

# SCOPE

3rd Quarter 2020  
MCI(P)047/12/2019

**2 45 Million No LTI Milestone**

**3 Sharing HSE Programmes**

Leverage on Technology with Creative Innovation  
Sustainable energy

Er. Lucas NG Hong Kiang  
General Manager of Plant, PCS

TEMBUSU Asia Webinar Series – Achieving 2030 aspirations Contribution from the semiconductor sector  
29 July 2020

CCPS Monograph:

RISK BASED PROCESS SAFETY  
DURING DISRUPTIVE TIMES

**4-5 COMPLEX HSE CAMPAIGN 2020**

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#### SCOPE EDITORIAL COMMITTEE

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# 45 Million No LTI Milestone Plaque Presentation to Contractors



Chua Eng Seng  
HSE

PCS employees and contractors had jointly achieved a combined 45 million hours worked without a Lost Time Incident on 27 January 2020. Traditionally, a celebratory event is held to mark such significant milestones. However, in view of the COVID-19 pandemic and company Business Continuity Plan (BCP), such an event was not possible. In its place, a brief ceremony to present the commemorative plaques was held on 24 August 2020 morning by GM (Plant) Er. Lucas Ng. The event was held with Safe Management Measures (SMM) in place, with maximum of 2 guests per company and limited to 5 persons at any one time. Contractors were allocated different time slots and ushered separately to Administration Building lobby for the ceremony.

A total of 27 contractor companies, including Petrochemical Complex Contractors Association (PCCA), were given commemorative plaques and cash awards which commensurate with the number of hours worked by the company. Their workers were also given awards in the form of EZ-Link cards with a value of S\$200.

In addition, the budget that was set aside for this event was used for PCCA to purchase reusable masks for the workers. PCCA has been supporting workers by giving out masks regularly and this reusable mask is another initiative in support of efforts to contain COVID-19 with visibility and commitment. Workers were given three

masks each which were customised with PCS and PCCA logos. These masks are of good quality and they were made with Nano Zinc Oxide in the fibres which has anti-bacteria properties.

## PETROCHEMICAL CORPORATION OF SINGAPORE (PRIVATE) LIMITED 45-Mil HOURS WORKED WITHOUT LTI AWARD CEREMONY 24 AUGUST 2020

*Care for the Health, Safety and Environment, Share with our Community*

### PETROCHEMICAL COMPLEX CONTRACTORS ASSOCIATION

Mr. Apostol Ivan,  
President of PCCA  
receiving the award



### MEISEI INTERNATIONAL PRIVATE LIMITED

Mr. Yoshihito Mochida,  
Managing Director of Meisei  
receiving the award



### SINGAPORE TAKADA INDUSTRIES PRIVATE LIMITED

Mr. Keisuke Hamasaki,  
Managing Director of STK  
receiving the award



### VINDES ENGINEERING PTE LTD

Mr. Vincent Wong,  
Managing Director of Vindes  
receiving the award



### SANKYU (SINGAPORE) PTE LTD

Mr. Isao Shimomura,  
Managing Director of SKS  
receiving the award



### ASAHI KOKUSAI TECHNEION SINGAPORE PTE. LTD.

Mr. Takashi Watanabe,  
Managing Director of AKTS  
receiving the award



# Sharing HSE Programmes



Bernard Leong  
HSE



In addition to the ongoing efforts to manage the COVID-19 Pandemic, Workplace Safety & Health Council (WSHC) is pushing out initiatives to move the WSH 2028 plan forward. Among the new initiatives, WSHC, together with the National Trades Union Congress (NTUC) and Ong Teng Cheong Labour Leadership Institute (OTCi), are conducting a series of one-day "WSH U'dvocate Workshop" for union leaders and Industrial Relations Officers (IROs). The workshops are conducted virtually via ZOOM web conferencing platform.

In the WSH 2028 plan, there are three broad strategies, of which one is "Strengthen WSH Ownership". One key recommendation is to "Strengthen WSH Ownership of Workers". WSHC have worked with NTUC and curated the "WSH U'dvocate Workshop" to equip union leaders and IROs with the basic Workplace Safety and Health (WSH) skills and knowledge and be the V.O.I.C.E\* for WSH at their workplaces.

One of the topics covered in the workshop is "Worker Consultation and Participation Programmes" which is about empowering workers to take WSH ownership by developing a culture of worker consultation and participation in WSH at the workplace.

WSH Council invited PCS, as a representative company that have effectively implemented such worker consultation and participation programmes, to share learnings and

challenges. HSE Manager, Er. Bernard Leong, shared PCS' programmes, at the 3<sup>rd</sup> run of the Workshop on 8 September 2020. At the heart of the programmes are Behaviour Based Safety (BBS), Speak Out for Safety (SOS) and STop And Report (STAR).

He also stressed the importance of encouraging Near Miss reporting, in a "no blame" environment, and quoted H W Heinrich's theory of accident prevention, in relation to preventing incidents.

The session was well received with several commendations and queries on worker "buy-in", trust, ownership and culture, in particular on its "No Name, No Blame" Behaviour Based Safety (BBS) programme

## They are V.O.I.C.E:



### VOICE

WSH Advocates serve as feedback and communication channels between management and workers.



### OBSERVE

WSH Advocates look out for unsafe acts and conditions at the workplace; they are an extra pair of eyes to make sure that the workplace is safe.



### INVOLVE

WSH Advocates walk the safety talk and are very involved in safety and health activities in the workplace.



### CARE

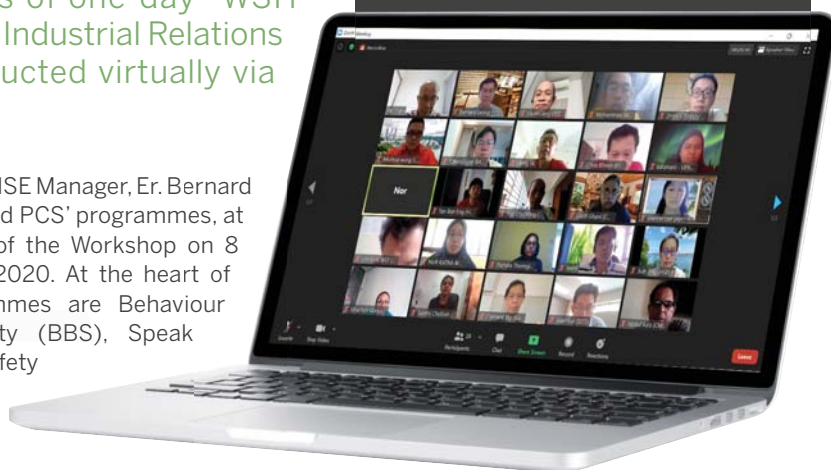
WSH Advocates encourage their fellow workers to work for the safety and health of one another.



### ENCOURAGE

WSH Advocates help their fellow workers reinforce the learning points from past incidents.

\* V.O.I.C.E - WSH Advocate Programme is a programme any company can adopt to generate support for WSH across all levels in the company. WSH Advocates roles include V.O.I.C.E.



and empowerment to staff and contractors at all levels, to intervene/stop any unsafe act or condition, in its STop And Report (STAR) programme.

PCS continues to actively engage, share and support WSH Council and industry associations in furthering the WSH 2028 agenda and Vision Zero.



# Complex HSE Campaign 2020



Tan Peck Luan  
T&O



The Complex HSE Campaign 2020 organizing committee with guests at the Opening Ceremony.

## Pre-recorded addresses by



MD of DSPL Mr Tokumoto Kazuya



MD of EMPL Mr Jacobus Hartato



Chairman for WSH Council Mr John Ng

The annual Complex HSE Campaign, which aims to promote HSE - Health, Safety and Environmental awareness among the employees and contractors of The Singapore Petrochemical Complex (SPC) companies, was jointly chaired by Denka Singapore Pte Ltd (DSPL) and Ethoxylates Manufacturing Pte Ltd (EMPL) this year, with the slogan 'Health is the Greatest Wealth'.

Organizing the Campaign this time was met with fresh challenges amid the Covid-19 pandemic, from the initial uncertainty over the duration of the Disease Outbreak Response System Condition (DORSCON) Orange alert level to meeting the requirements for Safe Management Measures (SMM) at the workplace. Despite the restrictions, all companies were committed to showcase our culture for sustained workplace HSE promotions under any circumstances.

The Opening Ceremony for the Campaign was live-streamed on the 8<sup>th</sup> July 2020 via a webcast on the SPC Facebook page in place of the traditional face-to-face gathering and lunch for the very first time. This was done in order to reach out to a wider audience with minimal physical interaction, so that guests, employees and contractors working from different locations were able to witness the event.

The webcast commenced with an introduction by emcee Ms Suhana Kadir, followed by a pre-recorded welcome address by the Managing Director of DSPL, Mr Tokumoto Kazuya. He reminded all about the importance of communication to ensure safety in the workplace amid the current Covid-19 situation, and that the use of digital technology together with our network of people was crucial to help us overcome the difficulties.

Next, Mr Jacobus Hartato, Managing Director of EMPL, delivered a keynote address which he emphasized the importance of both physical and mental health during this difficult time. Health is a critical aspect which can affect the worker's ability to work safely, and is a major contributor towards unsafe acts.

Lastly, Guest-of-Honour Mr John Ng, Chairman for the Workplace Safety and Health (WSH) Council, gave an address which he commended the SPC companies for adopting various measures to enforce SMM at the workplace, and urged all companies to prioritize workplace safety and health in their daily operations. Mr Ng also encouraged viewers to participate in the National WSH Campaign's persona quiz to find out which aspects of health they could be neglecting that may lead to injuries at work.

The Complex HSE Campaign was then declared opened by a ribbon cutting ceremony officiated by General Manager (Plant) of DSPL Mr Keiichiro Koga and Plant Manager of EMPL Mr Sedy Ganes. A helium balloon with the Campaign slogan 'Health is the Greatest Wealth' was also raised to commemorate the event, and the webcast was concluded by a video montage of SMM measures implemented by companies in the SPC.

During the Facebook live event, we were heartened by the many positive comments and words of encouragement from viewers, including those from the WSH Council, PCS Management, employees and many other supporters. To date, there are a total of more than 700 views of the video, which is still available for watching on the SPC Facebook page.

In order to comply with the requirements for SMM at the workplace, there were no talks held during the Campaign this year. Instead, we published 2 Bulletins - 'Combating Fake News' and 'Safe Loading on Vehicles' and a Quiz related to them, as well as a Crossword Puzzle on general health knowledge.

**8 July 2020**

Opening Ceremony  
(via Facebook live webcast)  
Distribution of souvenirs

**13 July 2020**

Bulletin 1  
- Combating Fake News

**16 July 2020**

Crossword Puzzle

**20 July 2020**

Bulletin 2  
- Safe Loading on Vehicles  
Quiz

**29 July 2020**

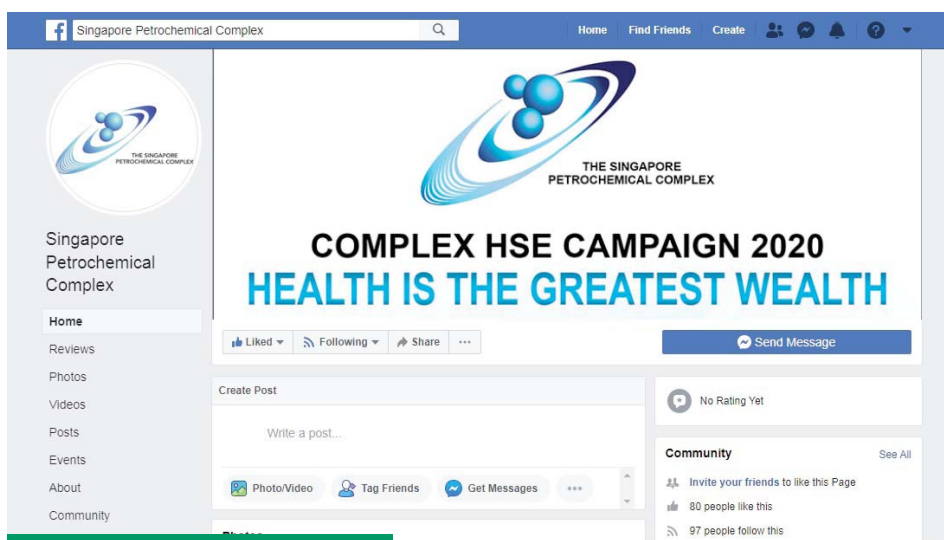
Closing of Campaign

The Campaign was officially closed on the 29th July 2020, when the Complex HSE flag was handed over from DSPL and EMPL to Mitsui Elastomers Singapore Pte Ltd, the chairing company for HSE Campaign 2021.

Although many aspects of the Complex HSE Campaign this year were done differently from previous years, we were glad that the focus on HSE promotion was not compromised even as we adjusted our ways of life to accommodate the various measures aimed at curbing the spread of the Covid-19. The SPC Facebook page which was specially created for the Campaign



Ribbon cutting ceremony by (left-right) Plant Manager of EMPL Mr Sedy Ganes and General Manager (Plant) of DSPL Mr Keiichiro Koga.



Facebook page of The Singapore Petrochemical Complex



Complex HSE Flag handing over from DSPL and EMPL to MELS

this year will remain live after the event as a general page meant for SPC companies

to share their activities for awareness and promotional purposes.



# PCS Sustainability and Environmental Efforts




Francis Tan  
T&O

PCS has been proactively leveraging and managing technologies to achieve efficient and reliable operations, including energy and water management and their conservation, in a sustainable manner. Since beginning of PCS operations in 1980s, PCS embarked on continuous improvement in its ongoing energy conservation to minimise any environmental impact.


It is well in line with the national efforts in reducing greenhouse gas (GHG) emissions.

PCS has also been active in sharing its energy efficiency initiatives, some are deemed “creative innovation” ways, in various public

platforms. These public sharing sessions included Energy Efficiency National Partnership (EENP) programme, World Engineers Summit (refer to page 5 of PCS 3rd Quarter 2019 SCOPE), technical talks organised by professional organisations such as Institution of Engineers Singapore etc.




**TEMBUSU** Asia Consulting  
Sustainability . Environmental . Engineering . Management




**LEARN FROM EXPERTS  
IN SEMICONDUCTOR  
AND SPECIALTY CHEMICALS INDUSTRY  
ON MANAGING GHG EMISSIONS**


Online Zoom Webinar  
JULY 29, 2020, 4PM Singapore (GMT+8)




**OUR PANELISTS:**




**Er. Tan Seng Chuan**  
Managing Director  
TEMBUSU Asia Consulting (TAC)



**Er. Lucas NG Hong Kiang**  
General Manager  
Petrochemical Corporation of Singapore (PCS)



**Ang Zhi Wey**  
Director, Global Facilities  
Innovation and Integration  
Micron Technology



**N. Sathishkumar**  
Senior Consultant  
TEMBUSU Asia Consulting (TAC)

GM(P) Er. Lucas Ng Hong Kiang was privileged to be invited by Tembusu Asia Consulting (TAC) to be one of the Webinar's panellists, to share industry's continual efforts on managing

GHG emissions. The Webinar attracted close to 60 participants including some overseas participants which was held on 29 July 2020 on 16:00 hours.



Petrochemical Corporation of Singapore (Private) Limited

**Leverage on Technology with Creative Innovation  
Sustainable energy**



**TEMBUSU**  
Asia

**Er. Lucas NG Hong Kiang**  
General Manager of Plant, PCS

*TEMBUSU Asia Webinar Series – Achieving 2030 aspirations Contribution from chemical & semiconductor sector  
29 July 2020*

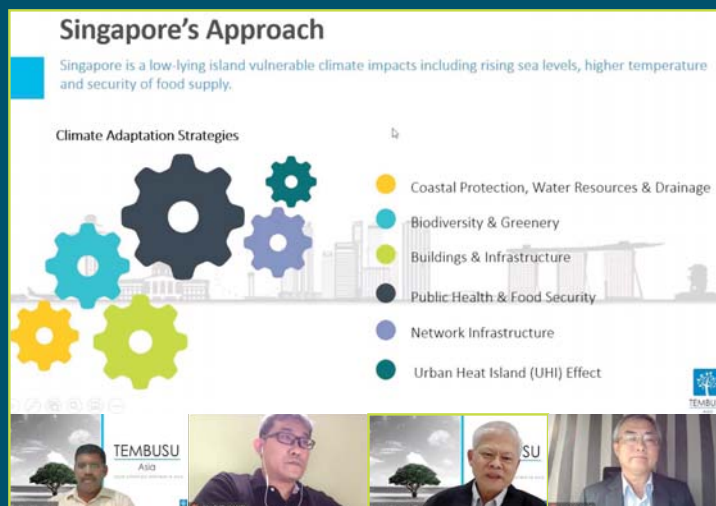


The title of Er. Ng's presentation was **Leverage on Technology with Creative Innovation to Sustainable energy**. The sharing illustrated PCS's integration of sustainability considerations and contribution in its manufacturing operations to achieving 2030 aspirations.

## Singapore approach – Climate Adaption Strategies

Er. Tan Seng Chuan, Managing Director of TAC in his opening shared climate change and its impacts to a low-lying island state like Singapore, such as rising sea levels, higher temperature and food security. It is an existential threat as highlighted by PM Lee Hsien Loong in his 2019 National Day Rally speech.

It was very apt that during the recent Singapore's Cabinet reshuffle announced on 25 July 2020, PM Lee had renamed the Ministry of the Environment and Water Resources (MEWR) as Ministry of Sustainability and the Environment (MSE).



PCS's contribution to achieving 2030 aspirations in areas such as:

## PCS's practical approach to energy conservation

Er. Ng highlighted that PCS leverage on four (4) basic strategies in formulating energy efficient improvement plans (EEIPs) as follows:



## Process Optimisation and Control – Harnessing technology to improve operations efficiency

Er. Ng added that PCS continues to harness technology to improve its operations efficiency such as installation of Operator Training Simulators (OTS) to sharpen operators' response.

Another example shown above (right) was using Advanced Process Control (APC) for product value optimisation. Energy consumption in distillation column operation was optimised by controlling product compositions at both ends of the column.

## Water conservation projects

Climate action has to include managing and saving water. Saving water means saving the energy that would have to be used to produce the water. Hence saving energy means reducing GHG emissions.



Er. Ng's presentation included sharing on two (2) Demonstration Plant's in PCS, on Water Conservation Projects that use water resources more efficiently namely:

## Project A – Supplementary Indirect Seawater Cooling (SISC)

It involved installation of supplementary plate heat exchangers to remove substantial amount of returned heat through using indirect seawater cooling thus reducing the heat duty on existing Cooling Water Tower thus saving approximately 700 m³/day of freshwater make-up.

This novel installation also avoided any negative impacts of sea water associated with substituting freshwater make-up in a cooling tower with seawater.

## Project B – Treated Wastewater Recovery Project (TWRP)

By applying membrane water technology, this project was able to recover approximately 600 m³/day fresh water savings by recycling the treated industrial waste water instead of returning to the sea.

PCS would like to thank TAC for giving PCS and Micron Technology the opportunity to share their industry's perspectives in managing GHG emissions yet improving the quality of life of society amidst Climate Change.



# CCPS Global Technical Steering Committee Member WebEx



Kira Chng  
HSE

The Technical Steering Committee (TSC), within the Center for Chemical Process Safety (CCPS), is responsible for assisting the CCPS director to develop an overall multi-year programme for CCPS, to define the priority for project selection, to select specific project for CCPS and to review the status of project programmes and the budget performance. TSC is chaired by the CCPS director and consists of one member from each CCPS member company.

On 18 June 2020, CCPS TSC held a Global Technical Steering Committee Member Meeting virtually via Webex for all the CCPS member companies at 2200 hours (time zone: GMT +8).



Louisa Nara, CCPS  
Global Technical Director, CCPS

The virtual meeting started with a warm welcome speech by the Global Technical Director for CCPS, Louisa Nara. She welcomed the participants to the “New Reality” that the world is currently experiencing due to the global pandemic. At the same time, she mentioned that even though Covid-19 has changed the many ways people lived, but some of the things remain unchanged. The hazards of chemicals, frequency of incidents happening around the world and last but not least, the needs of CCPS to find a way to continue to add value to its members were some of the items she mentioned that stayed consistent even throughout this global pandemic. She ended her speech with a concluding remark, “As we go forward and learn and evaluate and change, and change and learn and evaluate, things will be different. We have been learning to do more with less and in some cases, better than before.”

After the welcoming speech by Louisa Nara, the virtual meeting continued with the presentation on “Safety Moments: Management of Organisation Change (MoOC)” by Pamela Nelson, Process Safety Management Consultant from ioMosaic. She emphasised on the importance of MoOC due to the rapid and unexpected changes. MoOC will be able to ensure that the gaps in essential skills and positions are filled. With reference to the present global pandemic situation, she has noticed that companies did not account for the MoOC for significant staffing changes in response to Covid-19 and that may eventually create a lone worker position due to the implemented measures. She quoted the catastrophic incident that happened in BP refinery, Texas City, in 2005, which had resulted in 15 fatalities. This incident was partly due to a lone worker trying to troubleshoot a critical hazardous process startup. It is important to ensure that the potential hazards are not overlooked when lone workers are involved in critical transient operations.



Shakeel Kadri  
Executive Director & CEO, CCPS

Executive Director & CEO for CCPS, Shakeel Kadri continued the meeting by updating the members on the CCPS Business Updates & Covid-19 Impacts. He started the presentation with the iteration of Antitrust Rules for Members Activities, followed by CCPS Vision and Mission.

Moving on, he updated the members on the schedule of the Virtual Engagements that CCPS had been carrying out since Covid-19 and the focus area for CCPS in 2020.



## CCPS Vision

“To protect people, property and the environment by bringing the best process safety knowledge and practices to industry, academia, the governments and the public around the world through collective wisdom, tools, training and expertise.”

## CCPS Mission

Eliminate process incidents in all industries globally by:

- **ADVANCING** global PS technologies, culture, and management practices;
- **SERVING** as premier worldwide resource of Process Safety;
- **FOSTERING** knowledge and understanding of Process Safety;
- **PROMOTING** Process Safety as key societal value and expectation; and,
- **ESTABLISHING** Process Safety as foundation for responsible operation.



After the presentation by Executive Director & CEO for CCPS, our very own prestigious GM(Plant), Er. Lucas Ng, presented on the topic *Managing Current Risk – Amid Covid-19 Situation*. He shared with the members that PCS had anticipated and made preparations for future pandemics by developing the Business Continuity Plan (BCP) back in 2006 and eventually activated the BCP in February 2020, in line with the Singapore Government's declaration of DORSCON Orange. He elaborated in details the measures that PCS took to manage the risks during this current crisis:



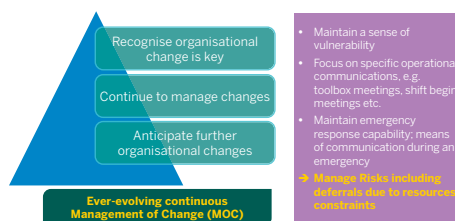
### Lead the crisis response

- ➔ By developing BCP, forming Disease Outbreak Response System (DORS) team and adapting to evolving situation.
- ➔ By recognising that organisational change is key and ensuring clear line of command and competencies of the stakeholders.
- ➔ By assigning trainers to train new employees to ensure that minimum staffing are maintained throughout the organisation.
- ➔ By anticipating and making preparation for further organisation changes due to:
  - ➔ Employees or contractors taking sick leave
  - ➔ Being placed on quarantine orders or stay home notices.

PCS had also considered the possibilities of reassigning staff in self-isolation to work remotely from home to relieve the workload of those site-essential staff in the organisation.

### Effective communication

- ➔ By maintaining effective communication to all levels of staff in the organisation so that first-hand information can be disseminated or circulated, and to minimise risks of miscommunications or fake news.

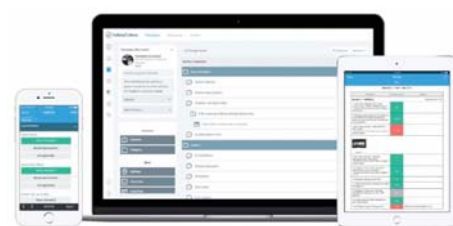


### Maintain sense of vulnerability

- ➔ By constantly reminding employees and contractors to maintain vigilance and focus, to eliminate any complacency and to raise the awareness of process hazards and potential consequences.
- ➔ By highlighting critical equipment maintenance, operation and shift routine tasks.
- ➔ By emphasising plant fixed fire equipment protection, inventory with hazardous reaction / polymerisation potential due to prolonged period.
- ➔ Last but not least, evaluate the impact and consequences of minimum manning in the plant.

### Manage deferrals

- ➔ By carrying out HAZOP / transient-HAZOP studies virtually to ensure all existing risks were identified and managed even during this global pandemic.
- ➔ By ensuring MOC procedures are maintained and adhered to throughout this period.
- ➔ Manage deferrals effectively and to regularise as soon as practicable to avoid cascading effect on statutory inspection of equipment



### Process data management

- ➔ Provide: To provide all necessary IT support, including hardware and software, to ensure the employees will be able to work from home efficiently and effectively.
- ➔ Evaluate: To evaluate the telecommuting needs and access to process information from home.
- ➔ Ensure: To ensure all cyber-security threats and risks are minimised.

After the presentation by GM(Plant), Er. Lucas Ng, Andrew Goddard from Arkema presented on the topic *Managing Risks During and After Covid-19*. He emphasised on the importance of understanding Hazards and Risks – Hazard Identification and Risk Assessment (HIRA), and managing risks through Management of Change, Safe Work Practices and Contractor Management.

The meeting continued with the presentation on *Culture and Discipline During and After Covid-19 and Focus on Culture During and After Covid-19*, presented by Mary Cosaro from Pluspetrol and Karen Tancredi from Chevron respectively.

The meeting ended with the presentation of *Planning Committee Highlights* by TSC Planning Committee Chair, Fred Henselwood, and Nominee for CCPS emeritus member.

It was truly a unique experience to be able to attend the CCPS Global Technical Steering Committee Member meeting via Webex as it was the first time that I had attended a meeting during the night. But surely, I am glad that I was given the chance to attend this virtual meeting as it has really provided me with a positive and good exposure.



# PCS Integrated Management System (IMS) Recertification and Migration to SS 651 during COVID-19 Pandemic Situation



Ahmarapala John  
HSE



Group photo with the Course Leader, Ms Rebekah Yap for the IMS refresher and awareness course on 10 Oct 2019

On 22 Jan 2020, Singapore Chemical Industry Council (SCIC) and Standards Development Organisation (SDO) supported by Ministry of Manpower (MOM) and National Environment Agency (NEA) launched the SS 651 : 2019<sup>1</sup>. Chemical industries must meet the timeline shown below to adopt the new standard.

SS 506 Part 3 : 2013<sup>2</sup> was based on the OHSAS 18001 standard (SS 506 Part 1). However, with the publication of ISO 45001 (Occupational health and safety management systems - Requirements) on 12 March 2018, the official status of OHSAS 18001 : 2007 is "withdrawn".

SS 651 : 2019, Safety and Health Management System for the Chemical Industry, is specifically developed for the chemical industry to address both occupational safety and health management system requirements and process safety management system

requirements. SS 651 will be superseding SS 506 Part 3, with the withdrawal of SS 506 Part 3 by Dec 2021 (in line with the withdrawal of SS 506 Parts 1 & 2 in 2018).

SS 651 : 2019 is a modified adoption of ISO 45001 "Occupational health and safety management systems - Requirements with guidance for use". In this standard, certain modifications due to national requirements and the particular needs of the local industry have been made.

Organisations that are certified to SS 651 : 2019 would meet the requirements of ISO 45001. The changes to the standard with respect to SS 506 Part 3 include the following:

- ➔ Addition of SS 506 Part 3 elements into ISO 45001 without bringing in new requirements.
- ➔ Moved all the recommendations, examples and explanatory text into Annex A.
- ➔ Additional terms and definitions relevant to Process Safety Management have been included.

**22 Jan 2020**  
SS 651 : 2019  
Standard  
publication

**01 Apr 2020**  
All new (initial)  
certification  
assessments to  
adopt SS 651 : 2019

**11 Mar 2021**  
SS 506 Part 1 to be  
replaced by ISO  
45001

**31 Dec 2021**  
End of SS 651 : 2019  
Transition  
Cessation of SS 506  
Part 3 : 2013 standard

<1> Singapore Standard (SS) 651 : 2019 ISO 45001 : 2018, MOD Safety and health management system for the chemical industry - Requirements with guidance for use. SS 651 is an integration of ISO 45001 and SS 506 Part 3 process safety elements. The transition period for company to upgrade to SS 651 is two (2) years from 22 January 2020 till 31 December 2021. Therefore, SS 506 Part 3 : 2013 Occupational Safety & Health Management Systems - Part 3 : Requirements for the chemical industry shall cease by 01 January 2022.

<2> PCS, on 1 December 2009, became the first enterprise to achieve certification to Singapore Standard SS 506 Part 3 : 2006, accredited by Singapore Accreditation Council.





IMS internal auditor course from 14 ~ 17 Oct 2019: Group photo with the Course Leader, Ms Rebekah Yap

This standard is expected to be used by the chemical industry, which includes organisation and their service providers in the chemical, petrochemical, oil refining, pharmaceutical companies, wafer fabrication plants and bulk storage terminals.

Prior to the launch of SS 651 : 2019, PCS has been actively preparing for the transition certification to ISO 45001 : 2018 as replacement for OHSAS 18001 (SS 506 Part 1) during the re-certification audit in May 2020. PCS sent 25 internal auditors including 2 PCS Maintenance Contractors HSE Committee (PCC) members to attend a 2-day Integrated Management System (IMS) comprising of ISO 45001 : 2018, SS 506 Part 3 : 2013 and ISO 14001 : 2015 awareness and refresher training from 9 ~ 10 Oct 2019. We also selected a batch of new internal auditors for PCS succession planning to replace the retiring internal auditors in the future. The 24 employees, including 3 PCC members, attended the 4-day comprehensive internal auditor course on IMS from 14 ~ 17 Oct 2019.

During the launch of SS 651, it was mentioned during the Q&A session that the internal auditors who have attended the ISO 45001 awareness training should be able to perform the internal audit for the company as a requirement for SS 651 : 2019 certification.

PCS original plans to conduct the internal audit in early April 2020 during the COVID-19 pandemic situation with PCS on Business Continuity Plan (BCP) was put on hold as the government announced the activation of Circuit Breaker and stricter control measures were implemented on 7 Apr 2020. When our certification body, SOCOTEC Certification Singapore Pte. Ltd. (SCS) informed PCS that remote audit in view of COVID-19 pandemic situation is allowed and acceptable by Singapore

Accreditation Council (SAC), we received Management's approval to go ahead with the external re-certification and migration to SS 651 : 2019 on 30 April 2020. SCS was informed accordingly to provide the audit plan. Pre-audit for SS 651 migration was already planned for on 23 and 30 Apr 2020 to gauge PCS readiness for the migration to SS 651. As PCS is operating under BCP during COVID-19 pandemic, employees were divided into teams. The Non-site Essential Staff, are split into two (2) Teams (A&B) with 1 team Working In Office (WIO) and another Working From Home (WFO), on a weekly rotation basis. Therefore, the internal auditors and the Function to be audited must be carefully selected and planned in order to complete the internal auditing process successfully. The auditors, audit schedule, scope and Function assigned as tabulated. (see Table 1).

Internal auditing is one of the most powerful safety monitoring techniques and an effective way to avoid complacency and highlight slowly deteriorating conditions, especially when the auditing focuses not just on compliance but effectiveness of Health, Safety, Environmental Management System (HSEMS) implementation.

Internal Auditors' roles include monitoring, assessing, and analysing organisational risk and controls; and reviewing and confirming information and compliance with policies, procedures, and legal requirements.

Internal auditors sometimes look at the same data or perform some of the same steps as external auditors. Internal auditors' main objectives are to find problem and fix it before external auditors review our practices. The internal audit was successfully carried out by the internal auditors with 33 observations including 11 HSE site inspection findings.

PCS recertification and migration audit was carried out from 11 ~ 15 and 9 ~ 11 Jun 2020 (total of 10 days with HSE site inspection and photographic evidence submission) by SCS. Prior to the commencement of audit, an opening meeting was held with Senior Management and key personnel for introduction and to review the purpose, scope and methodology of the audit and to confirm the understanding of the objectives of the Audit Programme. Procedure for remote assessment / audit – in view of COVID-19 pandemic were also discussed. All confidential documents, e.g. images, recordings, documents and records used for remote audit will be deleted upon acknowledgement of the final Audit Report. The table shows a sample documents requested to be provided by all Function by the external auditors for audit review purposes. Physical inspections were carried out for the evidence collection and verification as required during the assessment of Health, Safety, Environment Management System (HSEMS). Compliances and non-compliances were observed and noted. At the close of the audit, a total of 9 observations and no non-conformance were recorded. On the final day, an Exit Meeting was held with Senior Management and key personnel to discuss the audit findings and recommendations. Ambiguities about the audit findings were clarified. Key personnel were informed about the availability of the final audit



Course participant present their group audit findings and recommendations

Table 1

Internal audit (Remotely)										
INTERNAL AUDIT SCOPE: PCS HSEMS, ISO 14001 : 2015, ISO 45001 : 2018 & SS 651 : 2019										
Function	Ole-I	Ole-II	Mai	PUR	F&S	HRA	QC	ENG	HSE	T&O
Lead Auditor	Chua Eng Seng (HSE)	Ahmarapala J A John (HSE)	Eric Tan Bok Koon (HSE)	Tan Peck Luan (T&O)	Tiah Nam Kuan (Mai)	Tan Hong Yeung (Mai)	Tay Loo Kheng (T&O)	Dominic Chee Koi Wah (T&O)	Charlie Chua Kim Soon (ENG)	Foo Sin Charm (QC)
Auditor	Lionel Cai Xing Lai (ENG)	Kira Chng Wei Lang (HSE)	Benjamin Tan Chun Ming (T&O)	Tio Gian Leng (T&O)	Tan Koon Jui (Ole-II)	Tan Kian Boon (ENG)	Lim Kian Huat (Mai)	Kira Chng Wei Lang (HSE)	Loh Sing Keong (HRA)	David Tng Tien Huat (PUR)
Auditor	Colin Toh Jin Jin (Mai)	Jessica Tan Shi Yun (T&O)	Tok Ai Tee (QC)	Ngai Khai Yoon (Ole-I)	Ng Chong Seng (QC)	Lee Hock Chye (T&O)	Rina Soh Hui Ting (ENG)	Guo Kang Hui (T&O)	Ngai Jia Ming (T&O)	Ngai Khai Yoon (Ole-I)
Auditor	Chong Hong Yeng (T&O)	Khoo Yi Hao (Mai)	Boo Kim Hock (T&O)	Cerine Lim (HRA)	Jescinda Yeoh Lay Kuan (PUR)	Ho Thean Seng (Ole-I)	Tan Lip Wee (F&S)	Aaron Lau Chee Wai (Mai)	Tan Zhen Yu (Mai)	Ahmarapala J A John (HSE)

**Note:**

**RED:** Non-site Essential Staff Team B; **BLUE:** Non-site Essential Staff Team A

1. Audit date: to complete by **22 May 2020** [Failure to do will result in Non-Compliance (NC) during the external audit]
2. Participation of all available auditors are required due to BCP.
3. The audit shall be conducted **remotely** (via webex, email, whatsapp, telephone, etc).
4. Inspection to be carried out with all recommended safety precaution taken according to PCS BCP, ensure no "cross-contamination" of BCP teams and fully compliance to the COVID-19 stricter "Circuit Breaker" measures.
5. HSE inspection required for Olefin-I / Olefin-II / Mai (Workshop) / PUR Warehouse / QC and F&S.

6. Lead auditor to compile a list of audit questions based on the audit scope and send to the Function to be audited.
  7. Function to assign Focal point, relevant support staffs to reply to the audit questions and provide evidences where required.
  8. Lead auditor to compile all audits findings, recommendations and prepare report.
- \* Pre-audit for migration to SS 651 : 2019 (ISO 45001 : 2018, MOD) scheduled on 23 and 30 Apr 2020 (Completed)
- \* External IMS recertification / migration audit by SCS scheduled from 11 ~ 15, 20, 28 May 20 and 9 ~ 11 Jun 2020

**Sample list of documents requested by Auditor during the remote audit**

1	Master list of OHS/HSE records	16	Records of Permit-To-Work [3 latest different types]
2	External and internal issues	17	'Master List Of SDSs' [latest]
3	Needs and expectations of workers and other interested parties	18	SDSs - based on GHS [2 samples]
4	S&H policy & communication evidence [briefing record/ display at plant (photo)]	19	Masterlist of Statutory Equipment
5	Evidence of consultation and participation of workers	20	Report of Examination of Statutory Equipment [2 different samples]
6	Letter of appointment of workers' representatives [if any]	21	Record of 'PPE Issuance' [latest]
7	OHS Risks and opportunities Register	22	Record of Breathing Equipment Inspection [1 latest sample]
8	Letter of appointment of RA/ RM Leader/ Members	23	Record of First Aid Box Monthly Inspection
9	Record of risk assessment [Plant / Office/ Facilities/ Store] - 8 samples	24	'Masterlist of CMR' - for year 2019/2020.
10	Record of 'In-Situ Risk Assessment Briefing' - 2 samples	25	Record of 'MOC' [latest]
11	Record of 'OLEFIN-I Monthly HSE Committee Meeting' minutes - [1 latest sample]	26	'Masterlist of Pre-Startup Safety Review (PSSR) Report'
12	Record of report of Fire Drill [combined with Fire & Security]	27	Record of 'PSSR Report [1 sample]
13	Process Safety related training certificates [2 latest sample]	28	Record of 'Weekly HSE Site Inspection' [1 latest sample]
14	'Occupational First Aid Course' - training certificate [1 sample]	29	Record of 'Daily Maintenance Work Plan / Report'
15	'Assess Confined Space For Safe Entry And Work' training certificate [1 sample]	30	'WSQ Apply Workplace Safety and Health in Process Plant' - training certificate [1 latest certificate]

report. The final recommendation from the audit team is PCS to be recertified to ISO 14001 : 2015 and had successfully migrated to ISO 45001 : 2018 and SS651 : 2019. According to SCS, PCS is their 1<sup>st</sup> client to be certified under the new Singapore Standard SS 651 : 2019 Safety and Health Management System for the Chemical Industry. Subsequently, checks with Singapore Accreditation Council (SAC) and Standards Development Organisation (SDO), PCS is the first company to be certified to the new SS 651 on 19 June 2020 (date certificate issued).

PCS had successfully migrated our health, safety and environmental management system to the new SS 651 : 2019. Although preparation time was short, PCS were able to successfully recertified to ISO 14001 : 2015 and migrated our management system to SS 651 : 2019 as a result of close cooperation amongst all staff, internal auditors, function focal point with full support of top management during these COVID-19 Pandemic situation. PCS can proudly use the new logos shown below in our company collaterals.



Exit meeting with auditors Mr. Mirza Laeeque Baig (lead), Mr. Richard Goh Wee Tat, HSE Manager Mr. Bernard Leong, HSE Officers Mr. A. John, Mr. Kira Chng and other key personnel presence virtually via WebEx conference.





# Behaviour Based Safety (BBS) Champion Award for 2019/2020



Lim Kian Huat  
Maintenance



To recognise the best effort of our 15 BBS Champions, nominated from Olefin-I, Olefin-II, Fire & Security, Quality Control, Human Resource & Administration, Maintenance and Contractor representative, the BBS Steering Committee had since 2014 selected the most outstanding Champion for the Quality BBS Submission (QBS) award.

The annual award is based on a set of criteria which includes:

1. Consistent effort in submitting the Quality BBS.
2. QBS selected as top five submission for each quarter.
3. QBS selected for PCS in-house HSE bulletin from the top 5 selected each quarter and
4. No safety violation and their excellent work in promoting BBS TRUST.

A plaque and \$100 shopping voucher were presented to Awyong Kit Hoong, from Maintenance, for being the best Champion 2019/2020 term of service by PCS General Manager (Plant) Er. Lucas Ng on 24 August 2020 at the PCS Admin Building.



## Employee News

### LONG SERVICE

Awardees for the period July-September 2020

#### 5-Year

Lincoln Lee	HR & Admin
Kew Jia Ming	Marketing & Sales
Loh Serh Shurn	Olefin-I
Sim Kai Sheng	T&O
Jessica Tan	T&O

#### 10-Year

Ramesh Singh	Olefin-II
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#### 15-Year

Eu Chee Kong	Engineering
Choy Chee Hao	Olefin-I
Mohammed Sukri bin Hamzah	Quality Control
SK Sarkar	T&O

#### 20-Year

Florence Goh	Account & Finance
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#### 25-Year

Mohd Hisam bin Hashim	Maintenance
Mohmad Hapizal bin Amat Sarpin	Olefin-II

#### 30-Year

Monica Koh	HR & Admin
Ng Teo Hong	Olefin-I
Chua Kee Piew	Olefin-II
Ng Chye Chay	Olefin-II

#### 35-Year

Chew Kai Leong	Maintenance
Chew Thiam Huat	Maintenance
Maarof bin Sulaiman	Olefin I
Chan Hai Liang	Olefin II
Mohamed Sapei bin Hamdin	Olefin II

### NEW EMPLOYEES



**Mr Daniel Muhamad Nor**  
Technician, Olefin I  
Joined 3 Aug 2020  
Hobbies: Football, Body building



**Mr Ng Kian Peng**  
Technician, Olefin I  
Joined 20 Aug 2020  
Hobbies: Gym, Mixed Martial Arts



**Mr Jovan Yong Chuan Min**  
Technician, Olefin II  
Joined 3 Aug 2020  
Hobbies: Music, Photography



**Mr Muhamad Akmaluddin bin Jamaludin**  
Technician, Olefin I  
Joined 20 Aug 2020  
Hobbies: Football, Swimming



**Mr Hairil Hakim bin Mohamed Amin**  
Technician, Olefin I  
Joined 20 Aug 2020  
Hobbies: Running, Football



**Mr Pratheswaran s/o Chandra Segar**  
Technician, Olefin II  
Joined 20 Aug 2020  
Hobbies: Soccer

### HEARTIEST CONGRATULATIONS marriage

NAME	FUNCTION	SPOUSE
Neo Wei Lun Calvin	T&O	Goh Wan Xin

### births

NAME	FUNCTION	NEW BORN
Heng Chee Wee	Fire & Security	Boy

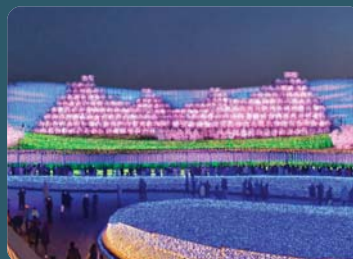
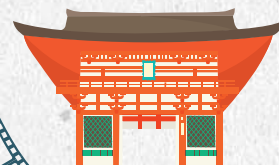


# Kyoto

## JOURNAL



Joyce Sim  
Feedstock Procurement



the various spectacular light installations. The theme for 2019/2020 was "SAKURA – The beauties of nature" and we were treated to a spectacular light show featuring 12 different views of cherry blossoms throughout the changing seasons.

The next day, we took another short trip to Kobe, where we took the unique Rokko Cable Car up Mount Rokko. Reaching the summit, we were greeted by the early morning view of the city below. Various attractions on

Mount Rokko are also connected by the circular bus service, but unfortunately we were unable to visit the music box museum as it had been closed for the day. For the adventurous, Rokko Snow Park would be the stop for you to enjoy winter sports such as skiing or snowboarding.

Known as the cultural capital of Japan, a trip to Kyoto often includes visiting its numerous Buddhist temples, Shinto shrines, beautiful gardens and palaces. During our 7-day trip in December 2019, instead of just visiting these hotspots, we also decided to visit some of Kyoto's lesser known sites.

On our first day, we visited the famous Kinkakuji (Golden Pavilion), a Zen temple completely covered in gold leaf. We were fortunate that the weather was good, and the pavilion was beautifully reflected in the pond it overlooked.

Our next stop included a short stop at the Fushimi Inari Taisha (Fushimi Inari Shrine), where we took a short hike along the famous Senbon Torii ("thousands of torii gate"), a trail covered with densely packed vermilion-coloured torii gates. Of course, we had to snap a few quick photos of ourselves standing amongst the torii gates!

As evening approached, we took a short trip to Nagoya via the Shinkansen. There we visited the Nabana no Sato Winter Illuminations. As night fell, we had the opportunity to experience

A must-try in Kobe is the famous melt-in-your-mouth Kobe beef and we were delighted to have a scrumptious meal at the Kobe Steak Ishida restaurant. We watched on as the chef skilfully grilled the mouth-watering Kobe beef right in front of us, before sinking our teeth into the sumptuous steak.

After the hearty meal, we took the Shin-Kobe ropeway up to the Kobe Nunobiki Herb Gardens. We were excited to see that the Western-styled buildings were dressed in festive red to complete the Christmassy feel. After a refreshing walk in the beautiful garden, we shopped for some souvenirs such as essential oils and herb-related merchandise. On the way down, although it was winter, we were still able to see some herbs.





A personal recommendation would be the Nishiki Market located in Kyoto. There, we were treated to the interesting sights of fresh seafood and vegetables on sale along the path. At the market, I was thrilled to be able to find Yuzu powder, one of the few items we could purchase to bring back to Singapore. We also made a stop at Sawawa Softcream where we tried the rich matcha ice cream and matcha latte.

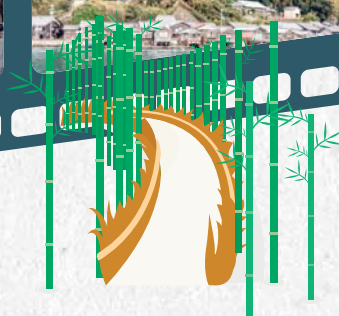
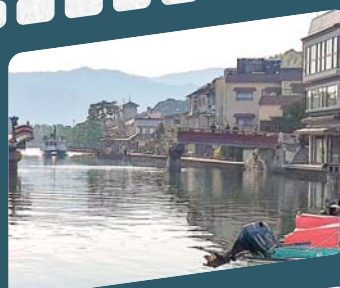
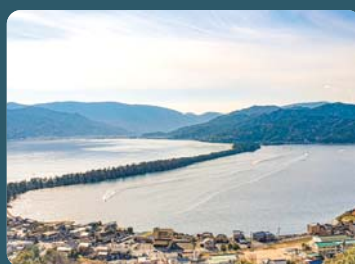
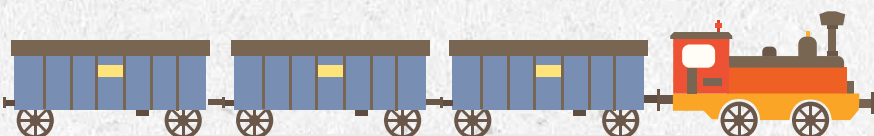
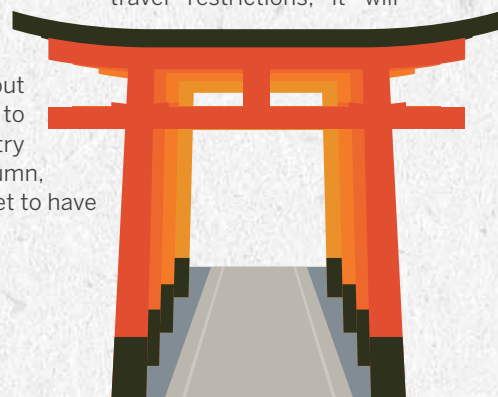
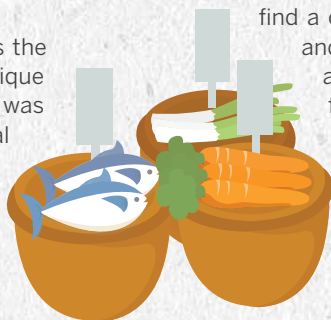
Another unique experience I would recommend is the Eizan Electric Railway. We boarded the line's two unique trains known as KIRARA and HIEI respectively. As it was winter, we were unable to enjoy the scenic seasonal views offered by the train rides. Instead, we were treated to some Christmas illuminations at the final station and breathe in the fresh air offered by the quiet mountain town. Since it was winter, we could not ride the cable car and ropeway to access the summit of Mount Hiei and the Enryakuji Temple which is a UNESCO World Heritage Site.

On our second last day, we decided to head for Amanohashidate, a pine-covered sandbar located in the scenic coastal region of northern Kyoto prefecture. After a short boat ride and a cable car up the mountain, we were offered with the view of the Amanohashidate Sandbar (which roughly translates to "bridge in heaven"). A must-do would be to view the sandbar using what is known as "matanozoki", where you turn your back towards the bay, bend over and look at the sandbar between your legs. After lunch, we took a bus to another location to experience feeding seagulls whilst on a round-trip boat ride. It was scary at first to see the birds flying so close by and we had to be careful lest the birds (especially the naughty eagles) decided to snatch the food directly from our hands. However, we soon got the hang of it and we would cheer whenever a seagull (not

an eagle) successfully caught a snack we had thrown towards them. From onboard the boat, we were also able to see the unique houses of Ine along the coast. To end of our side trip to Amanohashidate, we decided to walk through the pine forest located on the sandbar. Although it was a long walk, we were glad we did as we were able to observe the unique growth of the windblown pine trees, some of which had unique names to them. We were also surprised to find a cannon, which originated from the Battleship Kasuga, and had been donated to the village in 1923. After the walk along the sandbar, we also crossed the rotating bridge for Amanohashidate.

To conclude our trip to Kyoto, we visited the Kyoto Railway Museum, where we were able to come close to old and new trains. Through the exhibits, we learned about the history of trains in Japan, the evolution of the Shinkansen bullet trains, and the advancements made in making trains in Japan more effective and safer. There was even a steam locomotive exhibit in the museum and an opportunity to ride the SL steam locomotive itself around the museum premises.

Through this short 7-day holiday to Kyoto, I found myself being mesmerised with the unique sights and experiences. With the current pandemic and travel restrictions, it will be some time before my next adventure in another part of Japan, but I am looking forward to seeing what the country has to offer during autumn, a season which I have yet to have a chance to experience.





# Durian Fest 2020



Eugene Koh  
Fire & Security



packets of MSW durian were delivered to the PCS canteen and SSRCC, colleagues and function representatives were there to assist in the collection and distribution to PCS colleagues.

This year, most of our employee get-together events have been put off due to the Covid-19 pandemic situation, in accordance with all the strict preventive measures, safe distancing rules and regulations.

SSRCC decided to carry on the yearly affair of the Durian Fest as many of our employees are durian lovers. With this, the SSRCC is also hoping to provide a little encouragement and morale boost for all the employees especially during this challenging period.

SSRCC faced multiple challenges with information gathering and planning, so that we can achieve the event objectives while complying with existing SMM regulation and guidelines to keep everyone safe and healthy.

After consideration, the SSRCC voted on and selected vacuum-packed Pahang Old Tree Mao Shan Wang (MSW) durians from "Durian Lobang King" - a business that is operated by two young and ambitious durian lovers who are pleased to serve.

This special edition Durian Fest took place in August. Instead of the usual gathering at the Fire station engine bays, many

