



# *Society of*

# *Loss Prevention*

*In the Process Industries*

*Update*

DEC 2009

YOKOGAWA



*Group picture of the SLP visitors before the commencement of the plant tour*

## Yokogawa Engineering Asia Pte Ltd shows its prowess

The October 14, 2009, visit to Yokogawa Engineering Asia Pte Ltd (YEA) at Bedok is the second to an electronic manufacturing facility. The first was to Chartered Semiconductor Manufacturing in August 2008. These two companies represent the two ends of the semiconductor industry -- Chartered is the maker of the chips and Yokogawa is the user of such chips. Both are manufacturing companies and they both employ advanced manufacturing technologies eg. JIT automation and so on. For those of us in the heavy petro-chemical industry, these companies are a world apart. Even for people in the pharmaceutical industry, who maintain stringent standards of housekeeping, the standard of cleanliness required for these electronic plants is breathtaking.

YEA was first established in Singapore in 1974 and has expanded manifold since then. At present it is in the Industrial Automation and Control, and the Sales, Engineering and Servicing businesses. It is also the Regional Headquarters for Yokogawa. At the Bedok site, it houses the Yokogawa Engineering Centre. This is the first such centre outside Japan for Yokogawa. The Singapore plant is

the global manufacturing centre for Distributed Control Systems (DCS) for the company. This is a source of pride for YEA.

SLP visitors were immediately impressed by the discipline of the operation. Apart from the usual security checks at the gate, visitors were instructed to use the official walk path to enter the building. Safety was stressed everywhere. Safety signs were prominently displayed and were complied with. Visual information was widely used to convey quality and safety messages. The culture is well embedded. Safety and quality performance are exemplary. For instance, there has not been a quality issue for many years. They live the ZERO DEFECT life.

Many favorable observations were made during the plant tour. The work area was well lit. Workflow was such that each component was automatically delivered to a work station just in time – not sooner and not later. This JIT discipline led to several advantages – planning was precise, work in progress was minimized and there was no clutter. Warehousing of components was also minimized

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**Tay Cheng Pheng,  
our VP, presenting  
a memento to  
Lim Boon  
Choon, VP of  
Yokogawa  
Engineering  
Asia Pte Ltd**



with consequential lowering of working capital. Workers were productive and unhurried. Quality checks were performed by each worker at the end of his/her stage of the operation. Each worker was a quality control inspector. No defective sub-assembly or part was allowed to pass to the next stage. It is no wonder that YEA can achieve ZERO DEFECT. This is no slogan. As is reported in many quality textbooks, when everyone is a QC inspector, there is little need for a QC department. QC people can concentrate on continuous improvement. A product eg. an electronic measuring instrument would only be scheduled for production when an order had been received. Because of this high degree of integration, finished product inventory was also low and delivery schedules were short.

**CP Lim of  
Yokogawa talking  
about Technology  
Enablers for  
Improving Plant  
Safety**



Elimination of waste was an overriding principle -- time, resources, space and movement. Engineers would immediately react to an alarm eg. a QC problem, along the production line to quickly clear it and reduce work stoppage. If this cannot be achieved within 2 hours, it is taken off line for deeper investigation.

The YEA plant is relatively low risk in that there are no toxic chemicals that are used in the process unlike a chip wafer plant. It does use hydrocarbon solvents for cleaning components.

The technical capabilities of YEA to design, build and service sophisticated control systems were presented to SLP visitors at the end of the tour. Of particular interest was a system to manage alarms. This issue is of importance to all chemical plants with automatic controls.

YEA was an excellent host. SLP members enjoyed a buffet dinner at its rooftop garden and took in the nighttime views of eastern Singapore including the Eastern Anchorage. It was a relaxing time for hosts and visitors and everyone took advantage of the opportunities for networking. Many SLP members are Yokogawa customers. Our VP Tay Cheng Pheng thanked YEA for its hospitality and presented a memento to YEA's VP Lim Boon Choon to mark a very educational and enjoyable occasion.

**A typical  
work area  
in the plant -  
neat and well lit**

