Chapter 9: Conclusion:

The research work on “Quantification and Evaluation of Environment, Health and Safety (EHS) culture and development of improvement plan for industries leads to the following major conclusions:

- Based on the study carried out on EHS, BBS and Industrial Hygiene evaluation for shop floor employees including contractors, the EHS culture can be quantified from lower level to higher level on a ladder of 5 steps namely; Pathological, Reactive, Calculative, Proactive and Generative. In the present study, substantial improvement was achieved in converting the lower level culture to higher level culture after quantification.
- By evaluating the EHS culture using of EHS and BBS Software, poor EHS culture employees can be identified and which in turn may help us to draw the road map for them in improving the safety culture through Safety Training Programs and also imparting on-line job training at work. In present study this approach shows significant improvement in achieving the proactive and generative culture which meets the world class standards.
- Heat, Noise, Dust, Illumination/Glare and Toxic gases of the work environment can be quantified and can be controlled using engineering control systems to comply with international standards. In the present study this has been achieved successfully.
- The research concludes that the methodology used for evaluating and improving the EHS Culture is strongly recommended for other Industrial Sectors too to achieve world class level EHS culture.
- The methodology used for identifying the cultural values helps in understanding the present organization culture level and also helps in measuring the weakness regarding EHS and BBS Culture. Further, it helps in identifying the Hygiene Index Level.
- A software for quantitative evaluation of existing EHS-Culture in an Industry and a Hygiene Index Software conforming to ILO-Model is developed and the model is successfully validated using the surveyed data.
Photographs taken during works
Environment Study
&
EHS Project Work
Photographs:

- Air Sampling – personal
- Heat Stress
- Noise level

Photo 1

Personal Sampler—Heat Stress, Noise Hand held dB meter, Sampler for dust & pollutants.
Protection from Dust and Heat stress Measurement.

Respirable Dust

Measuring the Heat Stress

Photo-2

Locations:

Coke Oven-1, Coke dust

SMS-1, Hot Metal De-Sulphur

Truck Unloading Station

Coke Oven -3 Battery-C, Top level

Coke Cutter House

RMHS-1, Coal Screening Plant

Photo-3
Corex Process - Schematic

Corex- Cooling Gas Compressor (CGC)
Modified Perforated Vessel Silencer

Three Stage Silencer
Battery operator cleaning the hot coke in a car at Coke Oven.

Photo-9

Photo-10
EHS Safety Culture: Refractory Breaker

1. Breaker was not using PPEs
2. Breaker was standing in awkward position

Before

After

1. Usage of PPEs
2. Posture changed

Photo--1 2
- Operator has fastened the chin strap
- Operator with safety goggles
- Operator with Ear Plug
- Operator using hand gloves
- Operator Chair height was increased to reduce strain developed because of repetitive bending
- Lighting inside the operator increased to reduce eye strain.

Photo-13

After