

“Evaluation of Best HSE code of practices and systems in Methanol Manufacturing Company, Oman”

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Abstract

Methanol Manufacturing plants are available all around the world and as it is flammable in nature and manufactured from Natural gas it is having inherent risk within its characteristics of chemical property and operational safety risk all around the plant. Methanol process do have endothermic and exothermic reaction for different production stages. Methanol production is having process parameters of high temperature and high pressure. All investors and stake holders are having a high concern on the HSE Management effectiveness and continual improvement of HSE code of practices and systems.

Key word: Evaluation, HSE management, Methanol, Oman

1. INTRODUCTION

All organizations have their own Evaluation practices some of them are in line with international Management Systems like ISO some of them would be in line with National or regional regulatory standards, some of them would be following best industrial practices and company own practices. In this paper the evaluation of Salalah Methanol Company Best Practices are evaluated in line with it's on HSE Management System Manual and their co references like The ISO 14001, OHSAS 18002:2000 and OGP UK, HSE Management System models. This includes basic guidance for SMC organizational structure, planning activities,

responsibilities, practices, procedures, processes, systems and resources used to develop and implement its HSE Management system.

Salalah Methanol Company is producing 3000 MTD Methanol from Natural Gas by Johnson Matthey Catalyst technology since 2010 the company is subsidiary of Oman Oil Company.

2. SCOPE

This paper has covered major Best HSE Code of Practices and Systems established in Salalah Methanol Company, Oman which will focus on major part as following.

- Occupational Safety Management
- Occupational Health, Hygiene and Welfare
- Fire and Emergency Management
- Environment Management
- Security Management

3. OBJECTIVE

The Salalah Methanol Company has maintained procedures for evaluation of HSE Management and best practices, as a normal part of business control, in order to determine:

- Whether or not HSE best practices and systems conform to planned arrangements, and are implemented effectively.

- The effective functioning of the HSEMS in fulfilling the company's HSE policy, objectives and performance criteria.
- Compliance with relevant legislative requirements.
- Identification of areas for improvement, leading to progressively better HSE management.

Specific activities and areas also evaluated to cover the best HSE practices and systems its integration into line activities, and should specifically address the following elements:

- The possible need for changes to the policy and objectives, in the light of changing circumstances and the commitment to strive for continual improvement.
- Resource allocation for HSEMS implementation and maintenance.
- Sites and /or situations on the basis of evaluated hazards and risks, and emergency planning.
- The evaluation process being documented, and its results recorded, to facilitate implementation of consequent changes.
- Evaluation uses to reinforce continuous efforts to improve HSE performance.
- Conformity or nonconformity of the HSE best practices with specified requirements;
- Effectiveness of the implemented HSE systems in enabling objectives and performance criteria to be met;

4. Methodology:

Methodology was selected to have insight on each HSE code of practice and System effectiveness by personal presence and active involvement in HSE activities.

Examination the effects of the SMC best HSE code of practices and system as part of safety culture.

Review in detail following documents in different HSE aspects.

- Participation in all HSE activities at SMC.

- Interview of the employees and others on HSE aspect.
- Review ISO 14001, OHSAS 18002:2000 and OGP UK standards for understanding the requirements of a monitoring and measurement programme.
- Review of local regulations and Salalah Methanol best practices, Systems on HSE Management.
- Personal involvement on each element of HSE Management including best Practices and system.

5. RECOMMENDATIONS

This section will provide key recommendations based on "Evaluation of Best HSE code of practices and systems in Salalah Methanol Company, Oman" are made as effective means of improving HSE Management Practices in SMC which has took place since the company conceptual stage to till date operation and other phases for specifically HSE aspect.

➤ Management Leadership for HSE aspect

HSE performance needs to be measured on organizational values, culture, attitudes and behavior rather than end results like incident rates, LTI free man days and regulatory compliances. One of the best ways to developing a healthy and safe workplace is to create the right corporate culture that is formed by using values.

By focusing on what is important to the organization for instance, protecting people, organizations need to work out the values from these beliefs of what's important. Then, it starts to become clear on what the organization needs to do to keep people safe and in what order. Therefore it is recommended that managers should begin to lead by values this will go along away in empowering workers to do the right thing. There is a need to develop a leadership approach to meet the needs of present day challenges particularly with the impact of globalization and change. It is equally important for

SMC to join the wave of globalization and to be a significant participant in HSE prospective.

➤ **Corporate social responsibility**

Clearly there is growing recognition that industry must operate within the scope of social, cultural, economic and physical factors at the national and local levels. With continuous attention on the impact of global warming and greenhouse gases industry should recognize that future success and utilization of Methanol product. CSR needs to develop the environment of cooperation rather than solving only conflicts with stakeholders because conflict is a HSE hazard.

➤ **Environment**

There is a need for a paradigm shift by SMC on Environment aspect, given that SMCs have no control over the external factors which affect sites operations and other stakeholders. SMC to improved corporate reputation, reduced impact of operations on the environment and organisation effectiveness. This evaluation has shown that the environment is considered as a priority by SMC and same message does not converted to the community and perception are far away from fact what is being maintained by SMC. In addition SMC can go beyond the Environment compliance level and some environmental improvement initiative can be lead. As a local site concern below mentioned two needs to be resolve.

➤ **Technology**

It is recommended that effective technology which will measure programs and / or process effectiveness should be integrated into the HSE management process. One of the most effective ways to adequately assess and evaluate HSE indicators, and monitor for trends, and break this information down into measurable activities, is to incorporate software and programs which will assist managers to effectively monitor updates for HSE aspects.

➤ **Best HSE practice**

The evaluation suggests improved practice can be realized if an all-inclusive risk assessment process is incorporated at the planning stage in the HSE management system. This is critical for eliminating hazards, reducing risk, or where applicable, lessening the severity of any potential threat or injury. There is a need for continued risk management education and to be practiced for each activity. This will provide important support in ensuring that technical and non-technical risk assessment competence in order to manage larger general challenges to stakeholders form HSE prospective.

Today's businesses are not just assessed on their economic performance, but also on their ability to manage many different types of risks. A strong track record in managing these risks is frequently cited as an indicator of a well-run company.

➤ **Contractors HSE Management**

SMC management and line managers has realize that the contractor's HSE management is important factor which affects SMC HSE score card and could lead to wrong message to society. These practices needed to be controlled and monitored closely by SMC responsible to achieve highest level of HSE compliance and successful management of HSE is a total ownership and active participation at all levels from SMC.

SMC should hold contractors and service providers to the same standard as the SMC organisation at first step at tendering process. A better structure for accountability, and project monitoring should be implemented relative to Plant management process. In addition, to address HSE challenges at SMC there should be an interface between the stakeholders in the contract management process.

➤ **HSE competence**

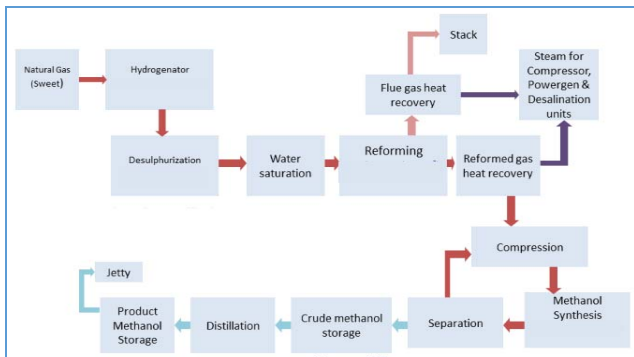
Is very important recommendation based on the evaluation the best industrial practices are needed to be practice according to established procedure and for that the important link is training refresher training and training on demand by end users.

➤ **Regulatory framework**

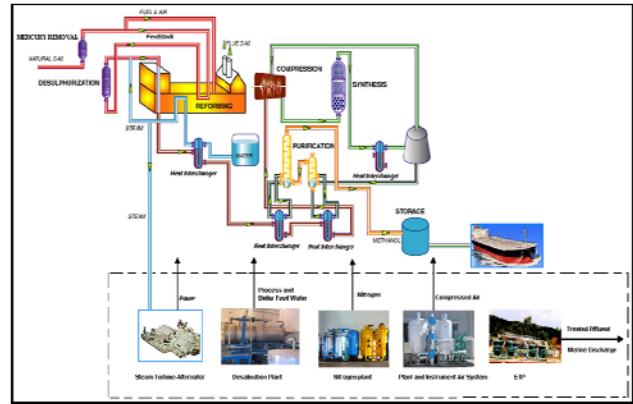
Evolution has pointed out that Oman has legal framework for HSE but it is not having specific department and division with competent staff to guide industries and perform the role of mentor rather than regulatory Inspector. The rate of development of complex and modernize industrialization requires the government of Oman to establish a national HSE platform which shall support, guide, monitor and control all HSE aspect across the country uniformly, which will serve as a pathway for the establishment of industry specific HSE standards and regulations.

6. Figures

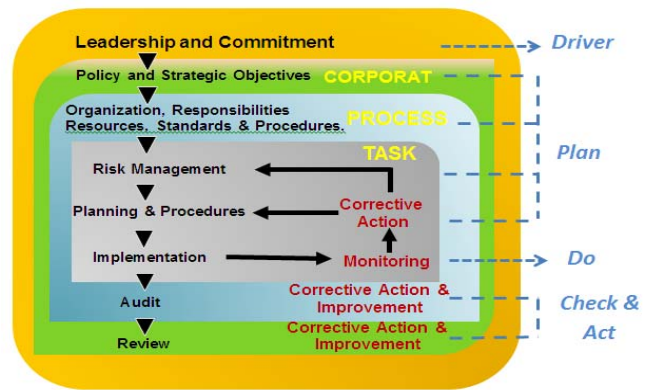
6.1 Methanol Production Block Diagram



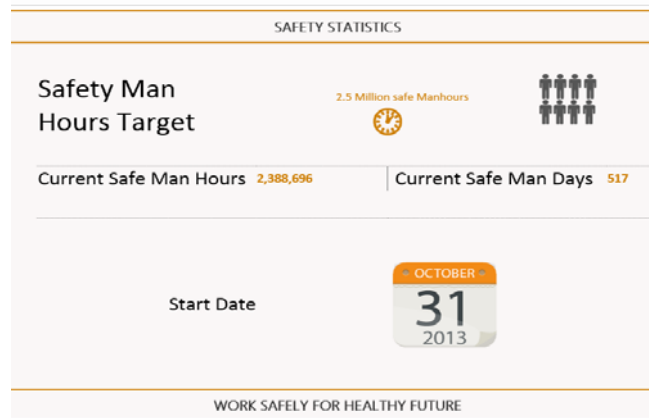
6.2 Methanol Production Flow Diagram



6.3 HSE Management Structure



6.4 Safety Statistics



7. Conclusions

This section has presented the conclusions for this project work on “Evaluation of Best HSE code of practices and systems in Salalah Methanol Company, Oman”. Management appreciates the importance of instilling a positive HSE culture at all level including stakeholders. In particular through communication of organization values, encouraging employees to develop positive HSE attitudes, increasing the appreciation of HSE outcomes relative to their actions, and employee engagement in the HSE management process. It can be concluded that SMC subscribe to be HSE value based organization.

It indicates that management recognizes the implication of HSE management, HSE management is recognized as significant at all levels of management, management has a good understanding of the HSE principles and visibly supportive to HSE management at all levels, recognize the benefits that are possible from implementing sound HSE management practices, and executives demonstrate a willingness to change the way of doing business in order to grow, expand and mature in HSE.

HSE influences on existing management practices

Evaluation indicates that HSE management System implemented at SMC is established based on the best processes and practices. Top Management and line Managers shares accountability however, the enforcement is perceived as marginally at low side where production / Finance mater comes in consideration. Over all very genuine efforts have been introduced by top management in critical decision making process to balance specially HSE aspect.

HSE influence on corporate social responsibility

Evaluation indicates the impact of social responsibility issues in integration with HSE aspect are very high relative to previous operating years. The fact is realised by stakeholders during last few years that SMC is the company which really does care about HSE aspect and their stakeholders with its own business demand fulfilment.

References

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- Occupational Health and Industrial Safety Precautions issued by Ministerial Decision No.19/1982.
- BS8800: 1996 Guide to Occupational health and safety management systems.
- SMC Health, Safety and Environment Management System Revision-02 / 2015.
- Omani Regulations on Environment and Climatic Affairs by Ministry of Environment, Oman.
 - SMC documentation (P & ID, PFD, HAZOP, Project Reports, Website, Intranet (Tawsul) documents).
- International Association of Oil & Gas Producers HSE guidelines, United Kingdom.
- International Labour organization Guides (ILO), Switzerland, Geneva.
- World Health Organization (WHO), Switzerland, Geneva.
- ISO 14001- Environmental Management 2004.
 - Occupational Safety & Health Administration (OSHA 29 CFR 1910) by US Department of Labour.
- Health and Safety Executive (HSE) under Health and Safety at Work Act, United Kingdom.
- A structured approach to Enterprise Risk Management (ERM) and the requirements of ISO 31000.
 - Methanol Safe Handling Manual by Methanol Institute.
 - Center for Chemical Process Safety (CCPS) - AIChE, USA.
 - American petroleum institute (API) Recommended Practices on HSE aspect, United States of America.