



DELTA
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SOLUTIONS PVT. LTD.

DELTA ENGINEERING SOLUTIONS PVT. LTD.



COMPANY PROFILE

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Welcome Message

Welcome to Delta Engineering Solutions Pvt. Ltd.
At Delta Engineering Solutions Pvt. Ltd., we believe that safety, reliability, and innovation form the foundation of every successful operation.

With a strong commitment to excellence, we deliver end-to-end engineering solutions that empower industries to operate safely, efficiently, and in full compliance with global standards.



Founded with the vision of building a safer and smarter industrial ecosystem, Delta Engineering Solutions brings together a team of qualified professionals, advanced technology, and deep domain expertise to provide specialized services in Electrical Safety & Power System Studies, Fire and Life Safety Services, EHS Audits, and Safety Trainings.

We take pride in offering solutions that not only meet statutory requirements but also add measurable value to our clients' operations. Our work is guided by a simple philosophy — to prevent risks before they occur and to promote a proactive safety culture that sustains productivity and trust.

Through our tailored audits, technical studies, and hands-on training programs, we partner with organizations to identify vulnerabilities, enhance system reliability, and create safer workplaces.

Our approach integrates innovation, technical precision, and ethical practices, ensuring every project we deliver stands as a benchmark in quality and compliance.

As you go through this booklet, you will discover our core competencies, expertise, and unwavering dedication to delivering engineering solutions that protect people, property, and performance.

Together, let's engineer a future where safety and sustainability go hand in hand.



Vision Mission

Vision

To emerge as a leading engineering solutions provider recognized for excellence in safety, reliability, and sustainability.

We envision a future where every industrial and commercial facility operates with uncompromised electrical safety, efficient power systems, and resilient life safety infrastructures.

Through innovation, integrity, and technical expertise, we strive to empower industries to minimize risks, prevent incidents, and achieve operational excellence — creating a safer and smarter world for generations to come.

Mission

At Delta Engineering Solutions Pvt. Ltd., our mission is to deliver world-class, reliable, and compliant engineering services that enhance safety, ensure performance, and promote sustainable development.

We are driven by the commitment to:

- **Ensure Electrical Safety:** Provide precise and data-driven power system studies, electrical audits, and risk assessments to safeguard personnel, assets, and operations.
- **Advance Fire & Life Safety:** Design and implement comprehensive fire protection strategies and compliance audits to secure life, property, and business continuity.
- **Champion EHS Excellence:** Support organizations in achieving high standards of environmental, health, and safety performance through detailed audits, consulting, and system integration.
- **Empower Through Training:** Cultivate a proactive safety culture by delivering customized training programs that build awareness, competence, and accountability at all organizational levels.
- **Deliver with Integrity:** Uphold the highest standards of professionalism, transparency, and ethical practices in every engagement.
- **Our purpose** is to bridge engineering precision with safety innovation — ensuring that every project we undertake contributes to a safer, compliant, and energy-efficient future.

Company Values



Safety First

Safety is at the heart of everything we do.

We are committed to creating safer workplaces, reliable systems, and risk-free environments through preventive engineering practices and continuous safety improvement. Every solution we design and deliver aims to protect life, property, and operational continuity.



Integrity & Accountability

We believe in building trust through transparency, ethical practices, and professional responsibility.

Our commitment to integrity drives us to deliver honest assessments, reliable solutions, and long-term value to our clients — ensuring we do what's right, every single time.



Excellence Through Innovation

We continuously strive for technical excellence by embracing innovation, precision, and continuous learning.

By integrating advanced tools, global standards, and domain expertise, we ensure our solutions exceed expectations and set new benchmarks in engineering safety and performance.



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OUR CORE COMPETENCIES



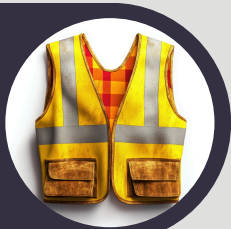
Electrical Safety & Power System Studies

We specialize in comprehensive electrical safety assessments and power system studies designed to ensure operational reliability, compliance, and risk mitigation. Our expertise includes load flow, short-circuit, arc flash, and relay coordination studies to enhance equipment protection and personnel safety. We integrate advanced simulation tools and standards such as IEEE, IEC, and NFPA 70E to deliver accurate diagnostics, optimize system performance, and prevent electrical hazards in industrial and commercial facilities.



Fire & Life Safety Services

Our fire and life safety solutions are tailored to safeguard people, property, and business continuity. We provide complete system design reviews, fire risk assessments, and compliance audits aligned with NBC, NFPA, and IS standards. From detection and suppression system evaluation to evacuation planning and emergency response readiness, we ensure every project meets stringent fire safety codes while fostering a proactive culture of prevention and preparedness.



EHS & Safety Audits

We conduct detailed Environment, Health, and Safety (EHS) audits to evaluate workplace safety, compliance, and sustainability. Our audits identify potential hazards, operational risks, and areas for improvement across facilities and processes. Using global benchmarks like ISO 45001, ISO 14001, and statutory norms, we deliver actionable insights that drive compliance, reduce incidents, and support continuous improvement in organizational safety performance.



Safety Trainings

We offer customized, industry-specific safety training programs aimed at empowering teams with the knowledge and practical skills required for safe operations. Our training modules cover electrical safety, fire safety, behavioral safety, and emergency response, blending regulatory requirements with real-world applications. Delivered by certified experts, our programs help build a strong safety culture, ensuring every individual contributes to a zero-incident workplace.

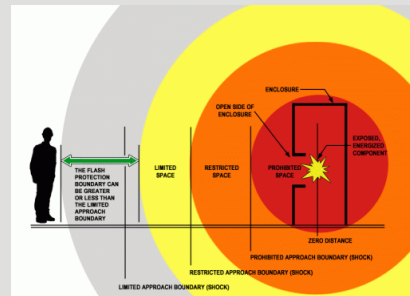


Electrical Safety & Power System Studies



ARC FLASH STUDY

- An Arc Flash Study is a critical electrical safety analysis that identifies potential arc flash hazards, incident energy levels, and safe working distances within an electrical system.
- At Delta Engineering Solutions Pvt. Ltd., we perform detailed studies using ETAP software, following the latest IEEE 1584, NFPA 70E, and IEC standards.
- Through accurate modeling, short-circuit, and protection coordination analysis, we determine the required PPE levels, arc flash boundaries, and risk mitigation measures — ensuring personnel safety, equipment reliability, and compliance with statutory norms.



Deliverables

Upon completion, we provide a comprehensive documentation package including:

1. Technical Report

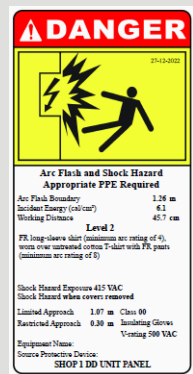
- Executive summary, standards followed, and study methodology.
- Single Line Diagram (SLD) modeled in ETAP.
- Load Flow, Short Circuit, and Protection Coordination results.
- Calculated incident energy, arc flash boundaries, and recommended PPE.
- Observations, risk levels, and safety recommendations.

2. Arc Flash Labels / Stickers

Each electrical panel or switchgear will be provided with high-durability labels showing:

- Equipment ID / Voltage / Fault Level
- Incident Energy (cal/cm^2) & Arc Flash Boundary
- PPE Category & Shock Boundaries
- Study Date & Applicable Standard (IEEE / NFPA)

Labels are UV-resistant and suitable for long-term industrial use.

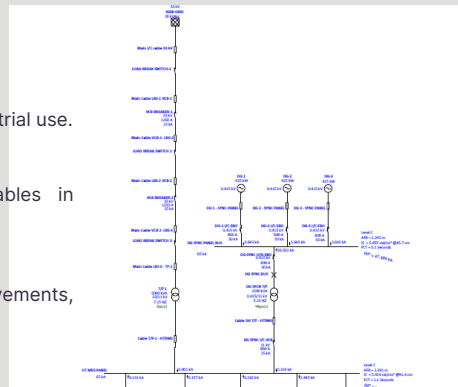


3. ETAP Project Files & Data Sheets

- Original ETAP project file (*.oti) and result tables in Excel/PDF format.

4. Recommendations & Action Plan

- Suggested corrective measures, coordination improvements, and safety training recommendations.



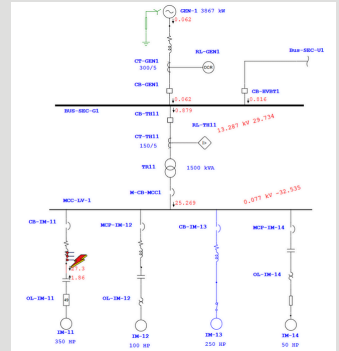


Electrical Safety & Power System Studies



RELAY COORDINATION STUDY

- A Relay Coordination Study ensures that the electrical protection system operates selectively, isolating only the faulty section of the network while keeping the healthy parts energized.
- At Delta Engineering Solutions Pvt. Ltd., we conduct detailed Relay Coordination Studies using ETAP software, adhering to IEEE, IEC, and IS standards to achieve optimal system protection, reliability, and continuity of supply.
- This study involves analyzing time-current characteristics (TCCs) of protective devices such as relays, breakers, and fuses to ensure coordinated operation and minimize equipment damage and downtime.



Deliverables

Upon completion, we provide a detailed report and supporting documents including:

1. Technical Report

- Study objective, methodology, and applicable standards.
- Updated Single Line Diagram (SLD) modeled in ETAP.
- Protection device settings (relays, MCCBs, fuses, etc.).
- Time-Current Characteristic (TCC) curves for each protection zone.
- Summary of coordination results and recommendations for improved protection settings.
- Observations on mal-coordination, grading issues, and corrective actions.

2. Recommended Relay Settings

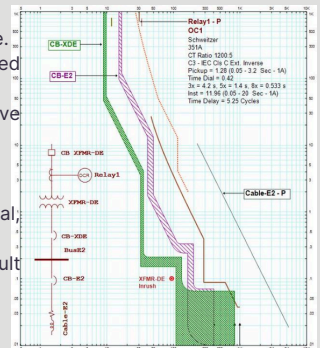
- Device-wise relay setting sheets (pick-up current, time dial, instantaneous settings, etc.).
- Suggested adjustments for improved system selectivity and fault clearance times.
- Printable relay setting summary sheets in Excel/PDF format.

3. ETAP Project & Data Files

- Original ETAP project file (*.oti) with all protection device data.
- Tabulated simulation results and coordination curves for client reference.

4. Recommendations & Action Plan

- Protection optimization suggestions to minimize tripping overlap.
- Maintenance and periodic testing guidelines for relay performance validation.



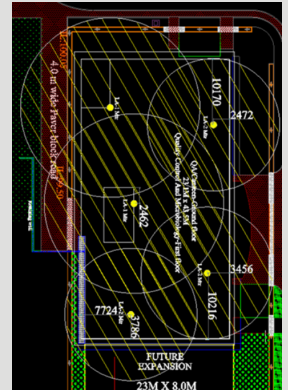


Electrical Safety & Power System Studies



LIGHTNING PROTECTION STUDY

- A Lightning Protection Study is conducted to safeguard buildings, equipment, and personnel from the damaging effects of lightning strikes and transient over voltages.
- At Delta Engineering Solutions Pvt. Ltd., we perform detailed Lightning Protection and Earthing Studies using advanced simulation tools and in accordance with IEC 62305, IS/IEC 62305, and NBC standards.
- Our analysis ensures that the structure, grounding system, and surge protection devices are properly designed and coordinated to safely dissipate lightning energy, minimizing risks to life and assets.



Deliverables

Upon completion, we provide a comprehensive assessment and documentation package that includes:

1. Technical Report

- Overview of site conditions, study objectives, and methodology.
- Risk assessment as per IEC 62305-2 (Lightning Risk Management).
- Detailed Lightning Protection System (LPS) design and classification (LPL I-IV).
- Evaluation of air terminals, down conductors, and earthing system adequacy.
- Analysis of surge protection device (SPD) placement and coordination.
- Compliance review against relevant Indian and international standards.

2. Drawings & Layouts

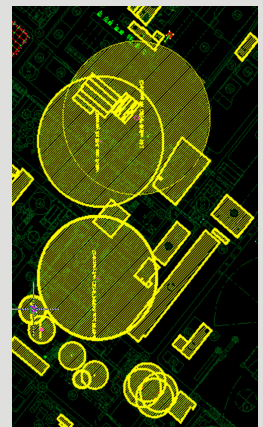
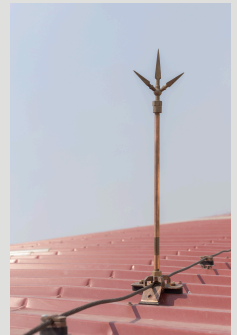
- Updated layout drawings showing proposed LPS network and earthing connections.
- Grounding grid and bonding details for lightning current dissipation.
- Recommended conductor routing and protection zones.

3. Test Data & Calculations

- Soil resistivity test data and earthing resistance calculations.
- Lightning current and potential rise simulations.
- Material and specification sheets for recommended components.

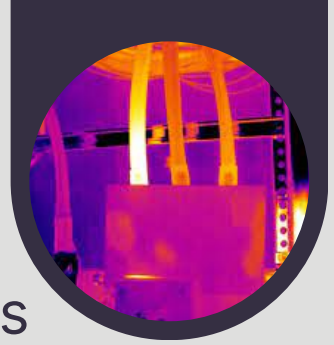
4. Recommendations & Action Plan

- Design improvements for optimized protection coverage.
- Installation and maintenance guidelines for long-term performance.
- Integration of SPD and earthing systems with building electrical safety.





Electrical Safety & Power System Studies



THERMOGRAPHY STUDY

- Thermography Study (Thermal Imaging Inspection) is a non-contact diagnostic technique used to detect abnormal heat patterns in electrical and mechanical systems. These temperature anomalies often indicate loose connections, overloads, insulation deterioration, or component failures.
- At Delta Engineering Solutions Pvt. Ltd., we conduct thermographic inspections using high-resolution infrared cameras in line with ISO 18434, NFPA 70B, and IS standards. Our certified engineers analyze thermal data to identify potential risks early, ensuring equipment reliability, reduced downtime, and enhanced electrical safety.



Deliverables

Upon completion, we provide a detailed inspection report and documentation package, including:

1. Thermography Inspection Report

- Executive summary outlining key findings and risk levels.
- Infrared and visual images of each inspected equipment.
- Temperature readings, load conditions, and severity classification.
- Root-cause analysis of hotspots and potential failure risks.
- Recommendations for corrective and preventive actions.

2. Equipment-wise Observation Sheets

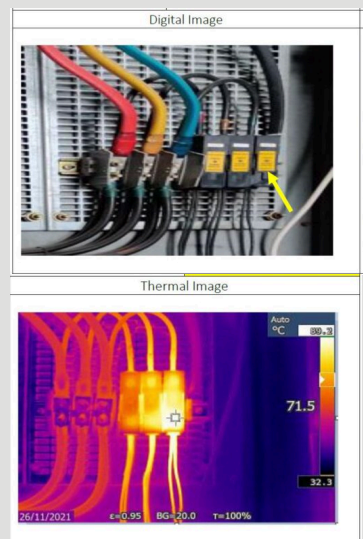
- Detailed log of inspected panels, MCCs, transformers, motors, etc.
- Temperature variance analysis with acceptance limits.
- Priority-based risk categorization (Critical / Moderate / Normal).

3. Image & Data Archive

- Original thermographic images and analysis files in digital format.
- Summary tables in Excel/PDF for quick reference and recordkeeping.

4. Recommendations & Action Plan

- Maintenance and repair suggestions for abnormal temperature zones.
- Follow-up inspection frequency and preventive maintenance guidelines.





Electrical Safety & Power System Studies



ENERGY AUDIT

- An Energy Audit is a systematic assessment of a facility's energy consumption aimed at identifying opportunities to improve efficiency, reduce wastage, and lower operational costs.
- At Delta Engineering Solutions Pvt. Ltd., we conduct Comprehensive and Detailed Energy Audits in accordance with Bureau of Energy Efficiency (BEE) guidelines, Energy Conservation Act, 2001, and relevant IS/ISO standards.
- Our audits analyze electrical and thermal systems, utility performance, and process efficiency to develop actionable strategies for energy savings and sustainability.



Deliverables

Upon completion, we provide a detailed audit report including:

1. Energy Audit Report

- Summary of audit scope, methodology, and standards followed.
- Detailed analysis of energy consumption patterns (electrical, thermal, and utility).
- Equipment performance evaluation and benchmarking against industry norms.
- Identification of energy losses and efficiency gaps.
- Cost-benefit analysis of recommended Energy Conservation Measures (ECMs).

2. Measurement & Data Records

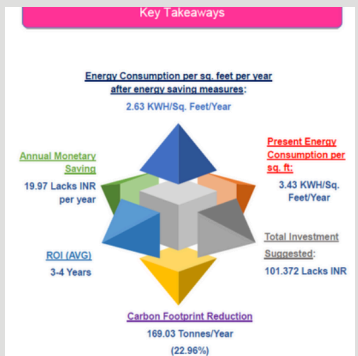
- On-site measurement data for voltage, current, power factor, fuel, steam, compressed air, and lighting systems.
- Supporting graphs, load profiles, and trend analysis.

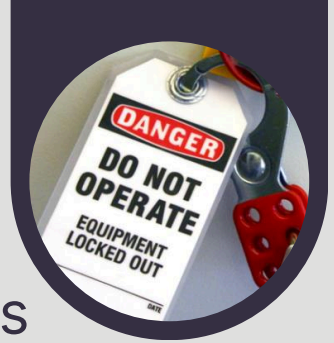
3. Savings Estimation & Action Plan

- Quantified energy and cost savings potential.
- Investment requirement and simple payback period for ECMs.
- Prioritized implementation roadmap for efficiency improvement.

4. Recommendations & Compliance Support

- Practical recommendations for energy optimization.
- Guidance for BEE certification, ISO 50001, and statutory compliance





Electrical Safety & Power System Studies

LOTO ASSESSMENT

- A Lockout-Tagout (LOTO) Assessment ensures that proper energy isolation procedures are in place to protect personnel from accidental startup or release of hazardous energy during maintenance or servicing activities.
- At Delta Engineering Solutions Pvt. Ltd., we conduct comprehensive LOTO assessments in alignment with OSHA 29 CFR 1910.147, IS 15883, and industry best practices.
- Our evaluation focuses on identifying energy sources, reviewing isolation practices, and verifying compliance with safe work procedures to establish an effective and sustainable energy control program.

Deliverables

Upon completion, we provide a complete assessment report including:

1. LOTO Assessment Report

- Review of current LOTO practices and compliance status.
- Identification of hazardous energy sources and isolation points.
- Gap analysis with applicable OSHA/IS standards.

2. Equipment-wise LOTO Register

- Comprehensive list of equipment with energy sources and isolation methods.
- Recommended lockout devices and tagging requirements.

3. Customized LOTO Procedures & Flowcharts

- Step-by-step isolation procedures and visual reference charts for operators.

4. Recommendations & Training Plan

- Action plan for system improvement and LOTO standardization.
- Training roadmap to build employee awareness and compliance.



No.	Energy Source & Potential	Location	Isolation Device / Diagram	Method of LOTO	LOTO Verification
01	Main Electrical Supply 415V Working Panel	Electrical Isolation point is given at Working Panel		Turn the switch to OFF position and then apply lockout and tagout	Check voltage on three phases of the breaker after isolation.
02	Electrical Supply 415V Fuse	Kindly take out the fuse, and put the tag.			
03	Main Electrical Supply 415V Compressor Air Tank DB	Electrical Isolation point is at MCB DB present near filling machine		Turn the push button to OFF position and then apply lockout with tag	Check voltage on three phases of the MCB after isolation.



Electrical Safety & Power System Studies

ELECTRICAL SAFETY AUDIT

- An Electrical Safety Audit (ESA) ensures the integrity, reliability, and compliance of electrical systems while minimizing fire and shock hazards.
- At Delta Engineering Solutions Pvt. Ltd., audits are conducted as per IE Rules, NBC Part 8, and relevant IS/IEC standards, ensuring full statutory and technical compliance.
- Each observation and recommendation is supported with photographic evidence, measurement data, and specific standard clause references — avoiding vague terms like “good engineering” or “industrial practices.”

Deliverables

Upon completion, we provide a complete assessment report including:

1. Electrical Safety Audit Report

- Assessment of panels, earthing, cabling, and protection systems.
- Clause-wise compliance review with evidence-backed findings.

2. Risk Identification & Analysis

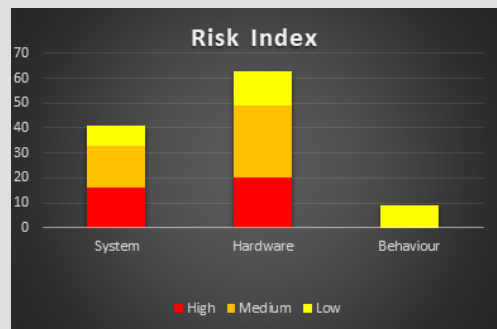
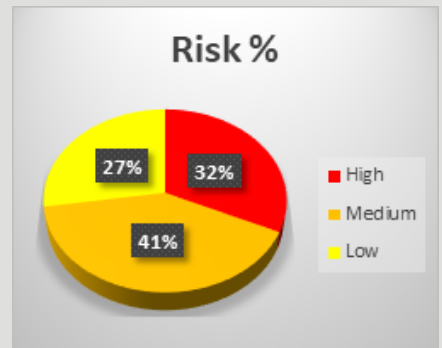
- Categorization of observations into critical, major, and minor risks.
- Root cause and hazard impact evaluation.

3. Recommendations & Compliance Plan

- Standard-backed corrective actions and prioritization matrix.
- Post-implementation compliance checklist.

4. Compliance Summary & Validation

- Consolidated checklist against applicable standards and regulations.
- Verification format for post-implementation compliance review.



		Determine the internal and/or external personnel needed to implement and maintain the EPM program	CEA Reg 2010, Art-3	HIGH (S)
4.	List of authorized persons is not displayed at the entrance of the switchyard.	Non-Compliant It is recommended that a list of authorized persons having valid electrical licenses shall be prepared and same shall be displayed on the gate to restrict the entry of any unauthorized persons. <i>Standard Clause:</i> No person shall be authorized under sub-rule(1) unless he is competent to perform the duties assigned to him and possesses either an appropriate certificate of competency or permit to work.		
5.	Danger signage displayed on the VCB is observed to be faded.	It is recommended that the danger signage shall be affixed on the transformer and AVR in order to make the people aware about the electrical hazard. Danger signage provided shall be in Hindi or English and the local language of the district, with a sign of skull and bones so that it would be understood to all the employees or outsiders within the facility. The danger signage shall be as per IS 2551 rule 35.	CEA Regulations 2010, Regulation 10 (IS 2551)	LOW (H)



FIRE & LIFE SAFETY SERVICES



FIRE SAFETY & ADEQUACY AUDIT

- A Fire Safety & Adequacy Audit evaluates the readiness and effectiveness of fire prevention, detection, and protection systems in a facility.
- At Delta Engineering Solutions Pvt. Ltd., we conduct comprehensive fire safety audits as per National Building Code (NBC Part 4), NFPA, and IS standards to ensure that all fire protection measures are compliant, functional, and adequate for the assessed risk.
- Our objective is to identify potential fire hazards, verify system adequacy, and recommend improvements that enhance life safety, property protection, and business continuity.



Deliverables

Upon completion, we provide a detailed audit report including:

1. Fire Safety Audit Report

- Assessment of fire detection, alarm, and suppression systems.
- Verification of compliance with NBC, NFPA, and statutory norms.
- Review of fire exits, emergency lighting, evacuation plans, and signage.
- Identification of fire hazards and system deficiencies.



2. System Adequacy Evaluation

- Evaluation of fire load, water storage capacity, and hydrant pressure.
- Functional checks of pumps, sprinklers, extinguishers, and detectors.
- Review of passive fire protection (compartmentation, sealing, and access routes).

3. Drawings & Layouts

- Updated fire protection layout with hydrant and extinguisher mapping.
- Recommendations for equipment placement and evacuation routes.

4. Recommendations & Compliance Plan

- Corrective action plan for identified gaps and non-conformities.
- Fire safety management and maintenance guidelines.

Ref. No.	SR. No.	Location	Existing PPE Type	Existing Capacity (KG)	Classification of Hazard	Area in Sq.mt	Required Capacity	Proposed PPE Type	Capacity	Remarks / Note
On BWC	11	Corridor (CLP Lab)	MF 9							
	12	Corridor (CLP Lab)	ABC 6							
	35	Plant Location (2 Terrace/Ground)	MFABC		Hazardous Material	1203	9	CO2	4.5	Since there is Lesser no. electrical Equipment 2 Extinguishers are sufficient. It should be provided with weatherproof shed.
	1	Lower Utility terrace	ABC 6			1203	9	CO2	4.5	
	2	Lower Utility terrace	ABC 6							
	3	Terrace Area						CO2	4.5	Since there is Lesser no. electrical Equipment 2 Extinguishers are sufficient. It should be provided with weather proof shed.
	4	Terrace Area				2406	17	ABC	6	Required no. of portable fire extinguisher as per IS 2109:2010 is 7 No. However due to production and storage different class of hazardous material Qty of existing extinguisher are adequate.
	36	Plant Location (Lower Terrace)	MFABC		Hazardous Material	1034	7			
	1	Head house entry	CO2	4.5						
	2	Head house entry	ABC	6						
	3	Head house office area	ABC	6						





- A well-planned Fire Line and Evacuation Layout Design is essential to ensure effective fire protection coverage and safe evacuation during emergencies.
- At Delta Engineering Solutions Pvt. Ltd., we design and review fire protection system layouts in line with National Building Code (NBC Part 4), NFPA, and relevant IS standards to provide optimal fire safety solutions for industrial, commercial, and residential facilities.
- Our designs aim to achieve maximum coverage, efficient response time, and safe egress for occupants while ensuring full regulatory compliance.

Upon completion, we provide a detailed audit report including:

- Detailed drawings showing hydrant, sprinkler, hose reel, and riser network layouts.
- Hydraulic calculations for adequate pressure and flow rate.
- Sizing of pipes, pumps, tanks, and valves as per system requirements.
- Integration of fire detection, alarm, and suppression systems.

- Floor-wise evacuation route drawings with assembly points and exit signage.
- Calculation of occupant load and egress time as per NBC.
- Placement of emergency lighting and directional signage for visibility.

- Design verification against NBC/NFPA standards.
- Recommendations for layout improvements and system upgrades.
- Guidance for approval from statutory fire authorities.





FIRE & LIFE SAFETY SERVICES



ONSITE EMERGENCY RESPONSE PLAN

- An effective Onsite Emergency Response Plan (ERP) ensures preparedness, swift response, and minimal impact during unforeseen incidents such as fire, explosion, chemical release, or natural disaster.
- At Delta Engineering Solutions Pvt. Ltd., we develop comprehensive ERPs in alignment with the Factories Act, NDMA Guidelines, and NBC standards, tailored to the unique risk profile of each facility.
- Our approach focuses on proactive planning, clear communication channels, and defined responsibilities to safeguard people, property, and the environment.



Deliverables

Upon completion, we provide a detailed audit report including:

1. Risk Assessment & Hazard Identification

- Evaluation of potential onsite and offsite emergencies.
- Classification of risks based on severity and likelihood.
- Mapping of critical areas and vulnerable sections.

2. Emergency Response Plan Document

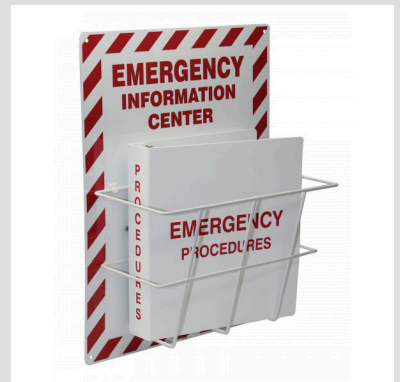
- Structured ERP manual detailing control measures, alarm systems, and response hierarchy.
- Roles and responsibilities of emergency teams and key personnel.
- Procedures for evacuation, communication, medical aid, and rescue operations.

3. Layouts & Resource Mapping

- Emergency control room layout, assembly points, and escape routes.
- Mapping of firefighting equipment, first-aid centers, and emergency exits.

4. Training & Mock Drill Schedule

- Training plan for emergency coordinators and response teams.
- Recommendations for periodic drills and plan evaluation.





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FIRE & LIFE SAFETY SERVICES



MOCK DRILLS AND FIRE DRILLS

- Mock Drills are essential for evaluating the preparedness and effectiveness of an organization's emergency response system.
- At Delta Engineering Solutions Pvt. Ltd., we plan, conduct, and evaluate mock drills in compliance with the Factories Act, NDMA Guidelines, and NBC provisions, ensuring that employees are trained to respond quickly and efficiently during emergencies.
- Our drills simulate realistic fire, chemical, or disaster scenarios to test coordination, communication, and response capabilities.



Deliverables

Upon completion, we provide a detailed audit report including:

1. Pre-Drill Planning

- Site walkthrough and identification of potential emergency scenarios.
- Formation of response teams and briefing on roles and procedures.

2. Drill Execution & Observation

- Live execution of emergency drills under expert supervision.
- Real-time evaluation of response time, evacuation process, and team coordination.

3. Post-Drill Evaluation Report

- Detailed performance analysis with photographic and timing evidence.
- Observation-wise recommendations aligned with NDMA/NBC standards.
- Action plan for improving preparedness and reducing response gaps.





Thank You

We extend our sincere gratitude for taking the time to learn about Delta Engineering Solutions Pvt. Ltd.


Your trust and interest in our services inspire us to continually innovate, improve, and deliver engineering excellence in every project we undertake.


At Delta Engineering Solutions, we value every partnership and believe that true success lies in collaboration, integrity, and a shared vision for safety and sustainability.


Together, let's continue to build safer systems, stronger infrastructures, and a more secure future.

We look forward to the opportunity to work with you and to be your trusted partner in engineering safety and reliability.

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