

## FEATURE

# Integrating responsible care into quality, environmental, health and safety management system: A strategy for Malaysian chemical industries

A strategy for integrated management system of Quality, Environment, Health and Safety-Responsible Care (QEHS-RC) is proposed to improve the adoption and implementation of Responsible Care program in the chemical industries. This integrated management system provides a basis for the adoption and implementation of Responsible Care program in the chemical industries, moving beyond to a more holistic management system as it connects with other voluntary standards of which are ISO9001, ISO14001 and OHSAS18001. Taking Malaysian chemical industries as a case study, a comprehensive analysis has been conducted on the standards as well as Responsible Care code of management practices, indicating majority of the requirements of those standards are complimenting each other and there is a need to integrate all the standards into one single integrated and holistic management system to ensure chemical industries abide to the Plan-Do-Check-Act principles and sustainable development.

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## INTRODUCTION

Chemical industry has become one of the strongest and the largest field in the industries world. The development of the chemical industries has triggered the economic growth of a country and created hundreds of thousands of job opportunities. Although chemical industries have produced lots of beneficial products to the mankind in order to

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sustain life, some of the chemical substances can cause serious pollution as well as hazardous to human.<sup>1</sup> Besides that, the production of some chemical substances are highly flammable and can cause catastrophic incident such as the Mexico City explosion<sup>2</sup> which killed many lives. Another chemical tragedy is the Bhopal disaster that has brought a negative attention to the community and also given bad reputation to the chemical industry.<sup>3</sup> As a lesson learned from the tragedy, the Canadian Chemical Producers Association (CCPA) have come to a solution which is Responsible Care Program in 1985. It is widely adopted and act as a tools to change the public's perception of the chemical industry from the negative perspectives as an environmental polluter.<sup>4</sup> Responsible Care has spread to the developed countries such as United State, Europe, Australia as well as developing countries such as South Africa and Asian.<sup>5,6</sup>

There are many issues that are constantly debated by the researchers on Responsible Care implementation and effectiveness as well as credibility in

achieving sustainable chemical industries management practice. This paper aims to integrate Responsible Care management practices into Quality, Environment, Health and Safety management system and propose a strategy for Quality, Environment, Health and Safety-Responsible Care (QEHS-RC) integrated management system. The first section of this paper provides an overview or background for each of the standards. The second section consists of the arguments behind the principles to be integrated into QEHS-RC integrated management system. The final section of this paper proposes a strategy for the adoption and implementation of QEHS-RC in Malaysian chemical industries.

## LITERATURE REVIEW

### Responsible Care Program in Malaysian Chemical Industries

Chemical industries play an important role in contributing to a country's GDP. Manufacturing sectors especially chemical industries are of the largest contributors to Malaysia's economy. Chemical industries in Malaysia can be classified into petrochemicals, oleochemicals, fertilizers, biodiesel, pesticides, industrial gases, coating resins, and paints.<sup>7</sup> Chemicals bring a lot of benefits and conveniences to human being. However, these chemicals can contribute to environmental, health and safety issues if they are not well managed. Therefore, in 1994, Chemical Industries Council of Malaysia (CICM) officially launched Responsible Care program in Malaysia. Through the Responsible Care program, CICM has developed and published ten guiding principles and six codes of management practices that Responsible Care signatory companies are required to comply. The implementation of Responsible Care in Malaysia is still using self-evaluation and peer verification mechanism. After two decades of the adoption and implementation, the participation among the chemical companies is still low with only 132 companies compared to total 535 chemical companies registered with the Federation of Malaysian Manufacturers (FMM).<sup>8</sup> The challenges of Responsible Care adoption and implementation are

its credibility and strength that make the chemical companies less interest in adopting this program compared to other voluntary standards namely ISO9001, ISO14001 and OHSAS18001 where most of the chemical companies comply with those standards. In order to regain the credibility of Responsible Care program, there is a need to develop a holistic strategy to improve the adoption and implementation of Responsible Care program as well as encourage more participation in this program.

### Quality, Environmental, Health and Safety (QEHS) Management System

Quality, Environmental, Health and Safety (QEHS) management system, namely ISO9001, ISO14001 and OHSAS18001, are used to ensure systematic operation of the organization. QEHS management system uses the methodology of Plan-Do-Check-Act (PDCA) cycle in their processes.<sup>9</sup> ISO9001 is a set of standard that helps companies to develop quality management and assurance in documenting, enhancing customer satisfaction as well as achieving continual improvement of its performance.<sup>10</sup> ISO14001 formally known as an international environmental management standard which concerns to achieve and demonstrate sound environmental performance by controlling the impact of their activities, products or services on the environment.<sup>11</sup> This standard acts as a tool for an organization to implement environmental policy that are taking into account of sustainable development. OHSAS18001 is an internationally applied British standards that introduced in 1999 which aims to maintain a safe working environment as well as good health of the employees.<sup>12</sup> The aforementioned management systems are applicable to any type and size of organizations with diverse geographical, cultural and social conditions whereby it can also be integrated with other management systems which can suit with the context of the company.<sup>13</sup>

## METHODS

The strategy in this paper was developed using grounded theory approach

whereby it is a methodology to develop a theory that is grounded on systematically gathered and analysed data.<sup>14</sup> It offers an explanation and usually used in studying people's experience with some kind of process and then creating a theory or explanation to fill the gap between theory and empirical research.<sup>15</sup> In this study, all the six Responsible Care codes of management practices were compared to the ISO's concepts – Deming's principle "PLAN-DO-CHECK-ACT" in a process model.<sup>9</sup> Each code of management practice is explained with implementation guidelines provided by the CICM.<sup>16</sup> To integrate Responsible Care into ISO management system, the implementation guidelines for each code was sorted and coded into processes based on Deming's principles starting from policy and leadership, planning, implementation, monitoring and management review. A strategy was developed by integrating all the aspects of Responsible Care based on the Deming's principles, to explain the linkages of Responsible Care with other management systems.

## INTEGRATED MANAGEMENT SYSTEM

In recent years, sustainable development has become an important issue for industries around the globe. There are many management systems and standards used to help industries to create sustainable competitive advantages. For instance, ACC (American Chemical Council) has developed and revised the new approach by integrating Responsible Care into ISO14001 management system. Responsible Care has been revised and incorporated according to Deming's principles (PLAN-DO-CHECK-ACT).<sup>17</sup> In 2002, there are four major areas have been revised in Responsible Care, i.e. codes of management practices, third-party verification, performance data and security requirements.<sup>17</sup> The chemical firms are no longer implementing the original six codes of management practices whereby they are required to implement the new Responsible Care Management System (RCMS) into their

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