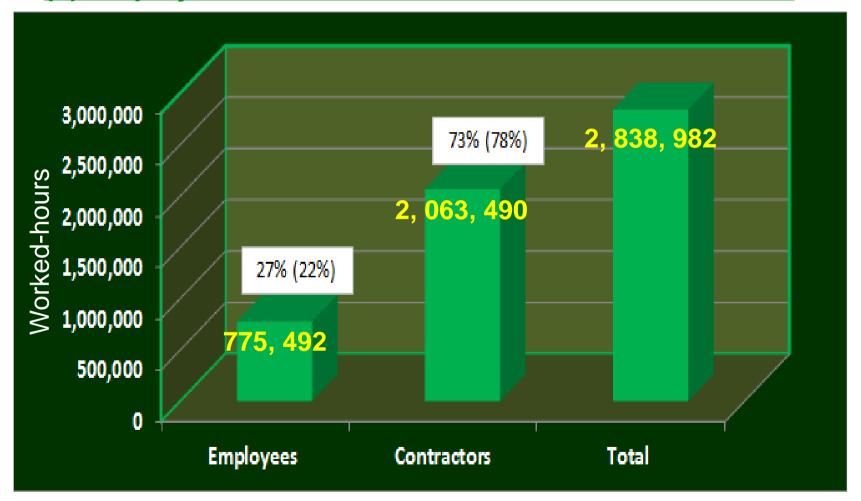
Vision Zero

- 3 Safety Performance Awards in 2017
 - 4 WSHC bizSAFE Programme
- 5 Contractors' HSE Audit
- 6 HSE Achievement in 2017
- 7 Incident-free Workplace Culture





(a) Employees and Contractors Worked-Hours in 2017





() 2016

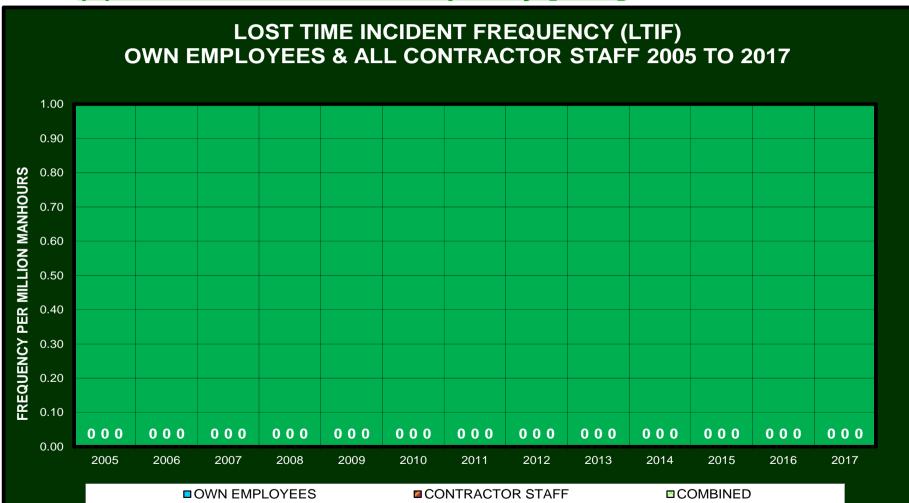


INCIDENT	PCS	CNTRS	Total	Target
1. LOST TIME INCIDENT (LTI)	0	0	0	0
2. RESTRICTED WORKDAY (RWC)	0	0	0	-
3. MEDICAL TREATMENT CASE (MTC)	0	1	1	-
TOTAL	0	1	1	-
4. FIRST AID CASE	0	0	0	-
5. PLANT EQUIPMENT/FACILITIES INCIDENT (PEF)	25	0	25	-
6. NEAR MISS REPORTING (NMR)	181	166	347	-
7. LOST TIME INJURY FREQUENCY (LTI)	0	0	0	0
8. TOTAL RECORDABLE CASE FREQUENCY (TRCF)	0	0.48	0.35	≤1.4
9. Cumulative Hours Worked Without LTI as at 31 Dec 2017 (Million)	39.0			



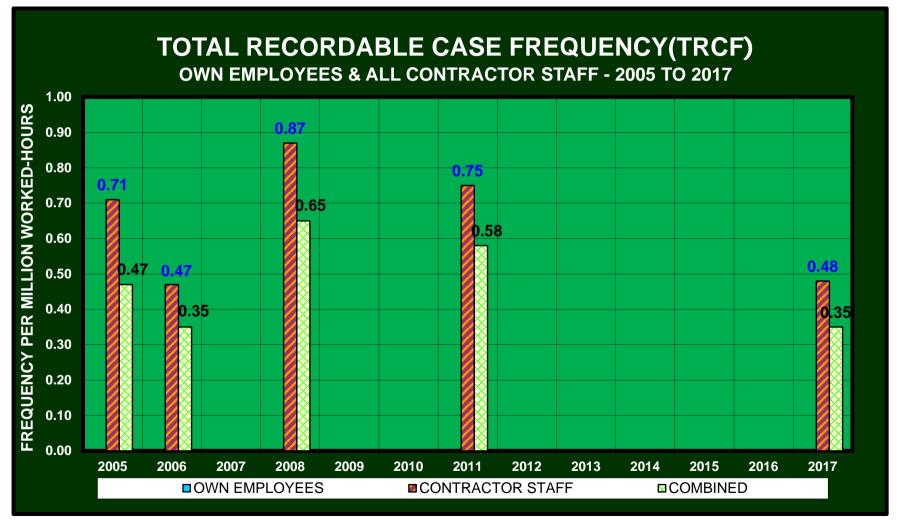


(b) Lost Time Incident Frequency [LTIF]





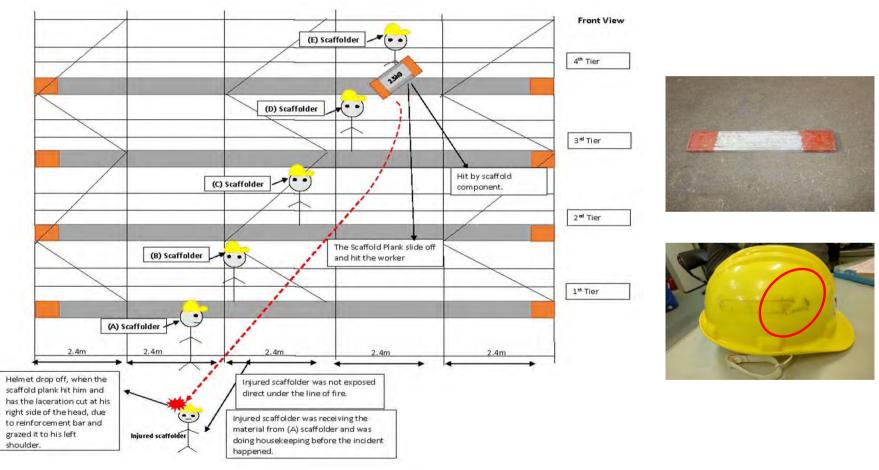
(c) Total Recordable Case Frequency [TRCF]





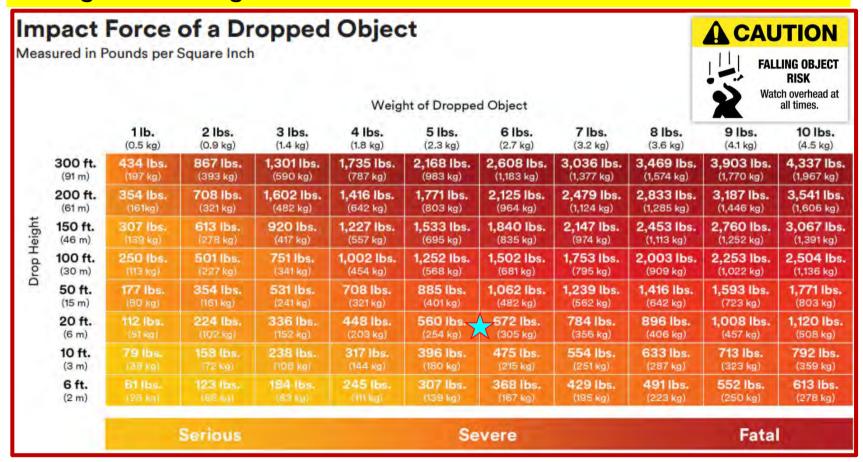


Medical Treatment Case: Worker struck by falling scaffold plank during dismantling scaffold at 2ST-2TK-1270 on 13 Jun 2017





Medical Treatment Case: Worker struck by falling scaffold plank during dismantling scaffold at 2ST-2TK-1270 on 13 Jun 2017





Source: Website



Medical Treatment Case: Worker struck by falling scaffold plank during dismantling scaffold at 2ST-2TK-1270 on 13 Jun 2017

Lessons Learnt

(i) Enhancement to Safe Work Procedure

SWP shall state clearly, handling of scaffold material less than or equal to 1.5 metres shall be passed down, within the scaffold platform, and not outside the platform. Scaffolders at all levels are to move away from line-of-fire immediately after passing material

Guide for safe passing of scaffold planks < 1.5m





X

Unsafe to pass short planks from outside scaffold - Passer need to overstretch at railing and passer unable to grip plank with both hands.



Safe to pass short planks within the scaffold. Both passer and receiver to have eye contact and gripped the length of the plank with both hands.





Medical Treatment Case: Worker struck by falling scaffold plank during dismantling scaffold at 2ST-2TK-1270 on 13 Jun 2017

Lesson Learnt [Cont'd]

(ii) Communication

Emphasise and ensure that "twist-and-turn" signal, with eye contact, of material being passed to affirm that the other person has a grip of the material, is strictly followed

Guide for safe passing of scaffold planks > 1.5m



Do Not stand directly above and below multiple tiers to avoid direct Line of Fire for falling planks & objects.



Passer and receiver must staggered their position and practice Twist and Turn technique with both hands as per Safe Work Procedure and Risk Assessment.



27 Jun 2017, PCS Maintenance/PCC, 3Q RC Meeting



Medical Treatment Case: Worker struck by falling scaffold plank during dismantling scaffold at 2ST-2TK-1270 on 13 Jun 2017

Lesson Learnt [Cont'd]

(iii) Material Handling

Materials are to be segregated and passed according to their type or length. Dissimilar material shall not be passed immediately after, or in between, other material.

(iv) Sufficient supervision

Supervisor to ensure SWP is strictly adhered to at all times. Supervisor to call "<u>time out</u>" when switching to dissimilar material.

(v) Risk Assessment / In-situ Risk Assessment (iRA)

Risk Assessment was revised following the lessons learnt and safe work enhancements. Always practise PCS' In-situ Risk Assessment.





Case Study: Worker struck by falling object

WSH Alert Accident Notification dated 10 November 2017, Ref: 1617185

On <u>01 November 2017</u>, around 08.00pm, a <u>worker was performing housekeeping</u> duties <u>at the ground level</u> of a 6-storey building under construction, when he was <u>struck on the head by a falling piece of timber</u>. He was conveyed to the hospital but subsequently succumbed to his injury.



Recommendations

- (i) Safe working at heights
 - Overlays or screening nets could be erected to guard against objects that are accidentally thrown off the building
 - Catch platforms could also be set up temporarily below the work area to catch any fallen materials or tools





Case Study: Worker struck by falling object

WSH Alert Accident Notification dated 10 November 2017, Ref: 1617185

(ii) Coordinate work activities

 Work on lower grounds should NOT be carried out concurrently, or at least until risks of falling objects from height have been mitigated

(iii) Install no-entry areas

 Set up barricades and put up warning signs or even "sentries" (watch guards) in areas where there is risk of being struck by falling items

(iv) Wear proper personal protective equipment

- Safety helmets must be worn to protect the workers' heads from small falling objects
- Helmets used should conform to Singapore Standard SS98: 2013
 Specification for industrial safety helmets





Case Study: Worker struck by falling object

WSH Alert Accident Notification dated 10 November 2017, Ref: 1617185

(v) Risk Assessment

 Conduct a <u>thorough Risk Assessment</u> (RA) for all work activities <u>to manage any foreseeable risk</u> that may result <u>while performing hazardous work at heights</u>. The RA should look into the following areas, but not be limited to:

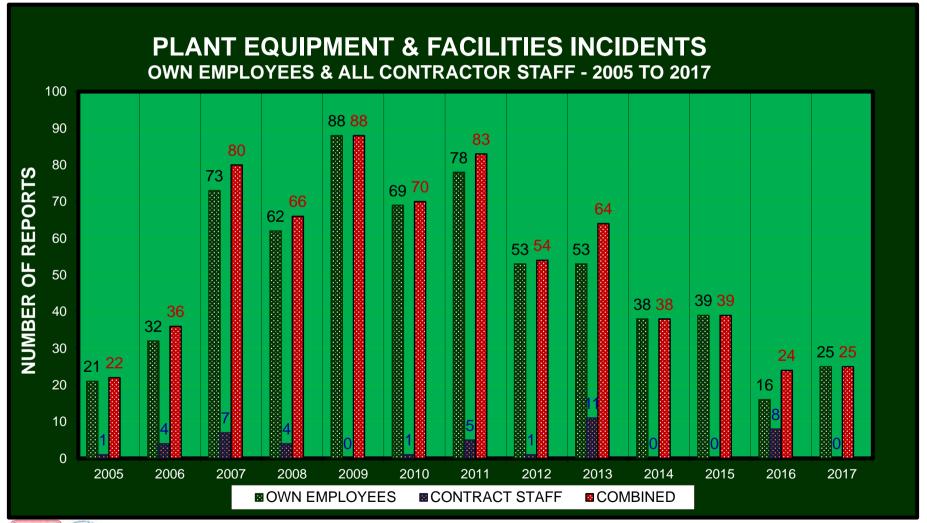
Always be prepared Risks Resolve Issues

- Dislodging of equipment or materials from heights
- Struck by falling materials or tools
- Incompatible work activities
- Emergency response and recovery



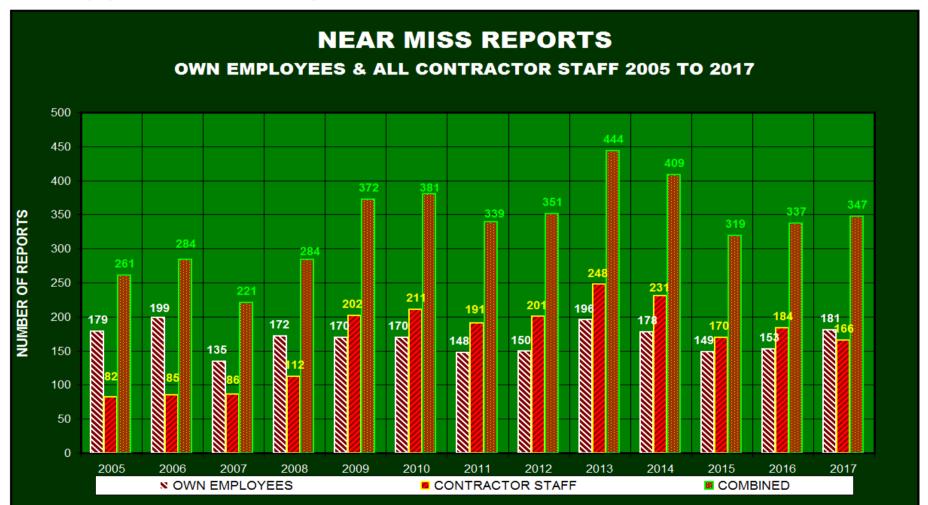


(d) Plant Equipment / Facilities Incidents [PEF]





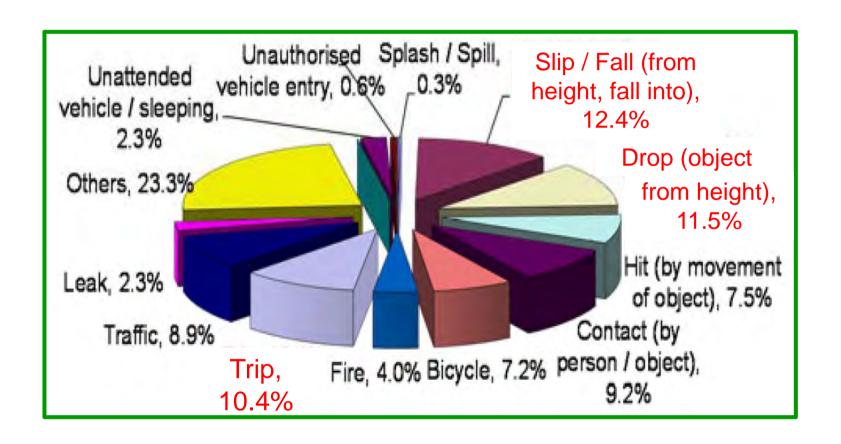
(e) Near Miss Report [NMR]







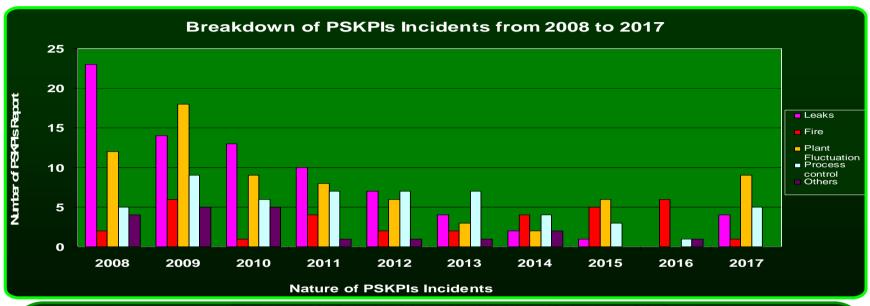
(e) Near Miss Report [NMR]







(f) Process Safety Performance









(g) Environmental Performance

- No major environmental incident in PCS
- Meeting National Environment Agency limits on air emissions and trade effluent discharge







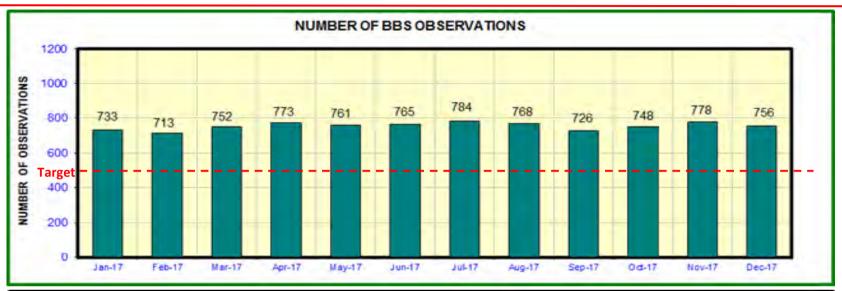


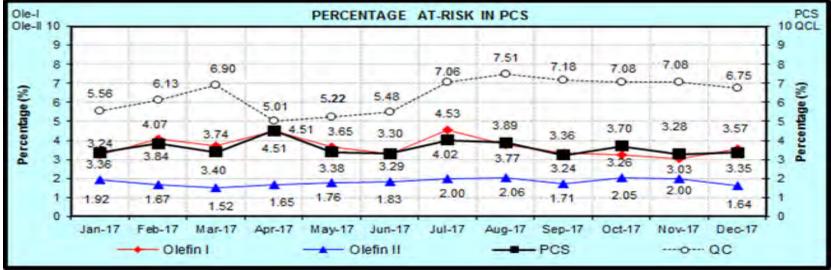


- Observe peer and feedback (no name, no blame)
- Suggest and correct unsafe behaviour
- Identify safer solutions





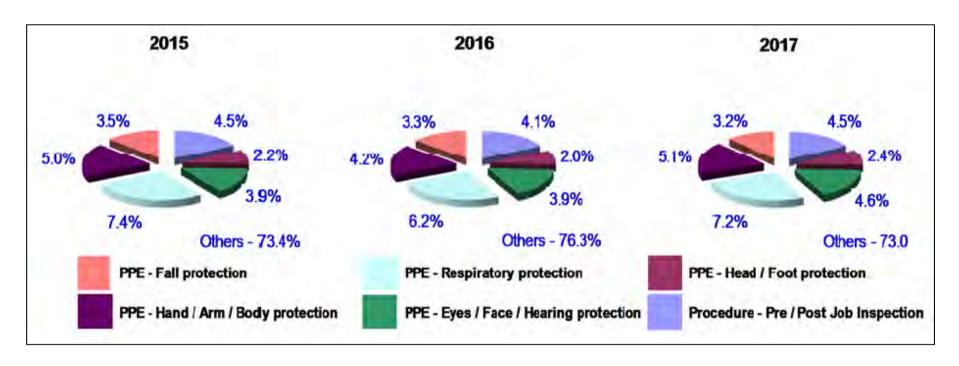








Nature of Behaviour Based Observations Critical Behaviour Inventory



Others: Body Position, Body Use & Ergonomics, Tools & Equipment, Procedure, Environment





Activities

(a) Monthly Exemplary Safe Staff/Worker Role Model

- ✓ Started since **June 2015**
- ✓ Each month, a PCS staff and a contractor worker are selected by the BBS Steering Committee for demonstrating safe and good work behaviour and practices
- ✓ These role models will each receive a token appreciation of S\$50 and acknowledged accordingly on our notice boards and LCD media displays





Exemplary Safe Staff / Worker Role Models for 2017





















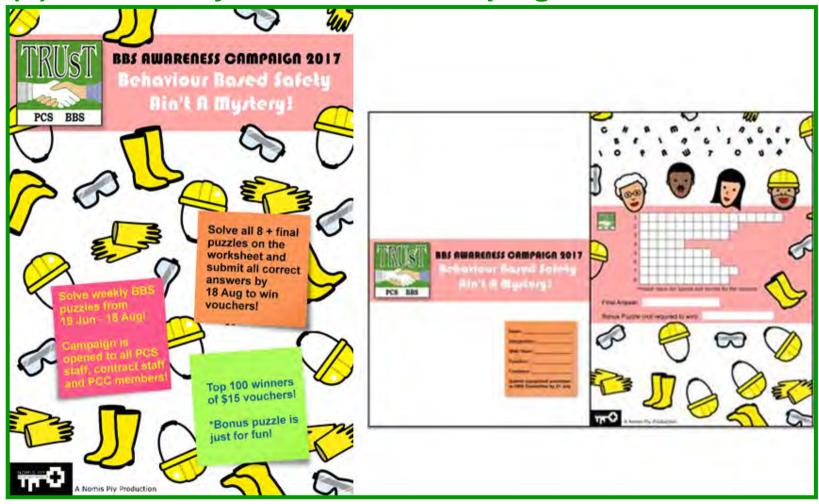






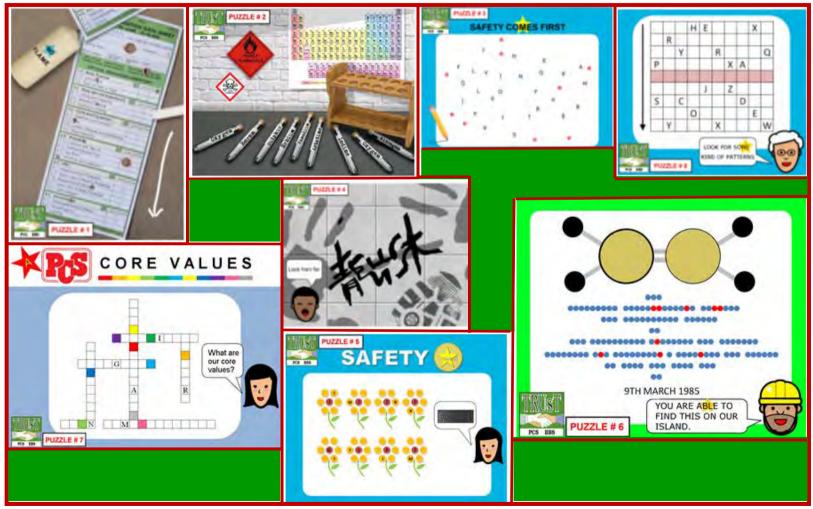


(b) BBS Safety Awareness Campaign



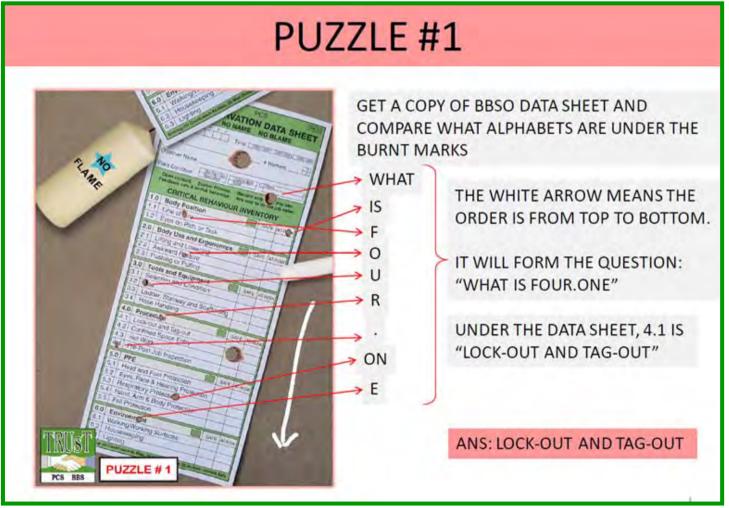


(b) BBS Safety Awareness Campaign - Puzzles





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(a) Combined PCS Employees / Contractors Set Target (CPST)

- Award is given when PCS employees and contractors meet the Total Recordable Case Frequency set and maintain a lost time incident free period for the quarter
- PCS Employees and Contractors Achieved the Quarterly Set Target for all 4 Quarters in 2017
- Contractor workers received vouchers totalling \$\$17,500 for the achievement in each quarter





(b) Contractors Safety Set Target (CSST)

- Award is given to the Direct Contractor Company which achieved a One Year Lost Time Incident Free record while working in PCS
- ➢ Bonus Award given for achieving consecutive 3rd, 5th, 7th, 9th, 12th and every 3-yearly thereafter
- Commemorative plaques and monetary rewards given for the achievement





List of Contractor Companies awarded CSST in 2017

S/N	Company	S/N	Company
1	Petrochemical Complex Contractors Association	15	Meisei International Private Limited
2	A+ Engineering Pte. Ltd.	16	Prowess Engineering Design and Services
3	AETOS Security Management Pte. Ltd.	17	PSM Aircon & Engineering Pte. Ltd.
4	Archiplast Engrg Services & Modelling	18	Sankyu (Singapore) Pte Ltd
5	Asahi Kokusai Techneion Singapore Pte. Ltd.	19	Setsco Services Pte Ltd
6	ComfortDelGro Bus Pte. Ltd.	20	Showa Denki (Singapore) Co. Pte. Ltd.
7	Foster Asia Pacific Pte Ltd	21	Singapore Takada Industries Private Limited
8	Hai Leck Engineering Private Limited	22	TechGems Engineering & Construction Pte. Ltd.
9	Holcam Construction Pte Ltd	23	The Wok People Pte. Ltd.
10	Holcam Facilities Services Pte. Ltd.	24	Trident Hydro Jetting Pte. Ltd.
11	Ikari Services Pte Ltd	25	Veolia ES Singapore Industrial Pte. Ltd.
12	Kurihara Kogyo Co., Ltd.	26	VinDes Engineering Pte Ltd
13	KYC Scaffolding Pte. Ltd.	27	Yokogawa Engineering Asia Pte. Ltd.
14	Loh Kim Chay Marine Service		



Contractor Companies awarded CSST Bonus Award in 2017

	Singapore Takada Industries Private Limited	Hai Leck Engineering (Private) Limited	Yokogawa Engineering Asia Pte Ltd
Type of Plaque	Gold	Gold	Gold
Category *	1	2	3
Years worked w/o LTI	18	15	15
Cheque amount	\$1,000	\$500	\$200







- Category 1 monthly workhour exceeding 6,000 hours
 - Category 2 monthly workhour exceeding 1,000 hours but less than 6,000 hours
 - Category 3 monthly workhour less than 1,000 hours





- PCS is bizSAFE Mentor since 20 Jan 2011
- Mentors work closely with the WSH Council in advancing the WSH agenda in Singapore
- All contractor companies to be certified to at least bizSAFE Level 3 before allowed to work in PCS
- Most of our in-house contractor companies are at Level Star, while three of them are bizSAFE Partners





Source: Website



Maintenance Contractors

S/No	Company	bizSAFE Level	Expiry Date
1	Hai Leck Engineering Private Limited	Partner	12 Jul 2018
2	Kurihara Kogyo Co., Ltd.	Partner	31 May 2019
3	Sankyu (Singapore) Pte Ltd	Partner	11 Jul 2019
4	Asahi Kokusai Techneion Singapore Pte. Ltd.	Level Star	12 Sep 2020
5	Foster Asia Pacific Pte Ltd	Level Star	30 Nov 2018
6	Holcam Construction Pte Ltd	Level Star	7 Sep 2019
7	KYC Scaffolding Pte. Ltd.	Level Star	6 Dec 2019
8	Meisei International Private Limited	Level Star	22 Sep 2019
9	Prowess Engineering Design and Services	Level Star	20 Jun 2019
10	PSM Aircon & Engineering Pte. Ltd.	Level Star	6 Dec 2018
11	SETSCO Services Pte Ltd	Level Star	6 Jun 2018



Maintenance Contractors

S/No	Company	bizSAFE Level	Expiry Date
12	Showa Denki (Singapore) Co. Pte. Ltd.	Level Star	25 Oct 2018
13	Singapore Takada Industries Private Limited	Level Star	21 Feb 2020
14	TechGems Engineering & Construction Pte. Ltd.	Level Star	27 May 2020
15	Trident Hydro Jetting Pte Ltd	Level Star	6 Mar 2019
16	VinDes Engineering Pte Ltd	Level Star	9 Jun 2019
17	Yokogawa Engineering Asia Pte Ltd	Level Star	16 Jun 2020
18	A+ Engineering Pte. Ltd.	Level 3	10 Dec 2018



Service Contractors

S/No	Company	Function in-Charge	bizSAFE Level	Expiry Date
1	AETOS Security Management Pte. Ltd.	F&S	Level Star	10 Mar 2020
2	Archiplast Engrg Services & Modelling	ENG	Level Star	10 Feb 2020
3	AZ Bus Pte. Ltd.	HRA	Level Star	27 Jan 2019
4	Ikari Services Pte Ltd	HRA	Level Star	15 Jan 2020
5	Loh Kim Chay Marine Service	Olefin-l	Level Star	11 Sep 2018
6	Veolia ES Singapore Industrial Pte. Ltd.	HRA	Level Star	5 Sep 2019
7	ComfortDelGro Bus Pte. Ltd.	HRA	Level 3	21 Dec 2020
8	Holcam Facilities Services Pte. Ltd.	HRA	Level 3	18 Jan 2018

5. Contractors' HSE Audit



Scoring guidelines and audit interval

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

Contractors Audited in October 2017 were:

- 13 Oct 2017 A+ Engineering Pte. Ltd.
- 17 Oct 2017 TechGems Engineering & Construction Pte. Ltd.
- 24 Oct 2017 Sankyu (Singapore) Pte Ltd
- 27 Oct 2017 Yokogawa Engineering Asia Pte Ltd





(a) Workplace Safety & Health Performance (Silver) Award





(b) Responsible Care®

- Excellence Award in all six RC Codes
- SCIC Responsible Care® Leadership Award (3rd year)





PCS commits to sustain and enhance its Health, Safety & Environment as well as Process Safety via RC voluntarily





(c) Energy Efficiency National Partnership Awards

- Excellence in Energy Management category
- Honourable Mention in Best Practices category





(d) LTI Free

- ✓ We have worked safely for ~ 39 million hours without lost time incident in 2017
- ✓ Next safety performance target: 40 million hours worked without LTI





Incident-free Workplace Culture → VISION ZERO



Expectation

- ✓ Follow rules and regulations, guidelines and procedures
- ✓ Work Safely, when in doubt, STOP and ASK





Culture

- Everyone empowered (given authority), employees and contractors alike
- ✓ Take action (advice, stop work) when encountering unsafe act or condition



Driving Force

- ✓ Stop And Report (STAR)
- ✓ Intervene (stop the unsafe activity) and report



Speak Out for Safety (SOS)

- ✓ Talk Freely, Fearlessly, and in Friendly manner on Safety
- ✓ Speak Out and take action in potentially dangerous situation





Thank You

















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