Industrial Safety Improvement Audit as per IS 14489 – Code of Occupational Safety and Health

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OBJECTIVES OF AN INDUSTRIAL SAFETY IMPROVEMENT AUDIT

The overall objectives of the safety audit were as under:-

1. to carry out a systematic critical appraisal of all potential hazards involving personal, plant, services and operation methods.
2. to examine critically the working conditions of the plants which are hazardous in nature and may lead to accidents.
3. to evaluate work practices and procedures followed in the plant and their effectiveness.
4. to evaluate the effectiveness of the existing safety and health management system and suggest recommendations for implementation by the management.

SCOPE OF INDUSTRIAL SAFETY AUDIT

The scope of the safety audit is limited to the safety and health of workers employed in the manufacturing processes and operations and also the safety of the plant and equipment used in the factory.

The Audit is carried out as per the requirement under IS 14489 and the various Legislative requirements such as the Factories Act, 1948 and the state Factories Rules, Environment (Protection) Act, 1986 and Rules made there under and other applicable Statutes.

"Management Systems" audit is done to assess the management's involvement and commitment towards promoting safety and health systems at work. Management system audit provides scope of examining and evaluation of safety policies and procedures and their review, hazard communication system, dissemination of information and hazard awareness programme, training and motivation of employees, etc.

Besides management systems audit, technical aspects of plant activities namely, storage and handling of hazardous substances, Emergency Preparedness, process and operational safety review, transportation safety, testing and examination of plant and equipment, housekeeping, waste disposal system, fire prevention and control, etc. would also be audited.

The following elements of management systems and technical aspects would be audited as per IS 14489:1998

1. Health and Safety Policy

2. Safety Organisation and Functions
3. Safety Documentation
4. Safety Committee
5. Safety Budget
6. Accident Reporting, Investigation and Analysis
7. Safety Inspection
8. Safety Education and Training
9. Safety Communication/ Motivation/ Promotion
10. First Aid
11. Occupational Health Centre
12. House Keeping
13. Noise
14. Ventilation
15. Illumination
16. Hazard Identification and Control
17. Safe Operating Procedure
18. Work Permit system
19. Waste Disposal System
20. Personal Protective Equipment
21. Fire Protection
22. Emergency Preparedness
23. Plant Layout and Area Classification
24. Static Electricity
25. Pressure Vessels (Fired & Unfired)
26. New Equipment Review
27. Lifting Machines and Tackles
28. Tank Storage Vessel Area
29. Colour Coding for Pipelines
30. Maintenance System
31. Transportation of Hazards

STANDARDS TO BE FOLLOWED

The audit is conducted with the following standards and codes of practices on Safety and Occupational Health:

i) Indian Standard on Codes of Practices for Occupational Safety & Health Auditing (IS 14489:1998)

ii) Legislative Requirements (The Factories Act, 1948, the Explosive Act, 1884, the Boilers Act, 1923 and the Environment (Protection) Act, 1986 The SMPV rules, The Gas Cylinder Rules, the Electricity Act and Rule, the Mines Act and Rules etc.

iii) Current Safe Practices, Prevalent in the factories and mines and the company internal controls.

DOCUMENT VERIFICATION

The following documents/records would be examined during the Safety Audit

1. OS&H policy
2. Safety organization chart
3. Training records on Safety, Fire and First-aid
4. Minutes of safety committee meetings
5. Record of plant safety inspections
6. Housekeeping inspection records
7. Accident investigation reports
8. Accidents and dangerous occurrences – statistics and analysis
9. Record of tests and examinations of equipment and structures as per statutes
10. Safe operating procedures for various operations
11. Record of work permits
12. Record of monitoring of flammable and explosive substances at work place
13. Maintenance and testing records of fire detection and firefighting equipment
14. Medical records of employees
15. Records of industrial hygiene surveys (noise, ventilation and levels, illumination levels, airborne and toxic substances, explosive gases)
16. Material safety data sheets
17. On-site emergency plans and record of Mock Drills
18. Records of waste disposal
19. Records of effluent discharges to the environment

20. Approval of layouts and other approval from statutory authorities
21. Records of any modifications carried out in plant or process
22. Maintenance procedure records
23. Calibration of testing records
24. Shut down maintenance procedures
25. In service inspection manuals, records including that of material handling
26. Safety budget
27. Inspection books
28. Other statutory records
29. Records of previous audits
30. Safety in transportation of hazardous substances
31. Inventory of Hazardous Chemicals.

METHODOLOGY TO BE FOLLOWED

i) The following methodology would be adopted to identify the hazards to health and safety of the employees due to deviations from the applicable statutes, standards, operating procedures and the codes of practices by the audit team.

ii) The Audit Questionnaire would be sent to the organisation to provide the necessary replies on receipt of the Purchase Order and the tentative dates for the field visit. Additional Questionnaires would be developed depending on the type of industry

iii) The safety Audit would be carried out by a team of 2 to 3 experts, One each from Mechanical, Electrical and Chemical or Mining or Oil N Gas Background depending on the type industry, port, refinery, mining or construction site.

iv) A thorough survey of various applicable statutes, codes of practices, standards & other literature would be done prior to the field work in order to collect available safety and health related information applicable to the plants to be audited. Based on the information collected, separate additional checklists would be prepared for different areas. The inspections in the plants would be done with the help of these checklists.

v) An opening meeting would be held with the Management to explain the objective, scope and methodology that would be followed while carrying out the audit. This meeting would help in establishing mutual communication links between audit team & the plant executives and to confirm the resources & facilities needed by the audit team.

vi) The various plants and sections would be visited and inspected to assess the need for supplementing or modifying the details obtained through questionnaires and to ascertain the gaps to make suitable recommendations to overcome the same.

vii) Discussions would be held with the plant personnel, supervisors and management representatives and workers to derive the information regarding existing measures on safety and health and accident prevention practices in the plant.

viii) The Closing meeting to be held with the Management including the Safety Head and other unit Head to apprise them with the draft audit observations and recommendations based on the audit visit and examination of the various documents to ensure the technical feasibility in implementation.

ix) The safety Audit Report would be submit which shall have the following chapters

1) Foreword
2) Acknowledgment
3) Executive Summary
4) Content
5) Introduction
6) About the Industry
7) Process Description
8) Audit Questionnaire – Reply, Observations and Recommendations
9) Annexure

x) A sample Copy of the report is attached herewith.

OBSERVATIONS & **RECOMMENDATIONS**

A detailed Recommendations/Action Plan is prepared based on the 'Audit Findings'. The action plan contains an implementable schemes/ best practices / technologies/ innovative solutions for improving Electrical, Fire, Occupational & Health Safety, Emergency Preparedness and Response Plan measures to be followed by the Industry as per Short Term, Medium Term and Long Term Period.

CORRESPONDENCE DETAILS

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