

<STRICTLY EMBARGOED UNTIL 22 MARCH 2012, 7PM>

**Speech by Mr Hawazi Daipi,  
Senior Parliamentary Secretary for Education and Manpower  
At the Singapore Chemical Industry Council (SCIC) Annual Dinner 2012 and  
Responsible Care Awards 2011 Presentation  
On Thursday 22 March 2012 7.00 pm  
At Mandarin Orchard Singapore, Grand Mandarin Ballroom**

Dr Tay Kin Bee, Chairman, Singapore Chemical Industry Council,

SCIC Board Members,

Industry partners, Ladies and Gentlemen,

A very good evening to all. I am pleased to join you tonight at SCIC's Annual Dinner and Responsible Care Awards. This is also an excellent opportunity for me to highlight the key role that the chemical industry plays and how my Ministry hopes to work more with key industry players like yourselves, on achieving better outcomes in your operations in Singapore. And your support is critical because of the important role that the chemical industry plays in the Singapore economy.

### **The Singapore chemical industry**

2 Last year, the chemical industry accounted for thirty per cent or about S\$ 81 billion of Singapore's total manufacturing output<sup>1</sup>. Over 23 thousand workers or 5.7 per cent of the manufacturing workforce is in

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<sup>1</sup> Source: MTI Economic Survey 2011.

the chemicals sector. The total investment made by almost 100 companies on Jurong Island totalled more than S\$ 42 billion. This investment has further grown from S\$ 1.6 billion in 2010 to S\$ 2.5 billion in 2011<sup>2</sup>.

### **Government supports the growth of chemical industry**

3 Because of the industry's support and confidence in Singapore as a worthy investment, we are increasingly becoming recognised as a leading energy and chemical hub. Our government has also done our part to help the chemical industry grow further. Besides the development of Jurong Island as a petrochemicals manufacturing hub, we have also embarked on the construction of Jurong Rock Caverns as an underground storage facility to meet the growing needs of the plants.

### **Importance of WSH to chemical industry**

4 Both the companies and our government have invested tremendous resources in the plants, the infrastructure and the resources. A single serious incident in the chemical industry can have severe impact on the economy, people and environment. We must constantly bear in mind the dangers and possible implications of chemical incidents. Ultimately, the well-being of thousands of

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<sup>2</sup> Source: JTC Jurong Island Factsheet

employees, who could be affected by incidents within the industry, depends on how leaders in the sector manage this concern.

5 As leaders in this industry, all of you play a key role. Singapore, as a small land mass with integrated manufacturing, infrastructure and facilities development, cannot afford to have a misstep in the management of process safety. Any incident will have great impact on us. The highly integrated nature and inter-reliance of a set-up like Jurong Island means that each plant operating there can easily impact another if processes are not properly followed. If each plant choose to operate based on its own concerns, without regard on how it can impact another – that would be a recipe for disaster.

6 Considering the size of investment and volume of manufacturing output, the chemical industry's leaders must take on strong ownership of safety. In Singapore, we have seen our share of incidents. The number of fatalities in the petrochemical sector increased from 1 in 2009 to 4 in 2011. There were also more work incidents, with number of man days lost due growing from 7,700 in 2009 to 31,000 in 2011.

7 The big names in the Oil and Gas sector are not immune to incidents. Many have seen cases over the years though we have been

fortunate, to some extent, to be able to isolate such incidents and minimise their impact. But, with each case, we see weaknesses in the systems that should have been in place, we see actions that circumvent processes that could have been stopped and less-than-desirable capability or competency levels amongst our managers, supervisors and workers. In other words, we see room for improvements. When it comes to safety, we must never leave any room for errors. Hence, we all must work together to enhance, improve and sustain the management of safety and environmental issues in the sector. Let me just highlight a few areas where my Ministry and the WSH Council have been working with the industry on and if your company is not yet on board these initiatives, I urge you to do so.

### **Initiatives to enhance safety and health**

8 One area is in ensuring the proper management of chemicals in this sector that is in contact with chemicals all the time. To guide the industry in improving in-plant chemical management, the WSH Council rolled out new Guidelines on implementing a Management of Hazardous Chemicals Programme or MHCP last year. We were also very active in the implementation of the Globally Harmonised System of Classification and Labelling of Chemicals or GHS. This is a global initiative led by the United Nations towards a harmonised approach in labelling of chemicals

so as to ensure proper storage and use. Many developed nations have put in place regulations and guidelines to support GHS implementation. For e.g., the United States regulates implementation of GHS under its U.S Hazard Communication Standard which, in 2009, had put in place a three-year implementation timeframe. For Singapore, a National GHS Taskforce was set up by the Ministry of Trade and Industry. This Taskforce is now under MOM. To guide workplaces, we have developed guidelines and also put in place a national timeline for the implementation of GHS over the next few years. SCIC is also supporting our chemical management and GHS efforts through awareness seminars and training courses. If your company has not already implemented GHS or the MHCP, I urge you to send your staff for training and implement these measures soon.

9 Another key area I would like to address is about competency development of workers in the chemical sector. In a study by the United Kingdom on the Controlling of Major Accident Hazards or COMAH, past major incidents showed that human error was, by far, the most frequent cause for an incident. Hence, if we want to prevent work incidents, we need to develop a competent workforce that understands, acts on safety and can spot issues that may lead to failures or incidents. Ensuring and

maintaining competence of workers is a key challenge for industries within the chemical sector.

10 This is not easy as our contractors and workers are mobile and work for various workplaces. Often, the lack of understanding of safety and the various systems, coupled with different requirements at different workplaces, may cause our contractors to exercise mere compliance to the safety requirements imposed upon them. This culture of compliance and a lack of understanding of the objective, intent and purpose of various safety systems posed great hazards. We do not want our workers and supervisors to blindly follow processes and proceed with work, even when an obvious risk is right in front of them. We need to cultivate workers who can understand and appreciate risks. Therefore, my Ministry intends to review UK's Control Of Major Accident Hazards or COMAH in short, to see how we can benefit from its learnings and improve the competency of our workforce as well.

11 Another important area is learning from past incidents and near misses. A thorough review of such incidents often reveal valuable lessons, especially in the areas of root causes and human factors as well as the issue of competence of operators. Officers from my Ministry will be embarking on a study this year to look at other countries'

practices, for example, the approach of US's Chemical Safety Board to provide independent investigations, so that we can better learn from incidents and take steps to prevent recurrence.

12 The fourth area that we are looking at is in the development of leading indicators to establish better understanding of possible risks and be one step ahead of the issues. When it comes to plant process safety, there are often low probability outcomes but, if they do happen, can lead to major catastrophes. Therefore, we always look for leading or predictive indicators, and employ modelling and simulation.

13 The WSH Council's Chemical Industries Committee has been studying the use of leading Process Safety Performance Indicators to help identify lapses and potential failures within the Management System. Leading Indicators of process safety give a fairly accurate assessment of process performance and the true state of the safety performances, without having to learn from lagging indicators like expensive and painful process incidents. For example, when looking at maintenance activities, rather than just tracking lagging indicators on the number of work incidents or how they occurred due to the failure to do proper maintenance, a leading indicator would be to track the number of planned maintenance activities that are actually completed on schedule.

This would be more meaningful and help to address possible issues of why some activities were delayed before an incident takes place.

14 Let me share one incident that could have been prevented if we tap on both leading and lagging indicators. In this case, a liquid transfer pump was not scheduled for maintenance even though it should have been. The pump failed and liquid chemical leaked from the transfer pipe to the storage tank. Fortunately, the leak was small and contained. By providing a tracking indicator on the status of equipment maintenance, this incident could have been prevented. The Council has developed a guideline on a set of leading indicators that would be useful for the chemical sector to track<sup>3</sup>. This is on the Council's website for industry consultation. If you have not yet given your inputs, I urge you to review them and help us make the indicators more relevant for industry use.

## **Role of SCIC**

15 As we aim to raise safety standards in the chemical sector, SCIC plays a pivotal role in stewarding the industry through the commitment to responsible care and sustainable development. Many of what I have

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<sup>3</sup> The draft guideline is on the WSH Council website at [https://www.wshc.sg/wps/themes/html/upload/announcement/file/PSPI%20Guidelines%20-%20Draft%20for%20Public%20Consultation%20\(1\).pdf](https://www.wshc.sg/wps/themes/html/upload/announcement/file/PSPI%20Guidelines%20-%20Draft%20for%20Public%20Consultation%20(1).pdf)

mentioned could not have been completed or done comprehensively if not for SCIC's support and partnership.

16 Tonight, the annual SCIC-Responsible Care Awards will also once again recognise those who have achieved exemplary performance in all areas. An example is award winner Eastman Chemical Singapore Pte Ltd which has exhibited Responsible Care in pollution prevention and employee health and safety. A multiple-year WSH awards winner as well, Eastman has consistently implemented health and wellness, family-friendly practices – highlighting to their employees that they are at the heart of their company. I urge Eastman and those amongst you who have done well to do more by sharing these best practices and urging business partners to be equally good, if not, better in their health and safety performance. You should take on the role of mentors and become leaders nationally in WSH excellence.

## **Conclusion**

17 In closing, I would like to extend my heartiest congratulations to all the winners of the 2011 Responsible Care Awards. This is a recognition of your commitment to improve the health, safety and environment in your workplace. I urge the chemical industry to take this opportunity to

share the best practices and be the industry leader in WSH excellence.

On that note, I wish you all the best and an enjoyable evening.