

CASE STUDY – HSE CULTURAL UPLIFT AT SUI PURIFICATION PLANT

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1.0 COMPANY PROFILE:

Pakistan Petroleum Limited (PPL) has been a key player in the energy sector since 1950s sustaining its position greatly due to its robust business programs and concerted efforts to optimize hydrocarbon production from existing fields and new discoveries. The Company operates six producing fields across the country at Sui, Adhi, Kandkhot, Chachar, Mazarani and Hala. It also holds working interest in nine partner-operated producing fields across the country.

Over the years, PPL has developed a reliable foundation and infrastructure for providing clean, safe energy through sustainable exploitation of indigenous natural resources while adhering to the highest standards of health and safety and reducing ecological footprint of its operations. In terms of International HSE Certifications, PPL Fields / Depts. have successfully achieved & sustained ISO 14001 (EMS) and OHSAS 18001 (OH & S) certifications through external certification agency.

In recognition of its extensive efforts to promote workplace safety, environmental conservation and sustainable development, National Forum for Environment and Health awarded Environmental Excellence Award to PPL in 2006, 2008, 2009 & 2010 and Employers' Federation of Pakistan awarded PPL for "Best Practices in Occupational Safety & Health" in years 2007 and 2010.

2.0 INTRODUCTION

Sui Purification Plant (SPP), located near Dera Bugti in Baluchistan Province, is one of the largest gas processing plants in Asia. It was installed and commissioned in 1955 to remove unwanted contents of raw gas. Initially, the Plant was capable of processing 70 MMSCFD of gas. With increase in gas demand, more wells were drilled in Sui and gradually this capacity was increased up to 1,000 MMSCFD by installing additional processing units. It comprises of more than 500 pieces of rotary / reciprocating equipment, besides a large number of stationary equipment. Total strength of officers and workers is more than 350.

3.0 ACQUISITION OF SUI PURIFICATION PLANT

SPP was owned by a Public Limited Company. In July 2002, Pakistan Petroleum Limited (PPL) acquired the Sui Purification Plant. Except for a few officers who opted to remain with the previous employers, most of the officers and all the workers joined PPL.

3.1 Status of HSE Implementation

The main business of previous owners was distribution and supply of natural gas. Operation of Plant was different from their core business. Knowledge and expertise to operate and maintain the Plant was limited to a relatively small segment of the staff. In this whole setup, Health, Safety and Environment aspect was not given due importance. For various reasons, it was missing from the list of priorities and as such there was no formal or informal HSE training of the staff. As a result there was a general lack of awareness regarding HSE and with the passage of time the attitude towards HSE became very casual. Even basic protective gear like safety shoes and helmet were considered unnecessary and were not available. Operation and maintenance was carried out while wearing loose clothing. Use of local style of turban and cap was common and use of safety helmets was totally missing. Many of the drains were without covers and the coupling guards were removed / missing because they were considered obstruction in maintenance work. There had been a number of safety incidents, some of which were very serious in nature. However, there was no proper documented record of these incidents, lessons learned and concrete remedial action plans.

3.2 Mindset at the Time of Acquisition

- The entire staff joined PPL with the same mindset that safety cannot be practiced generally in Pakistan and especially at the Plant. The common sentiment was that the Plant had been operational for 50 years, so why practice safety now.
- Safety measures were looked upon as a form of luxury, which in their view, could only be afforded by people in the western countries.
- Safety measures were perceived as hindrance to progress of work.
- Steam, oil and chemical leakages were considered as unavoidable at the Plant.
- All incidents / injuries were considered “Will of God”.
- Safety cages and handrails were considered luxury and were scarce.
- Systematic and organized working was considered impediment to work.

3.3 Other Challenges

In addition to the above mentioned adverse circumstances, there were other challenges too. The long absence of any HSE practices had become their habit and the workers offered strong resistance to adopt any new approach.

There is always resistance to any change but in case of SPP the situation was more serious. Most of the workforce was illiterate and their strong tribal culture made it more

difficult for them to accept any change. Moreover, any attempt for a change was suspected as having malafide intentions. Efforts to implement HSE practices were perceived by a number of workers as a plot against them by the PPL management to humiliate them since wearing the safety hat meant removing their traditional Turban or Cap which was their pride.

4.0 STRATEGY ADOPTED

The whole situation was assessed in totality. Various factors were considered that could affect the outcome of the whole initiative to implement standard HSE practices at the Plant. With prevailing overall situation it was obvious that HSE implementation could not be successfully achieved with executive orders only. Lesson from previous experiences also pointed towards the same. Changing the mindset was very important for reducing the strong opposition and achieving the desired results.

Changing the mindset of a predominantly illiterate workforce with a backward, tribal background was a big challenge. The only key to success was to understand their Social Conditioning and plan the whole set of activities accordingly.

Important aspects of Social Conditioning are:

- Tribal hierarchy and its dynamics
- Traditions and taboos
- Reward and punishment
- Emotions – Pride, Fears, Greed
- Tribal Psyche

A variety of steps were necessary to uplift the HSE Culture at the Plant. However, their modality had to be aligned with the change in attitude and the above aspects remained in focus. A phased approach to implementation was planned and progressive steps were taken keeping in view the improvement in acceptance level by the staff. Thus pace of implementation was adjusted during the whole exercise.

5.0 ACTIONS TAKEN

Some of the main measures adopted for implementation of above strategy are summarized below.

5.1 Personal Example

PPL officers at the Plant took on the responsibility to lead by example. They showed complete compliance to PPE and all other safety measures in line with Company's Safety Policy. The main idea behind this was to show old officers and workers of SPP that PPL was committed to its Safety Policy. At the same time, keeping in view the tribal sensitivity for removing traditional cap for the safety helmet, Chief Engineer started wearing Balochi cap regularly to demonstrate personal respect for their traditions. Old officers of SPP who were not used to PPL's HSE practices were then taken in the loop for HSE compliance including use of PPEs.

5.2 Capitalizing upon Safety Incidents

In typical Baloch psyche, orders are not obeyed unless forced upon. It was not feasible to apply aggressive approach constantly for implementation of HSE practices. For permanent change, a friendly dissemination process was adopted. Every small incident or a near miss that took place was capitalized upon by discussing it informally in many small groups of workers. The discussions were carefully handled around the following main points to remove the wrong perceptions and convey the desired message:

- The physical, financial and social effects of injury or potential injury to a worker. The greatest impact for them was generally in terms of reduced overtime and workers could immediately relate to it.
- Different steps taken by the Management in making the Plant a safe working place. The fact that the Company was spending money for their safety reflected sincerity of the Management towards workers' well being.
- Use of PPEs and safe working practices are for their own protection from injury.
- Health and safety of employees is very important for the Company but it is more important for the employees themselves and their immediate family.

These sessions were important in making initial dent in their thinking and they slowly started to understand the necessity of PPEs and good HSE practices. Moreover, by discussing the causes of incidents and possible preventive measures, they were used to increase HSE awareness and education.

5.3 Training

Formal and informal training and awareness sessions were arranged for officers and the work force. For officers the priority was given to capacity building on fast track. In the beginning, main focus of workers training was on changing their negative perception about safety and to create basic awareness. Realizing the importance of respect and pride in tribal culture, formal training sessions for workers were arranged in the best possible

environment and were attended by the senior officers. Initially workers took these training sessions as a means of escape from the work. For them, it was time on work with no work! Sitting in an air-conditioned room, with refreshments and a chance to socialize with other colleagues was not a bad option. But, during these sessions, progress was made, slowly but surely, by showing lot of videos and photos involving industrial accidents and how they could be avoided by using simple, logical safe methods. Subsequently more specific safety aspects were gradually introduced.

5.4 Permit to Work System

A permit to work, PTW, system was implemented to streamline the activities taking place within the workplace. As a result, whenever an activity was to take place, appropriate approvals were required. This in turn ensured that necessary safety measures were taken to carry out that particular activity.

5.5 Job Hazard Analysis & Emergency Response Procedure

Officers of all departments were involved in the exercise to prepare Job Hazard Analysis (JHA) and Scenario Based Emergency Response Procedure documents for their respective areas of responsibility. Preparing these documents and discussing them with workers before conducting any work had a great impact on overall HSE awareness. In this meeting, all possible hazards and risks pertaining to the job being carried out were discussed.

5.6 Fire Drills

In order to be prepared for any eventuality, Fire Fighting and Emergency Response Teams were formed and given necessary fire fighting and first aid trainings. Emergency response and fire drills were conducted regularly, covering various scenarios. Observers were deputed to record time and actions. This was followed by discussions on the areas requiring improvement and formal reports were circulated.

5.7 Administrative Control

For effective implementation of HSE policies administrative controls were put in place gradually. Again, careful consideration was given to the level of understanding achieved by the workers. Keeping in view the Social Conditioning of workers, it was important to move in stages and consolidate the position before taking the next step. Initially a circular was issued impressing upon everyone that compliance to HSE Policy and use of PPEs was essential according to Rules of Service. After sometime another circular was issued with relatively strong language, urging employees to comply with HSE requirements and announcing that disciplinary action could be taken in case of non compliance. A system of Safety Advice was introduced to point out HSE non compliance. These circulars, along with other measures to implement HSE practices showed very good results. Finally a circular was issued informing that disciplinary action shall be taken against defaulters. The end result was almost 100% PPE compliance at the Plant.

5.8 HSE Week

When the basic level of awareness, understanding and acceptability was achieved, there was a need to give a boost to the process of learning and HSE compliance. In order to have a quantum change, it was decided to observe HSE Week at the Plant. Speeches, presentations, screening of videos, discussions and training sessions were arranged. HSE performance was analyzed; areas where good results were achieved were praised and areas requiring improvement were highlighted. Workers and officers were given a chance to share their experiences and the lessons learned. This week long affair served to refresh the importance of HSE and the Company's commitment to adhere to its HSE Policy.

Encouraged by the sharp improvement in HSE compliance and understanding, the event was made an annual affair and was expanded to include quiz competitions etc.

Considering the success and benefits of this event, HSE Week was observed in the entire Sui Gas Field and is now observed in other fields as well.

5.9 Safety Audits and Studies

HSE audits are a definite method of plugging the few gaps at any work place. Keeping in view the fact that a lot had to be done at the Plant, these were conducted in a modified way. Initially the areas needing immediate attention were covered through departmental audits. Gradually all aspects were included. Action plans were prepared and executed for the shortcomings identified in the audit. These resulted in improving HSE knowledge of the staff as well as achieving desired results at a pace that was practically possible.

The next step of third party audits and studies was carried out to further improve upon the system. This was done first through a national consultant and later through a renowned international company. Action plans were prepared and implemented.

6.0 ACHIEVEMENTS

6.1 Uplift in HSE Culture

The combined result of all the above efforts has been a complete turnaround in HSE practices at Sui Purification Plant. The understanding, commitment and compliance have reached a level comparable to any good organization. All the staff including workers are supportive of HSE initiatives. Many of the local workers have now the confidence to stand in front of a big audience and make a speech covering different HSE aspects and discuss related issues. The foreign consultant who carried out HSE Study for the whole of PPL specifically praised the attitude, level of awareness and PPE compliance at the Plant.

6.2 Two Million Hours without Lost Time Injury (LTI)

A major milestone was achieved at the Plant when a record two million hours were completed without LTI in 2008. This reflects a consistency in commitment and implementation of HSE practices by each and every individual at the Plant.

6.3 OHSAS 18001 Certification

In line with the Company policy to achieve highest safety standards, work was started on implementation of Occupational Health and Safety Management System OHSAS 18001 at the Plant. After completing all the requirements, a renowned international certification agency was invited to conduct the audit and certification was granted after detailed assessment of entire Plant.

7.0 CONCLUSION

Dedicated efforts, taking into consideration social conditioning of the people can bring quantum improvements in Occupational Health, Safety & Environment even in the workforce with old fashioned mindset.