



CAPABILITY STATEMENT OF CONSTRUCTION SAFETY STUDIES

CHOLAMANDALAM MS RISK SERVICES (AN ISO 9001: 2000 COMPANY)



Head Office:
2nd Floor, Dare House,
2 N.S.C. Bose Road, Parrys,
Chennai – 600 001
Tel: +91- 44- 3044 5400 | **Dir:** +91- 44- 3044 5623
Fax: +91- 44- 4216 6001
Email: inquiry@cholams.murugappa.com

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CONSTRUCTION HEALTH, SAFETY & ENVIRONMENT AUDIT

We all know, Construction industry makes significant contribution to nation economy and provides large number of employment. As per the latest statistics released by CIDC, about 31 million people are employed in construction sector in which close to 73% are un skilled labourers. Use of new technologies and deployment of project management strategies has made it possible for this industry to undertake mega projects inspite of facing number of challenges. Eventhough it is one of the fastest growing sectors in India, it records maximum number of accidents and injuries than any other industrial activity.

In addition to cost of human injury and death, the accidents are unduly expensive in terms of damage of property and delays in completion of project.

CholaMS Risk Services (an ISO: 9001:2000 Certified company) pioneered the concept of construction safety audits in India. With its risk based approach and applying proven audit techniques employed in other sectors, Chola MS audits helps organizations address the safety issues in a more systematic manner.

Objectives of Construction HSE Audit

- To carry out a systematic, critical appraisal of all construction hazards involving personnel, plant, services and operation method at worksite and
- To ensure that the present Construction Safety, Health and Environment Management System fully satisfy the legal requirements, company's written safety policies, objectives and applicable safety guidelines

Typical Scope of Audit

Construction HSE Audit of project site will be carried out in two parts

- a) Audit on HSE Management systems at project site
- b) Audit on Technical Elements

Audit HSE Management System evaluates

- HSE Policy, HSE Plan, HIRA, HSE Inspection, HSE Organization and committees, HSE Awareness and training, HSE Evaluation of Subcontractors, Work permit systems, HSE Performance measurement, Management of First aid, Incident reporting and incident analysis, Corrective action and Preventive action and Emergency response plan

Audit on technical elements covers

- Excavation, Blasting, Piling, Scaffolding, Work at height, Formwork and concreting, Material Handling, Grinding, Welding and gas cutting, Plant & Machinery, Electrical Safety, Fire Protection, House Keeping, Personnel Protective equipment, Occupational Health & Hygiene, Environment management

Categorization of Audit findings

Audit on HSE Management Systems

| Recommendation Category | Criterion |
|-------------------------|---|
| Category A | Recommendations that are required to be implemented immediately based on the minimum guidelines by management, applicable Indian statues. |
| Category B | Recommendations that are provided based on Good Engineering practices followed in similar industry/features that can be considered for further strengthen the HSE Management system |

Audit on Technical Elements

| Recommendation Priority | Criterion |
|-------------------------|---|
| High | Recommendations that require immediate implementation |
| Medium | Recommendations that may be implemented within next 2 Weeks |
| Low | Recommendations that may be implemented during the next available opportunity |

Recommendations High, Medium & Low based on the followings

| Severity | Likelihood | | |
|----------|------------|--------|--------|
| | Low | Medium | High |
| High | Medium | High | High |
| Medium | Low | Medium | High |
| Low | Low | Low | Medium |

Description of Severity level* for different consequences

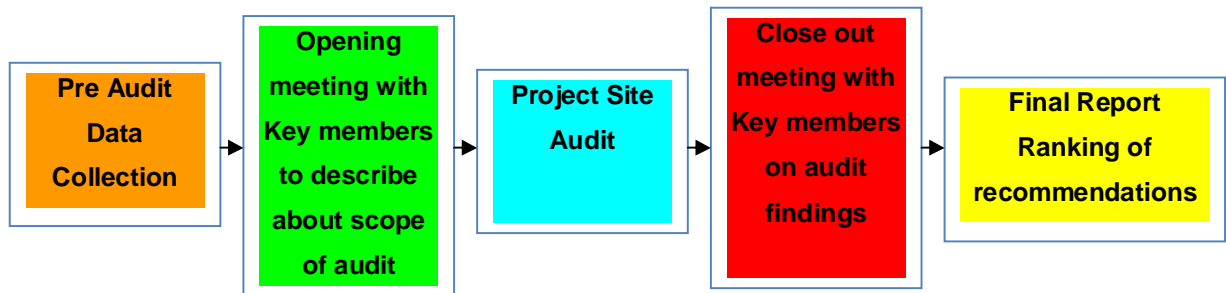
| Consequence | Low Severity | Medium Severity | High Severity |
|--------------------|---|---|--|
| Health & Injury | Lead to No injury, First aid cases only (E.g. minor cuts and bruises, irritation, temporary discomfort) | Can Lead to medical treatment (E.g. lacerations, burns, sprains, minor fractures, dermatitis) | Can Lead to Death, serious injury or life threatening occupational disease (E.g. Amputations, major fractures, Multiple injuries, occupational cancer, acute poisoning and fatal diseases. |
| Property Damage | Inexpensive and easily replaceable | Fairly expensive, and/or fairly difficult to replace | Expensive, or irreplaceable |
| Environmental Harm | Affects a few people temporarily at low level | Affects a few people seriously or many people at a relatively low level. | Affects many people, permanently or for a long time at a high level. |

Description of likelihood levels*

| Likelihood | Description |
|------------|--|
| Low | Not likely to occur |
| Medium | Possible known to occur in other industry |
| High | Common or repeated occurrence, all time can be expected to happen in construction industry |

* Symbol – Based on Auditors experience

How we approach an audit



Standards Adopted

- ✓ Applicable statues for Construction Industry in India
- ✓ Relevant Indian Standards (IS) applicable to construction Industry.
- ✓ The Building and Other Construction Workers Act 1996 & Central Rules 1998
- ✓ Good Engineering and safety Practices followed in similar construction sites

Structure of Report

The Report would be structured and will have following sections

- ✓ Executive Summary
- ✓ Introduction
- ✓ Audit on HSE Management Systems
- ✓ Audit on Technical Elements
- ✓ Location wise – Observations & Recommendations
- ✓ Annexure

Benefits of Construction HSE Audit

- ✓ Evaluate effectiveness in managing Safety, Health and environment risks at worksite, will motivate the clients to strive for improvements in managing potential Safety, Health and environment risks at work site.
- ✓ Auditing on each element of both Technical and HSE Management systems at worksite, the management of worksite can focuses its attention to elevate the weaker elements in order to improve overall worksite conditions

TECHNICAL SUPPORT SERVICES

CMSRSL can deploy full time safety professional on the jobsite for long term services for guiding/helping project team to reduce accidents and promote safety awareness throughout the site organization.

CMSRSL Professionals has a diverse and wide range of knowledge in construction, standards applicable to construction industry and best practices followed in project.

Typical Scope of Services

- ✓ Monitor the safety systems at project site followed by contractors as per requirements followed in construction industry.
- ✓ Carry out periodic inspections to identify potential hazards and suggest remedial measures
- ✓ Coordinate and active participate in site safety meetings to suggest practical risk management solutions
- ✓ Conduct trainings on specific HSE topics to team or group led by project management if required.
- ✓ Submit HSE Performance Status to client.

Benefits

- ✓ Improve productivity by taking care of potential problems before they arise.
- ✓ Improve regulatory safety compliance
- ✓ Facilitating in preventing of workplace accidents and help the organization to become more competitive in future.

Role of CMSRSL

CMSRSL Expert will carry out the role of facilitator. The main task of facilitator will guide the management/team to take proactive measures and to ensure that every step is recorded to achieve their HSE objective.

DEPUTING SCAFFOLD EXPERTS AT PROJECT

Contractors wishing to use scaffolding for their own purposes, to facilitate their activities etc., must adhere to all regulations and specifications whenever the work is performed at site to safeguard their own and stakeholders interest. CMSRSL can offer a full time scaffolding expert for the period of construction. CMSRSL Scaffold experts have a diverse and wide range of knowledge in scaffolding, standards applicable to scaffolding in construction industry and best practices followed in project.

The Scaffolding expert would carry out the following

- ✓ Provide support and guidelines to prepare scaffoldings at site as per national and international standards,
- ✓ Coordinate, carryout stage inspection and certify new scaffoldings
- ✓ Carryout periodic checks/inspections of scaffoldings
- ✓ Render training on scaffoldings to engineers and their workmen
- ✓ Submit reports to client.

Standards Adopted

- ✓ Handbook on Construction Safety Practices (SP 70 from BIS)
- ✓ The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1996
- ✓ BS : 5973 Code of Practice for Access and working scaffolds and special scaffold structures in steel
- ✓ IS : 2750 Specification for Steel Scaffoldings
- ✓ OSHA Scaffold standard
- ✓ Good Engineering Practices
- ✓ Saudi ARAMCO Scaffolders guide

Benefits

- ✓ Reinforces safety and scaffolding good practices on site.
- ✓ Reducing downtime productivity

PREPARATION CONSTRUCTION SAFETY MANUAL

Good HSE Manual is an integral part of good project management .CMSRSL is capable of developing tailored made comprehensive construction HSE manual incorporating internationally established practices and systems as well as guidelines appropriate to the Indian context.

Construction HSE manual are written by team of construction safety specialists. The construction safety manual provides in depth information and advice on key elements critical to any safety operations such as safety management principles, safety administration programs, general & civil activities safe work practices, mechanical equipments and material safe work practices, electrical safety at project site , model checklist, risk assessment sheets and many others.

Valuable Inputs from

- ✓ Internationally recognized standards / Code of Practices
- ✓ All Applicable Indian statutory and standards relevant to construction industry
- ✓ Product brochures from several companies
- ✓ Other safety manuals recognized globally
- ✓ Experts advice

Benefits

- ✓ Easy to read, Easy to use manual, gives practical guidelines on how to develop an effective safety management system
- ✓ Reflects latest HSE work practices
- ✓ Complying with national & international standards

CONSTRUCTION SAFETY TRAINING

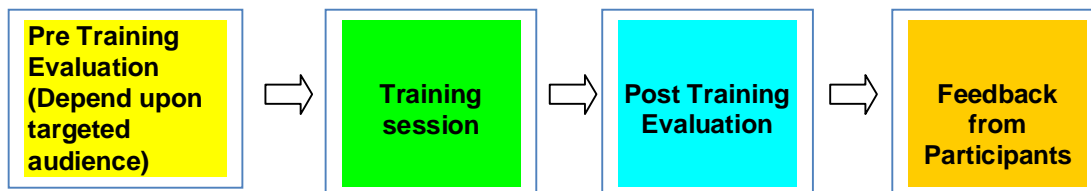
CMSRSL can delivers safety training for construction industry.CMSRSL are a team of technical experts having hand on experience in managing variety of risks. Their consulting experience and knowledge about statues, regulations, standards etc., provide in depth technical knowledge to the participants. The list of topics for training programme is

- ✓ Accidents in construction industry
- ✓ Statutory in Indian Regulations in Indian construction industry
- ✓ Construction Safety Management
- ✓ Safety in excavations and trenching

- ✓ Safety in work at height
- ✓ Electrical risks in construction
- ✓ Safety in material handling
- ✓ Accident case studies at construction site

CMSRSL can device training program based on client requirement.

Methodology



Strength of training program

- ✓ Interactive sessions rather than class room approach
- ✓ Discussion of practical problems
- ✓ Films on relevant topics
- ✓ Discussion on case studies

THE CLIENTELE (PARTIAL LIST)

| S. No. | Client | Projects |
|--------|---|--|
| 01 | Areva T & D limited | Construction Safety Trainings |
| 02 | Denso Kirloskar India Limited | Construction HSE Audit |
| 03 | ETA Star | Construction HSE Audit |
| 03 | Hindustan Zinc limited-Udaipur and Zawar Mines | Construction HSE Audits, Incident Investigation, Construction Safety Training |
| 04 | Lafarge India Limited, Sonadhi | Construction HSE Audits Technical Safety Services Pre Commissioning Safety Audit |
| 05 | Toyoto Tshusho Private limited | Construction HSE Audits |
| 06 | Tata Consultancy Services, Chennai (Siruseri Site) | Construction HSE Audits Technical Safety Services |
| 07 | Tata Consultancy Services, Mumbai (Banyan Park) | Construction HSE Audits Technical Safety Services |
| 08 | Tata Consultancy Services, Hyderabad (Synergy Park) | Construction HSE Audits Technical Safety Services |
| 09 | Syscon India Limited | Construction HSE Audit |
| 10 | Shell India Private limited | Preparation of Construction Safety manual, Construction Safety Training |
| 11 | Ahluwalia Contracts India limited | ISO 14001 & OHSAS 18001 up gradation |
| 12 | Prominent builders & promoters | Risk Inspection |
| 13 | Action Construction Equipment limited | Safety Audit |
| 14 | Mohite Associates | Risk Inspection |
| 15 | Coromandel Engineering Company limited | Preparation of Construction Safety manual |
| 16 | Lafarge India limited,Mejia | Construction HSE Audits Technical Safety Services |

| | | |
|----|------------------------------------|---|
| | | Pre Commissioning Safety Audit |
| 17 | Technip KT | Pre commissioning Audit Training |
| 18 | Gujarat Gas | Multiple Training programs on specialized topics like Work at Height, Scaffolding etc |
| 19 | Coastal Energen Limited | Construction Safety Audits |
| 20 | NTPC Tamil Nadu Energy Corporation | Safety Training workshops |