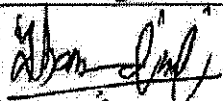



L&T Infrastructure Development Projects Limited

1st Floor, TCTC Building, Mount Poonamallee Road,
Manapakkam, Chennai 600 089

STANDARD OPERATING PROCEDURES

	Name	Designation	Signature
Prepared by:	Yusuf Khan Kukad	Dy. General Manager - Quality	
Authorized by:	J Subramanian	Compliance Officer	


Revision History

Rev. No.	Date of Rev.	SOP Amended	Reason for revision In brief
0	NII	None	Original Issue


Please read the Objectives, Scope & Applicability of this manual.



Doc. No	Title	Rev.	Page Nos.
1	Objectives	0	1
2	Scope & Applicability	0	2 – 3
3	ESG Policy	0	4 – 7
4	Definitions	0	8
5	Employees' Responsibilities	0	9
6	Contractors' Responsibilities	0	10 – 14
7	Work Permit System	0	15 – 22
8	Legal Compliance	0	23 – 33
9	Child Labour	0	34 – 37
10	Health & Hygiene – Labour Camps	0	38 – 43
11	First Aid	0	44 – 49
12	Fire Safety	0	50 – 53
13	Work Place Safety	0	54 – 56
14	Emergency Preparedness Plan	0	57 – 58
15	Personal Protective Equipment	0	59 – 61
16	Machine Safety & Statutory Requirements	0	62 – 65
17	Safe Welding & Gas Cutting Operation	0	66 – 69
18	Fall Prevention / Protection	0	70 – 72
19	Safe Handling of Batteries	0	73
20	Chemical Handling	0	74 – 75

 L&T IDPL	INDEX	Page 2 of 2
--	--------------	-------------

Doc. No	Title	Rev.	Page Nos.
21	Waste Management	0	76 – 88
22	Monitoring – Ambient Conditions	0	89 – 90
23	Hand Tools	0	91 – 92
24	Construction Equipment	0	93 – 95
25	Transportation Vehicles	0	96
26	Electrical System & Statutory Requirements	0	97 – 100
27	Diesel Generation Set	0	101 – 104
28	Power Tools	0	105 – 107
29	Operation and Maintenance of A/C Plant & System	0	108
30	Illumination	0	109 – 110
31	Signages	0	111
32	Energy Conservation	0	112 – 113
33	Safety in Computer Operations	0	114
34	Calibration	0	115
35	Community Grievance	0	116 – 117

 L&T IDPL	Standard Operating Procedure	Doc. No. 1
		Rev. No. 0
	Objectives	Date : 14/08/2015
		Page 1 of 1


Statutory compliance, in the recent past, has assumed significance in the way the business is conducted and has almost become an integral part of the overall business environment. With the induction of overseas investor on Board, managing rules & regulations on Environment, Health and Safety (EHS) has become a focus area and in this context, the Group has adopted an ESG Policy. In order to effectively implement the policy, following areas need to be necessarily addressed –

- a) Adherence to legal requirements on material EHS issues that may arise in various infrastructure projects.
- b) Screening and evaluation of the intermediaries (contractors, vendors etc.) engaged by the Group with regard to their EHS management systems, practices and ensuring their compliance.

Given the above objective and the imperative need to facilitate the implementation of the ESG policy, number of Standard Operating Procedures (SOPs) have been formulated to :

- 1) define individual responsibilities and procedures relating to Environmental, Health and Safety matters ;
- 2) act as a guide in complying with various statutory and regulatory requirements for conducting day to day operations ;
- 3) identify various risks / hazards in operations and also define appropriate preventive measures to ensure safety of all staff of the Group and that of the Contractors.

While all efforts have been made to keep the SOPs as comprehensive and lucid as possible, suggestions are always welcome from all concerned for any improvement, both in form and substance.


 L&T IDPL	Standard Operating Procedures	Doc. No. 2
		Rev. No. 0
	Scope & Applicability	Date : 14/08/2015
		Page 1 of 2

The Standard Operating Procedures (SOP) are designed for use by L&T IDPL, its subsidiaries and project companies (Group) including projects under implementation and also the O&M Projects, as listed in Annexure. Further, the SOPs are also applicable to all the Contractors, Sub-Contractors and Vendors who are working for and on behalf of the Group.

The SOPs describe the process for creating a safe working environment throughout the Group, by facilitating the concerned stakeholders towards achieving the requisite statutory and legal compliances and also to keep one's own work place and surrounding environment clean and hygienic.


While the Project Manager and/or Site In-charge, as the case may be, will have the overall responsibility for implementing the SOPs, they will identify and assign appropriate staff within their set-up for effective implementation of the SOPs and for ensuring that the procedures are followed scrupulously.

All concerned are required to have a complete understanding of the procedures described in the SOPs and to receive specific training regarding these procedures, if necessary.

 L&T IDPL	Standard Operating Procedures	Doc. No. 2
		Rev. No. 0
	Scope & Applicability	Date : 14/08/2015
		Page 2 of 2

ANNEXURE

L&T INFRASTRUCTURE DEVELOPMENT PROJECTS LIMITED, HEAD QUARTERS 1 ST FLOOR, TCTC BUILDING, MOUNT POONAMALLEE ROAD, MANAPAKKAM, CHENNAI - 600089	L&T WESTERN ANDHRA TOLLWAYS LIMITED TOLL PLAZA, KM 114, NH 44, SHAKAPUR VILLAGE, ADDAKAL MANDAL, MAHABUGNAGAR, TELANGANA 500 382
L&T KRISHNAGIRI THOPPUR TOLLROAD LIMITED TOLL PLAZA, KM 155, NH 7, PALAYAM VILLAGE, DHARMAPURI 636 807.	KUDGI TRANSMISSION LIMITED 38 CUBBON ROAD, SHIVAJI NAGAR, BANGALORE - 560001
L&T TRANSPORTATION INFRASTRUCTURE LIMITED MADUKKARAI TOLL PLAZA, COIMBATORE BYPASS ROAD, POST BOX NO.16, MADUKKARAI, COIMBATORE - 641 105	L&T AHMEDABAD MALIYA TOLLWAY LIMITED, TOLL PLAZA, SECTION 2, KM 88+000, VILLAGE BAJANA, TALUKA DASADA (MALVAN), DIST. SURENDRANAGAR, GUJARAT 382 745
L&T PANIPAT ELEVATED CORRIDOR LIMITED TOLL PLAZA, KM 95, NH1, PANIPAT 132 110. HARYANA	L&T RAJKOT - VADINAR TOLLWAY LIMITED, KM-58+325, TOLL PLAZA BUILDING, VILLAGE SOYAL, RAJKOT JAMNAGAR SH NO.25, TALUKA DHROL, DIST. JAMNAGAR, GUJARAT 361 210.
L&T VADODARA BHARUCH TOLLROAD LIMITED TOLL PLAZA, KM 157, NH 8, VILLAGE BHARTHANA, TALUKA KARJAN, DIST. VADODARA 391 244	L&T SAMAKHIALI GANDHIDHAM TOLLWAY LIMITED, 139 & 140, 1 ST FLOOR, DC-3, B/H RAMBAGH HOSPITAL, ADIPUR, KUTCH 370 205
L&T DECCAN TOLLWAY LIMITED. PLOT NO.11 & 12, UPTAIRS OF SIDDHIN VINAYAKA TRADERS, OPP. TO ALIPUR DHARGA, ZAHEERABAD, MEDAK DISTRICT, ANDHRA PRADESH - 502 220.	L&T INFRASTRUCTURE DEVELOPMENT PROJECTS LIMITED, O&M CENTRE 2ND FLOOR, SUDEEP PLAZA, MLU, POCKET-4, SECTOR-11, DWARKA, NEW DELHI - 1100075
L&T HALOL - SHAMLAJI TOLLWAY LIMITED PANAMPATIA, VILLAGE GAMON BARIA NA MUVADA, TALUKA SHAHERA, DIST. PANCHMAHAL, GUJARAT - 389 210.	L&T KRISHNAGIRI WALAJAH TOLLWAY LIMITED, TOLL PLAZA, KM 98.520, NH 46, PALLIKONDA VILLAGE, VELLORE DISTRICT 635 809.
L&T SAMBALPUR ROURKELA TOLLWAY LIMITED, C/O. LARSEN & TOUBRO LIMITED, OLD TAD OFFICE BUILDING, P.O. KANSBAHAL 770 034. DIST. SUNDERGARH, ODHISHA.	L&T BEAWAR-PALI-PINDWARA TOLLWAY LIMITED, TOLL PLAZA NO.2, KM 93.750, NH 162 (OLD NH 14), VILLAGE MATH, NEAR JADAN, TEHSIL & DIST. PALI, RAJASTHAN 306 401.
L&T INFRASTRUCTURE DEVELOPMENT PROJECTS LIMITED, REGIONAL OFFICE SECOND FLOOR, 9TH AVENUE, FINAL, PLOT NO. 301, B/H.RAJPATH CLUB, BODAKDEV, S.G. ROAD, AHMEDABAD 380 059.	PIMPALGAON NASHIK GONDE TOLLWAY LIMITED, TOLL PLAZA AT NH 3, KM 390 + 450, AT PO: PIMPALGAON BASWANT, TAL. NIPHAD, DIST. NASHIK - 422 209
L&T INTERSTATE ROAD CORRIDOR LIMITED NH 27, TOLL PLAZA COMPLEX, NEAR KHEMANA PATIA, POST MALANA, DIST. BANASKANTHA, PALANPUR, GUJARAT 385 001.	L&T DEVIHALLI HASSAN TOLLWAY LIMITED, OPP. MOHAN ENGINEER HOUSE, RAGHAVENDRA SAW MILL CROSS ROAD, MAHALAKSHMI LAYOUT, CHANNARAYAPATNA 573 116. DIST. HASSAN

 L&T IDPL	Standard Operating Procedure	Doc. No. 3
		Rev. No. 0
	ESG Policy	Date : 14/08/2015
		Page 1 of 4

Group Employment, Safety, Environment and Governance (ESG) Policy

Our Objective

L&T Infrastructure Development Projects Limited, its subsidiaries and project companies (the **Group**) are committed to providing a safe and healthy workplace for their employees and stakeholders and to conserving the Environment.


Employment, Health and Safety (EHS)

To achieve our Objective in connection with EHS we:

- Promote a positive EHS culture.
- Comply with all statutory and other applicable legal and regulatory requirements with respect to EHS and seek to ensure our Intermediaries do the same.
- Incorporate EHS considerations in all business processes, including by ensuring appropriate health and safety measures are adopted, ensuring employees are provided with, and use, protective equipment when dealing with potential hazards, and by the provision of regular occupational health and safety training for employees.
- Identify, monitor and control EHS risks which arise in connection with our projects and operations, including in subcontracted works.
- Record and review all accidents, occupational health and safety related incidents and lost time days and investigate all serious occupational health and safety incidents, including in subcontracted works.
- Ensure that all of our workplaces which are exposed to high-risk hazards have appropriate emergency plans in place.
- Screen, evaluate and engage our Intermediaries based on their EHS management systems and practices.
- Encourage communication, consultation and collaboration with all employees and stakeholders.

Workers' Rights

- To achieve our Objective in connection with Workers' Rights we:
- Respect the rights of our employees, including by providing fair and timely wages, supporting their work-life balance, providing safe working conditions, fostering worker engagement, including by the provision to employees of information on Workers' Rights and of mechanisms to raise employment-related grievances, and permitting freedom of association.
- Prohibit the use of any child or young workers and the use of any form of forced or compulsory labour in connection with our business.
- Prohibit all forms of discrimination and abuse in our work place.

 L&T IDPL	Standard Operating Procedure	Doc. No. 3
		Rev. No. 0
	ESG Policy	Date : 14/08/2015
		Page 2 of 4

- Comply with all statutory and other applicable legal and regulatory requirements with respect to Workers' Rights.
- Have in place policies governing the provision to our employees of overtime, vacation and public holidays and maternity, sickness and disability benefits.
- Protect the rights of migrant workers in accordance with applicable statutory and other legal requirements.
- Screen, evaluate and engage our Intermediaries based on their respect for Workers' Rights.
- Monitor compliance with and risks to Workers' Rights in connection with our Projects, including in subcontracted works.
- Encourage communication, consultation and collaboration with all employees and stakeholders.

The Environment

To achieve our Objective in connection with the Environment we:

- Seek to adopt sustainable and resource-efficient processes and to conserve natural resources, reduce adverse environmental impacts (such as waste and environmental emissions) and enhance energy efficiency.
- Comply with all statutory and other applicable legal and regulatory requirements with respect to the environment (including by seeking all required environmental clearances, permits, and licenses, and maintaining a register of these) and seek to ensure our Intermediaries do the same.
- Seek to identify, monitor and control environmental risks which arise in connection with our projects and operations, including in subcontracted works.


Dealing with Intermediaries

The term **Intermediaries** refers to a Group company's agents, representatives, vendors, contractors, sub-contractors, consultants, distributors and any other persons engaged by a Group company, or who are engaged to act for a Group company in its business dealings with any government or Official, or in obtaining governmental approvals.

We have a Group Intermediary Appointment Policy (available with the Compliance Officer) which provides for ESG risk assessment and risk mitigation measures in relation to different types of Intermediaries and for standard ESG related contractual provisions for contracts with Intermediaries.

In general:

- We expect that Intermediaries with which we do business to either formally acknowledge and abide by relevant aspects of this Policy, or to have adequate ESG policies and procedures of their own in place.

 L&T IDPL	Standard Operating Procedure	Doc. No. 3
		Rev. No. 0
	ESG Policy	Date : 14/08/2015
		Page 3 of 4

➤ When engaging an Intermediary, a Group company should:

- perform proportionate and risk-based due diligence checks on the Intermediary; and
- consider and respond appropriately to the findings of that due diligence, particularly where areas of high concern are identified, in accordance with the Group's Intermediary Appointment Policy.

Training

Group employees (including directors, officers and senior management) will receive training to ensure they understand applicable ESG law, are aware of and understand this Policy, are equipped to respond to specific risks which relate to their particular role and know what the Group expects of them. Where appropriate, Intermediaries will also receive training appropriate to their role.

Process for reporting possible violations of applicable law or this Policy

We have established a Whistle Blower and Investigations Policy (available with the Compliance Officer) which provides a process for Group employees and Intermediaries to report possible or suspected violations of applicable ESG law or this Policy to the Compliance Officer, their Head of Department or to the Whistle Blowing and Investigations Committee.

We will promptly investigate such reports in accordance with the Policy.


Employees or Intermediaries will not be demoted or suffer any other unfavourable treatment as a result of making a good faith report of a possible violation of applicable law or this Policy, even if it may result in the Group losing business.

If any Group employee violates this Policy or retaliates against another employee who has reported a possible violation of applicable law or this Policy then they will be subject to disciplinary action, which may include termination of employment.

Management leadership, oversight, implementation and review

The Company's Guidance Committee and Audit Committee, together with its Chief Executive Officer, Chief Financial Officer and Compliance Officer are responsible for providing leadership, resources and active support for the implementation of this Policy.

The Compliance Officer will communicate this Policy to the Group and relevant external parties at least annually, and at other appropriate times, such as when this Policy is amended or updated.

 L&T IDPL	Standard Operating Procedure	Doc. No. 3
		Rev. No. 0
	ESG Policy	Date : 14/08/2015
		Page 4 of 4

The Audit Committee will oversee compliance with this Policy. The Compliance Officer, under the supervision of the Guidance Committee, is responsible for its day to day implementation.

We have an annual ESG risk assessment and audit to assess the effectiveness of this Policy.

The terms of reference of such audits are set annually by the Audit Committee, which will also oversee the annual audit. Where issues are identified, the Audit Committee will prescribe solutions to be implemented by the Group.


The Compliance Officer will report to the Guidance Committee on general compliance with this Policy and its effectiveness on a regular basis and to the Audit Committee annually in connection with the annual ESG risk assessment and audit.

The Compliance Officer will also notify the Audit Committee should they become aware of any non-compliance (or potential non-compliance) with applicable law or this Policy.


If an employee identifies a deficiency in this Policy they should report it to the Compliance Officer, who will consult with the Guidance Committee on the appropriate action to be taken.

Advice and assistance

Employees should contact the Compliance Officer for advice and assistance on any matters relating to this Policy.

 L&T IDPL	Standard Operating Procedure	Doc. No. 4
		Rev. No. 0
	Definition & Explanations	Date : 14/08/2015
		Page 1 of 1

S.No.	Definition / Abbreviation	Explanation / expanded form
1	Contractors	Includes service providers like EPC / Contractors / Sub-contractors / Vendors as is relevant to whom works are awarded
2	CA	Concession Agreement
3	CC & A	Consolidated Consent and Authorization provided by SPCBs in project activity / operation phase
4	Doc.	Document
5	EIP	Employee Information Portal
6	ESG Policy	Employment, Safety, Environment and Governance (ESG) Policy
7	EHS	Environment , Health & Safety
8	EHS Co-ordinator	Includes EHS Co-ordinator at HQ and at Site
9	Group	Includes L&T IDPL, its subsidiaries & project company
10	Intermediary Appointment Policy	As stated in the ESG Policy (SOP Doc. No. 4)
11	IR	Industrial Relations
12	PM	Project Manager
13	Records	<p>Documentary output of an activity. These can be internally designed format or externally provided in Act / Rules.</p> <p>For the external formats, the relevant prescribed forms as is provided shall be considered. Wherever formats used by group companies are adapted for use, a mention about the origin shall be in the foot note</p>
14	Rules	In the SOPs references of various Statutory Rules of a particular State are listed. These are for reference purpose only. As an example if the Rules of Gujarat State is stated, the sites in other states should consider the similar Rules as applicable to their States.
15	SOP	Standard Operating Procedures
16	Site in-charge	Includes the Section Head, Section Project Manager etc.
17	SPCB	State Pollution Control Board
18	CPCB	Central Pollution Control Board
19	Competent Person	A person so approved by Government, who belongs to a testing establishment in India, possessing adequate qualification, experience and skill for the purpose of testing, examination or annealing and certification of lifting appliances, lifting gears, wire ropes or pressure plant or equipment


 L&T IDPL	Standard Operating Procedure	Doc. No. 5
		Rev. No. 0
	Employees' Responsibilities	Date : 14/08/2015
		Page 1 of 1

1. **Purpose** : To ensure compliance to all EHS requirements while carrying out their responsibilities.
2. **Scope/Applicability**: Sites / all offices
3. **Responsibility** : All Staff / PM /Site in-charges
4. **Key Words** : EHS – Environment , Health & Safety
5. **Procedure** :

S.No.	Activity	Responsibility
	Each employee is responsible for:	
5.1	Understanding of Health, Safety/Environmental policies and SOPs pertinent to their job responsibilities.	All Staff
5.2	Participating in site orientations, training classes and meetings.	HR / All Staff
5.3	Demonstrating a positive attitude toward injury prevention, the protection of the environment and company property, and shall accept that all injuries can and should be prevented.	All Staff
5.4	Performing their job safely, for their personal safety, the safety of fellow workers, and the protection of the environment and company property. This includes the proper use of safety equipment and strict adherence to safe work practices and established Safety Standards.	All Staff
5.5	Stopping an activity or shutting down any operation which is unsafe (Including sub-contractors).	PM / Site In-charge
5.6	Promptly reporting all incidents and injuries, unsafe conditions and practices (including contractors) to their supervisor and cooperating with investigations.	PM / Site In-charge
5.7	Reporting any injuries and illness that are not related to work and that could impact their ability to work.	PM / Site In-charge
5.8	Reporting every spill/release to their immediate Supervisor.	Site In-charge/ Site Supervisor
5.9	Records As listed in the various SOPs.	


6. Legal & Statutory requirements

As listed in the various SOPs.


 L&T IDPL	Standard Operating Procedure	Doc. No. 6
		Rev. No. 0
	Contractors' Responsibilities	Date : 14/08/2015
		Page 1 of 5

1. Purpose : To define the Contractors' responsibilities
2. Scope/Applicability : All sites
3. Responsibility : Site in-charge / PM/ Contractors
4. Key Words : the Group (L&T IDPL, its subsidiaries & project companies)
5. Procedure :

S.No.	Activity	Responsibility
5.1	Contractors – EHS Code of Practice : <ul style="list-style-type: none"> The Contracts division at HQ /Cluster offices/ Sites (as applicable) shall ensure that the responsibilities of contractor are defined and conveyed to Contractors / sub-Contractors to ensure that in any site / SPV operations, the Contractors shall sign the EHS Code of practice . It shall be ensured that the contractor has understood and has committed to follow the EHS, Child labour and such other policies of the Group while executing the contract. 	Contract Division / PM
5.2	The Contractors of the Group shall be provided with the SOP Manual and ensure that the details / requirements listed in this SOP and documents are followed by them and also by the sub-contractors engaged by them.	EHS Co-ordinator – HQ
	Contractors' Obligations	
5.3	License: <ul style="list-style-type: none"> The Contractor shall have a valid license indicating the number of workers who can be deployed at site. The personal details of the workers including proof of identity and age shall be available with the contractor and is to be produced on demand. The contractor shall carry out due diligence and check the antecedents of the worker before engaging them. 	Contractors / PM
5.4	Worker Screening <ul style="list-style-type: none"> The Contractors shall ensure that only skilled and trained workers as is required, for the job are deployed. Where required to work on critical equipment, they shall ensure such workers have the valid permits / licenses. The Contractor shall periodically provide training and awareness on the safe practices to be adopted, the policy and practices to be followed while at work and during the stay at labour camp. (Refer to SOP Doc.No.10 Child Labour)	Contractors / PM

 L&T IDPL	Standard Operating Procedure	Doc. No. 6
		Rev. No. 0
	Contractors' Responsibilities	Date : 14/08/2015
		Page 2 of 5


5.5	Wage payment The Contractor shall make payment of wages for the relevant period to those engaged on such dates specified and for such period specified without fail. In case of deferment the same shall be brought to the notice of statutory authorities.	Contractors/ PM						
5.6	Personal Protective Equipment: The contractor shall provide helmets with Identification, appropriate PPEs before allowing any worker in to any project site. (Refer to SOP Doc. No. 16 - Personal Protective Equipment)	Contractors/ PM						
5.7	Amenities in the Workers Colonies: The contractor shall provide all amenities like canteen, rest rooms, first aid, drinking water etc as is required by law to the workers and no worker is made to work beyond the hours permitted.	Contractors/ PM						
5.8	The contractor shall at project sites where workers' colonies are established, comply with all legal requirements such as that in Building and Other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996. (Refer to SOP Doc. No. 11. Health & Hygiene- Labour Camps)	Contractors/ PM						
5.9	Legal Requirements / Compliance: <ul style="list-style-type: none">• The contractor shall maintain a legal register at site listing out applicable legislation for carrying out work in a site and ensure compliance periodically as stated in the Acts / Rules.• The contractor shall obtain all permits/clearances required before carrying out the work and review and update the Statutory Calendar on a regular basis. (Refer to SOP Doc. No. 9 - Legal Compliance)	Contractors/ PM						
5.10	Manual lifting and carrying of excessive weight : As far as possible all material handling shall be done with material handling equipments. When there is need to use manual labour at a construction site no worker lifts by hand or carries any material exceeding in weight as listed below, unless aided by another building worker or device. <table border="1"><tr><td>Person</td><td>Maximum weight in Kgs.</td></tr><tr><td>Adult Men</td><td>55</td></tr><tr><td>Adult Women</td><td>30</td></tr></table>	Person	Maximum weight in Kgs.	Adult Men	55	Adult Women	30	Contractors/ PM
Person	Maximum weight in Kgs.							
Adult Men	55							
Adult Women	30							

 L&T IDPL	Standard Operating Procedure	Doc. No. 6
		Rev. No. 0
	Contractors' Responsibilities	Date : 14/08/2015
		Page 3 of 5

5.11	Accident Reporting: The contractor shall in case of any accident/incident or near misses report the same to the site in charge and to the statutory authorities as required.	Contractors/ PM
5.12	Monitoring Contractors' compliance : The Group shall periodically check (at least once in a month) the compliance of the Contractors with respect to the requirements of EHS, legal through the Monthly Reviews at Cluster / Site and HQ level and plan appropriate action wherever deviations are noticed.	Contractors/ PM
5.13	Records : <ul style="list-style-type: none"> EHS Code of Practice (As per Annexure 1 to this SOP) Records required under the various applicable SOPs 	Contractors/ PM

6. Legal & Statutory requirements


As listed in the SOP Doc. No. 09 - Legal Compliance.

 L&T IDPL	Standard Operating Procedure	Doc. No. 6
		Rev. No. 0
	Contractors' Responsibilities	Date : 14/08/2015
		Page 4 of 5

Annexure 1

EHS CODE OF PRACTICE FOR CONTRACTORS

1. No workmen below 18 years and above 55 years of age shall be engaged for job.
2. All workmen shall be screened before engaging them on the job. Physical fitness of the person to certain jobs like working at height or other dangerous locations to be ensured before engaging the person on work. The final decision rests with the site management to reject any person on the ground of physical fitness.
3. Smoking is strictly prohibited at workplace.
4. Contactors shall ensure adequate supervision at workplace. They shall ensure that all persons working under them shall not create any hazard to self or to co-workers.
5. Nobody is allowed to work without wearing helmet wherever it is warranted. Chinstrap of safety helmet shall be always on.
6. No one is allowed to work at or more than 2m height without wearing safety harness. Lanyard of harness shall be anchored to firm support preferably at shoulder level.
7. No one is allowed to enter into workplace and work at site without adequate foot protection.
8. Usage of eye protection shall be ensured when workmen are engaged for grinding, chipping, welding and gas-cutting. For other jobs, as and when Site In-charge insists eye protection shall be used.
9. All PPE like shoes, helmet, safety harness etc. shall be arranged before starting the job. PPE non-compliance may attract penalty.
10. All excavated pits shall be barricaded and barricade to be maintained till the backfilling is done. Safe approach shall be ensured into every excavation.
11. Adequate illumination at workplace shall be ensured before starting the job at night.
12. All the dangerous moving parts of the portable/fixed machinery being used shall be adequately guarded.
13. Ladders being used at site shall be adequately secured at bottom and top. Ladders shall not be used as work platforms.
14. Erection zones and dismantling zones shall be barricaded and a signalman to be posted to ensure that nobody stands under suspended load.
15. Materials shall not be thrown from heights in any case.
16. Other than the electricians with proper PPE, no one is allowed to carry out electrical connections, repairs on electrical equipment or other job related thereto.
17. Power supply shall be taken through RCCB of 30 mA sensitivity.
18. Insertion of bare wires for tapping power from electrical sockets is prohibited.
19. All major, minor accidents and near misses to be reported to Site In-charge to enable the management to take necessary steps to avoid recurrence.

 L&T IDPL	Standard Operating Procedure	Doc. No. 6
		Rev. No. 0
	Contractors' Responsibilities	Date : 14/08/2015
		Page 5 of 5

20. All scaffoldings/work platforms shall be strong enough to take the expected load. The width of the working platform and fall protection arrangements shall be maintained as per prescribed procedure.
21. All tools and tackles shall be inspected for use. Defects to be reported immediately. No lifting tackle to be used unless it is certified by the concerned Site In-charge.
22. Good housekeeping to be maintained. Passage shall not be blocked with materials. Materials like bricks shall not be stacked more than 1.5m height.
23. Debris, scrap and other materials shall be cleared from the workplace time to time and at the time of closing of work everyday. Scrap bins provided at site shall be used.
24. Contractor shall ensure that all their workmen are following safety practices while travelling in the company's transport and staying at company's accommodations.
25. Adequate firefighting equipment shall be made available at workplace and persons are to be trained in firefighting techniques.
26. All unsafe conditions, unsafe acts reported by Site Supervisors shall be corrected on priority basis.
27. No children shall be allowed to enter the workplace.
28. Female workers are not allowed to work at height and other high-risk areas.
29. Hydra Cranes shall not be engaged for construction activities.
30. Contractors shall ensure that all the living rooms and toilets used by them in workmen colony are maintained clear and hygienic. Food and other wastes shall be disposed off suitably.

I have read all the contents given above/I was explained all the contents given above listing the EHS Code of Practice to be followed and I understand the requirements.

I shall strictly adhere to all the EHS norms in all areas of working. I understand complying with the company EHS norms is mandatory to me.


Date :

Place :

SPV Head/Cluster Head

Contractor
(Authorised Signatory)


Note : Contractors shall be informed of these requirements before awarding work order.
Site In-charge may further incorporate site specific EHS requirements in this document.

 L&T IDPL	Standard Operating Procedure	Doc. No. 7
		Rev. No. 0
	Work Permit System	Date : 14/08/2015
		Page 1 of 8

1. **Purpose** : For safe system of work complying with legal requirements.
2. **Scope/Applicability** : All sites
3. **Responsibility** : Contractors / PM / Site in-charge
4. **Key Words** : **WPS** - Work Permit System - A permit-to-work system is a formal recorded process used to control work which is identified as potentially hazardous. It is also a means of communication between site/installation management, plant supervisors and operators and those who carry out the work.
- Hot work** - Any type of work where heat is used or generated for example Welding, Gas cutting, use of open flames or other sources of fire in fire prone area containing inflammable substances.

5. Procedure :


S.No.	Activity	Responsibility
5.1	<p>WPS should be considered wherever it is intended to carry out any work which may adversely affect the safety of the personnel, environment or plant/equipments.</p> <p>The PM / Site in-charge shall identify the works at site that require a permit to be obtained before the work can be started in the area/equipment based on the potential risk/hazard. Some of the jobs are:</p> <ul style="list-style-type: none"> • Work in close proximity to overhead power lines and telecommunication cables • Work at height / Hot work • Excavations-where underground services may be located • Work with heavy moving machinery /Working on electrical equipment. • Working in areas where flammable/toxic materials can come into contact / Working in confined space 	Contractors / PM/ Site in-charge
5.2	The Contractors / PM / Site in-charge shall communicate to all including contractors/sub contractors that work can be started only after obtaining permit to work from authorized person for works that require a permit.	Contractors / PM/ Site in-charge
5.3	Each site shall maintain and exhibit the list of persons authorized to issue work permit and the works that need a permit.	Contractors / PM/ Site in-charge

 L&T IDPL	Standard Operating Procedure	Doc. No. 7
		Rev. No. 0
	Work Permit System	Date : 14/08/2015
		Page 2 of 8

5.4	<p>In order to have effective control the</p> <ul style="list-style-type: none"> WPS should have defined validity which should be renewed each time the work is extended. Specifying the precautions to be taken including the isolation procedure should be detailed in the permit and should be commensurate with the nature of work. Acceptance of WPS should be got from the contractor/work men in charge of the job to confirm that they are aware of the hazard and the precautions to be taken. The permit should be closed on completion of work. It should be ensured that the isolation are restored to its original position. 	Contractors / PM/ Site in-charge
5.5	The contractor and employees are given appropriate training and understanding of the operation of WPS.	Contractors / PM/ Site in-charge
5.6	<p>Records :</p> <ul style="list-style-type: none"> List of persons authorized to issue WPS Confined Space Entry Permit Hot Work Permit Permit to Open Manhole covers / Grills / Guard rails Permit to Work at Height Electrical Work Permit (HT / LT) 	Contractors / PM/ Site in-charge

6. Legal & Statutory requirements

- The Building and Other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996
- The Factories Act, 1946 / Factory Rules of the applicable States

 L&T IDPL	Standard Operating Procedure	Doc. No. 7
		Rev. No. 0
	Work Permit System	Date : 14/08/2015
		Page 3 of 8

SAMPLE

L&T Infrastructure Development Projects Limited

CONFINED SPACE ENTRY PERMIT

To identify safe work practices related to working inside a confined space.

A. The person taking permit (permittee) to fill up :

1. Identity of the confined space :
 2. Location :
 3. Purpose of entry :
 4. Validity of confined space permit :
 From : (Time) _____ (Date) _____
 To : (Time) _____ (Date) _____
 5. Has the Vessel/Equipment/Space been cleaned, purged, Isolated
 6. Have all the electrical/air/hydraulic equipment/drives been disconnected
 7. Have the persons required to enter the confined space been trained in dealing with the specific hazards
 8. PPE provided
 9. Has a rescue team equipped with emergency rescue devices put on Standby
 10. Has 24V hand lamp been provided
 11. Exhaust/fresh air flow fan has been provided
 12. Tests required
 - A. Oxygen Level (19.5% - 23.5%)
 - B. Explosibility (0%)
 - C. Carbon Monoxide Level (50 PPM Max)
 - D. Carbon Dioxide Level (1200 ppm Max)
 - E. Temperature
 - F. Air Flow
 - G. Others
 13. List of authorized persons to work inside a confined space and the Rescue Team (list to be enclosed)
- I have checked the above points and found conditions suitable to undertake the work

YES
YES
YES
YES
YES
YES
YES

 Name of the Permittee
 (Site Engineer)

 Signature

 Designation


B. The person giving permit (Issuing Authority) to fill up

The precautions and safe conditions mentioned above have been verified and the work can be started.

 Name & Signature of
 Issuing authority

 Site In-charge

C. Time _____ Date _____ at which the permit closed & filed


 L&T IDPL	Standard Operating Procedure	Doc. No. 7
		Rev. No. 0
	Work Permit System	Date : 14/08/2015
		Page 4 of 8

Site In-charge

Sight Supervisor

Note : The scope of this permit is limited to entering into confined space. Relevant work permits shall be obtained for carrying out the activities inside the confined space along with this permit.

Source : L&T Transportation Infrastructure – Independent Company

 L&T IDPL	Standard Operating Procedure	Doc. No. 7
		Rev. No. 0
	Work Permit System	Date : 14/08/2015
		Page 5 of 8

SAMPLE

L&T Infrastructure Development Projects Limited

HOT WORK PERMIT

(Hot work would mainly comprise – Welding, Gas-cutting, use of Open Flames or other sources of fire in a fire-prone place containing inflammable substances, explosives &/or other such highly combustible materials susceptible to spontaneous ignition &/or explosion)

A) The person taking permit (permittee) to fill up :

- Exact location where hot work is being planned _____
- Approximate duration of work From : Date : _____ Time _____
To : Date : _____ Time _____

Points to be checked

Sl. No.	Details	Remarks		
		Yes	No	Not Required
1.	Has the area immediately below the work spot, been cleared/removed of oil, grease & waste cotton etc.?			
2.	Has Gas concentration been tested in case there is gas valve/gas line nearby?			
3.	Have fire extinguishers been kept handy at site?			
4.	Has tin sheet/wet gunny bag/fire retardant cloth/sheet been placed to prevent sparks from causing fire?			
5.	Has water hose connection been made for continuous water spray?			
6.	Have all the drain inlets (if any) been closed?			
7.	Any other precautions taken (specify) _____			

The above points have been complied with and conditions rendered safe/hazards innocuous to undertake the hot work.

Name of _____ Signature _____ Designation _____
Permittee (Site Engineer)

B) The person giving permit (issuing authority) to fill up :

After checking all the above precautions the hot work can be carried out in the above area.

Name & Signature of _____


Issuing authority _____

Site In-charge

C) Time _____ Date _____ at which the permit closed & filed

Signature of Site In-charge _____

Hot work permit can be obtained for one shift only & it can be extended for the immediate next shift if the work could not be completed within one shift. In no case the permit is valid more than two shifts. If required fresh Permit has to be obtained again.

 L&T IDPL	Standard Operating Procedure	Doc. No. 7
		Rev. No. 0
	Work Permit System	Date : 14/08/2015
		Page 6 of 8

SAMPLE

L&T Infrastructure Development Projects Limited

PERMIT TO OPEN MANHOLE COVERS / GRILLS / GUARDRAILS

A) To be filled in when required to open manhole covers/grills/guardrails

1. Location of manhole/Grill/Guardrails etc.
2. Permission required to keep manhole cover / grill / guardrails Open

Date : _____ From hrs. _____ to hrs. _____

3. Purpose

4. i) Has the area been fenced/cordoned off? Yes/No
- ii) Have the red flags (red lights at night) been displayed Yes/No
- iii) Has proper illumination been arranged Yes/No

B) To be filled in by Engineer-in-charge/Site-in-charge permitting to open the manhole cover/grill/guardrails after ensuring that safety precautions have been made at the proposed area for opening the cover.


Name : _____ Designation : _____

Signature : _____ Date : _____

C) To be filled in and certified by person who had asked for the permission to open the manhole cover/grill/guardrails stating that the manhole cover/grill/guardrails has been placed back in position properly on _____ (date) at _____ hrs after the work was completed and safety arrangements removed and the area is cleared.

Name : _____ Designation : _____

Signature : _____ Date : _____

 L&T IDPL	Standard Operating Procedure	Doc. No. 7
		Rev. No. 0
	Work Permit System	Date : 14/08/2015
		Page 7 of 8

SAMPLE


L&T Infrastructure Development Projects Limited
PERMIT TO WORK AT HEIGHT

Name of the Project : _____
 Job Number : _____
 Area / Location : _____
 Permit required : From time : _____ To Time : _____
 Name of the performing Agency : _____

Risk Control measures to prevent fall of person	Done	Not Reqd
1. Whether safe access to work place is provided 2. Whether the edge protection provided adequate 3. Is the work area away from the vicinity of moving objects 4. Whether work platform is adequate with respect to strength and dimension. 5. Is the working platform fully boarded 6. Work platforms provided with guard rail 7. Are the workmen screened for working at height? 8. Adequate fall protection arrangement made (static line, double lanyard harness, fall arrestor, safety net)		
Risk Control measures for avoiding fall fo materials		
1. Work at more than one elevation at the same segment is restricted 2. Walkways, aisles & all overhead workplaces cleared of loose material 3. Whether all tools & tackles inspected before use 4. Whether hand tools & handling materials secured against accidental fall? 5. Workmen provided with bag/box to carry bolt, nuts & hand tools 6. Whether area below, where the height work being performed is cordoned and authorised entries are avoided.		
Permit Requested by : Name : _____ Designation : _____ Signature : _____	Issuing Authority : Name : _____ Designation : _____ Signature : _____	
<u>Closing of the Permit</u> Time _____ & Date _____ at which the permit is closed. Name of the Issuing Authority : _____ Designation : _____ Signature : _____		

Note : The applicability of this permit for specific works shall be proposed by the Site In-charge and decided by the Project Manager.

Source : L&T Transportation Infrastructure – Independent Company

 L&T IDPL	Standard Operating Procedure	Doc. No. 7
		Rev. No. 0
	Work Permit System	Date : 14/08/2015
		Page 8 of 8

SAMPLE

L&T Infrastructure Development Projects Limited

ELECTRICAL WORK PERMIT (HT / LT)

Place of work _____

Group _____

Date _____

Name of the person taking shutdown / power block _____

Designation _____

Why shutdown/power block required _____

Apparatus/equipment on which shutdown required _____

Approximate time of shutdown / power block from _____ hrs to _____ hrs

Signature _____
Person taking shutdown

Action taken to make the apparatus safe to work _____

Earthing done _____

Caution tag places at _____

I declare that apparatus/equipment mentioned above is safe to work and shutdown is given and the same will not be made alive till the permit is cancelled in writing by the person taking shutdown.

Name of the person issuing shutdown _____

Signature _____ Designation _____ Date _____ Time _____


I declare that the work has been completed and men & materials have been removed from the place of work and apparatus/equipment is safe for starting

This shutdown is hereby cancelled

Name : _____ Signature _____ Date _____ Time _____


Note : Form should be made available in three copies. Persons taking shutdown should have two copies with him. One copy should be retained for documentation and another copy to be handed over to person giving shutdown after job is completed.

Source : L&T Transportation Infrastructure – Independent Company

 L&T IDPL	Standard Operating Procedure	Doc. No.8
		Rev. No. 0
	Legal Compliance	Date : 14/08/2015
		Page 1 of 11

1. Purpose : For identification of legal requirements and its compliance
2. Scope/Applicability : All sites
3. Responsibility : Contractors / PM/ Site in-charge /EHS Co-ordinator-HQ
4. Key Words : EHS - Environment Health & Safety.
EMP - Environmental Management Plan
EC - Environmental Consent
5. Procedure :

S.No.	Activity	Responsibility
	Identification of applicable Acts & Rules	
5.1	EHS Core group / EHS Co-ordinator along with the Legal dept. identify the legal requirements that cover all the activities of the organization.	EHS Co-ordinator-HQ/ Legal
5.2	Based on the identifications, a master list of all the applicable legal requirements for the activities of the organization covering all sites / SPVs shall be maintained in the form of Legal Register.	Legal / EHS Co-ordinator
5.3	A Statutory Compliance Calendar shall be prepared at the corporate level and sent to all sites / SPVs for monitoring and ensuring compliance like submitting returns to appropriate authorities or renewal of permits, etc. At the sites for any requirement which is not applicable to a site / SPV, a remark not applicable shall be made in the <u>Statutory Calendar with appropriate explanation.</u>	Legal / EHS Co-ordinator- HQ/ EHS Co- ordinators at site
5.4	The Legal Register and Statutory Compliance Calendar are reviewed annually in the months in April / May to identify changes due to any amendments or new rules / laws that are notified and which are applicable to the Group's activities. The relevant updates for each site to be communicated so that the site register can be updated and action for compliance taken.	PM / Site in- charge
	Compliance	
5.5	The EHS Co-ordinator shall send the Legal Register to the sites / SPVs and the same should be available to the Implementing & supervising personal.	EHS Co-ordinator- HQ
5.6	The staff for ensuring compliance at the Sites/SPVs shall be nominated. Periodical Training shall be organized to create awareness on the various statutory requirements and the implications of non-compliance.	EHS Co-ordinator- Site / HR

 L&T IDPL	Standard Operating Procedure	Doc. No.8
		Rev. No. 0
	Legal Compliance	Date : 14/08/2015
		Page 2 of 11


5.7	The compliance as per the calendar shall be monitored on a monthly basis by the sites. For this purpose the staff nominated at each site for monitoring compliance shall initiate action as per the defined timelines for applying with the concerned agencies / authorities for renewals, etc.	PM/ Contractors
5.8	On completion of these activities, EHS Co-ordinators at the sites shall update every month (Monthly Compliance Report) in the EIP.	EHS Co-ordinators – Site /PM
5.9	On complying the requirements, the EHS Co-ordinators at the sites shall ensure that the related records like, permits, consents, licenses, etc., shall be reviewed on receipt and filed in identified files. (Statutory Regulations File).	PM/ Contractors
5.10	Records : <ul style="list-style-type: none"> • Legal Register-Master & Site • Statutory Compliance Calendar • Statutory Regulations File (File with Statutory Permits / licenses/ Approvals/Consent received from various agencies for each site) 	Contractors/ PM / Site in-charge / EHS Co-ordinator – Site

Note : A few samples approvals of Statutory requirements to be complied with are attached for better understanding .

- CCA – Consolidated Consent & Authorization -
Provisional Consent Order (CCA) Consent No.AWH-16480 valid upto 02/11/2019 . This is a consent for L&T Halol Shamlaji Tollway Ltd. (TP 2) Km 409+302 operations
- CTE – Consent to Establish (NOC) – GPCB/GDR/TECH/NOC-220/ID-42059/225
(based on this NOC, CCA stated above is given by GPCB)
- For DG Set Operations at above location, the CCA is Consent order AWH-15709 dt. 23/06/2014


6. Legal & Statutory requirements

- The Building and Other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 / Rules 1998
- The child labor (Prohibition and Regulation) Act, 1986
- The Minimum Wages Act, 1948
- The Workmen's Compensation Act, 1923

 L&T IDPL	Standard Operating Procedure	Doc. No.8
		Rev. No. 0
	Legal Compliance	Date : 14/08/2015
		Page 3 of 11'

- The Contract Labour (Regulation and Abolition) Act 1970 & Rules
- The Personal Injuries (Compensation Insurance) Act, 1963
- The Employers' Liability Act, 1938
- Public Liability Insurance Act, 1991 & Rules 1992
- The Equal Remuneration Act, 1976
- The Maternity Benefit Act, 1961
- The Bonded Labour System (Abolition) Act, 1976
- The Environment (Protection) Act, 1986 / 1991 & Rules 1986/2000
- The Water (Prevention and Control of Pollution) Act 1977 & Rules 1978
- The Air (Prevention and Control of Pollution) Act 1981 & Rules 1982 / 1983
- The Hazardous Wastes (Management and Handling and Transboundary movement) Rules 1989 / 2008
- Manufacture, Storage and Import of Hazardous Chemical Rules, 1989 / 2000.
- Chemical Accidents (Emergency Planning, Preparedness and Response) Amendment Rules, 1996
- Explosives Act, 1884 / 1983 & Explosives Rules-2008
- Gas Cylinder Rules-2004
- Petroleum Act-1934 The Petroleum Rules-2002.
- Central Motor Vehicle Act 1988 / Rules 1989
- The Factories Act 1946 / 1989 / 2001 & State Factory Rules
- The Static and Mobile Pressure Vessels (Unfired) Rules, including Amendment Rules, 1981
- The Bio- Medical Waste (Management and Handling) Rules, 1988.
- The Noise (Regulation and Control) Rules, 2005.
- Energy Conservation Act, 2001, 2010 (Amendment)
- The Indian Electricity Act 2003 / Rules 1956
- Battery Management and Handling Rules, 2001.
- Atomic Energy (Factories) Rules, 1996.
- Emission Standards for New Diesel Engine (upto 800 KW for Genset Applications).
- Supreme Court Order – Wild Life Protection Act, 1972.
- Inter-State Migrant Workmen Act, 1979.

Note: The latest amendments to be checked and adopted for all Legal & Statutory requirements

 L&T IDPL	Standard Operating Procedure	Doc. No.8
		Rev. No. 0
	Legal Compliance	Date : 14/08/2015
		Page 5 of 11

REGIONAL OFFICE
GODHRA

GUJARAT POLLUTION CONTROL BOARD
20 Haldar Society, Opp. D.S.P. Bungalow, Civil Lines Road, Godhra-388001, Dist: Panchmahal
PHONE NO. (02672) 245869, 245991, FAX NO. (02672) 245869



"Consent to Establish" (NOC)

By R.P.A.D.

No:GPCB/GDR/TECH/NOC-220/ID-42059/225 Date: 14/08/2015

To,
M/s. L & T Halol Shamlaji Tollway Ltd. (Tp 2) Km 409+372 (42062),
Village: Gamanbaria na Muvada,
Gamanbaria na Muvada - 389210,
Ta.: shehera, DIST: Panchmahals.

SUB: Consent to Establish under Section 25 of Water Act 1974, Section 21 of Air Act 1981 and EP Act 1986.

REF: Your online CTE application No. 79178 dated 24/04/2014.

Sir,

Without prejudice to the power of this Board under the Water (Prevention and Control of Pollution) Act-1974 and the Environment (Protection) Act-1986 and without reducing your responsibilities under the said Acts in any way this is to inform you that this Board grants Consent to Establish (NOC) for setting up of an industrial plant/activities at Village: Gamanbaria na Muvada, Gamanbaria na Muvada - 389210, Ta.: Shehera, DIST: Panchmahals for the manufacturing of the following items. The Consent No: CTE-15451 and validity period of the order up to dated:- 21/05/2019.


Sr. No.	Product
1.	L & T Halol Shamlaji Tollway Ltd. (Tp 2) Km 409+372

SUBJECT TO THE FOLLOWING SPECIFIC CONDITIONS:

1. You shall have to obtain the Environmental Clearance from the relevant authority is at any stage project activity is covered under the EIA notification dated 14/9/2009.

CONDITION UNDER WATER ACT 1974:

1. There shall be no generation of the industrial effluent from the manufacturing process and other ancillary industrial operations.
2. The quantity of the domestic waste water (sewage) shall not exceed 5.00 KL/day.
3. Sewage shall be disposed of through Septic tank/ soak pit system.

 L&T IDPL	Standard Operating Procedure	Doc. No.8
		Rev. No. 0
	Legal Compliance	Date : 14/08/2015
		Page 6 of 11

CONDITION UNDER AIR ACT 1981:

4. Following shall be used as a fuel in D.G. Set.

Sr. No.	Fuel	Quantity
1.	H.S.D	13.50 liters/hr. for each

- 4.1 The flue gas emission through stack shall conform to the following standards.

Sr. No.	Stack attached to	Stack height	APCM	Parameter	Permissible Limit
1.	D.G. Sets 160KVA (02 Nos.)	05 meters	N.A.	Particulate Matter SO _x NO _x	150 mg / Nm ³ 100 ppm 50 ppm

5. Ambient air quality within the premise of the industry shall conform to the following standards:-

PARAMETER	PERMISSIBLE LIMIT
Particulate Matter (size less than 10µm) or PM10, µg/m ³	60 Annual & 100; 24 hours
Particulate Matter (size less than 2.5 µm) or PM2.5, µg/m ³	40 Annual & 60; 24 hours
Sulphur Dioxide (SO ₂), µg/m ³	50 Annual & 80; 24 hours
Nitrogen Dioxide (NO ₂), µg/m ³	40 Annual & 80; 24 hours


6. All measures for the control of environment pollution shall be provided before commencing production.

CONDITIONS UNDER HAZARDOUS WASTE:

7. Applicant shall have to comply with provisions of Hazardous Waste (Management Handling and Trans boundary Movement) Rules 2008, as amended from time to time.
8. The applicant shall provide temporary storage facilities for each type of Haz. Waste as per Hazardous Waste (Management Handling and Trans boundary Movement) Rules 2008, as amended from time to time.


GENERAL CONDITION:

9. Adequate plantation shall be carried out all along the periphery of the industrial premises in such a way that the density of plantation is at least 1000 trees per acres of land and green belt of 10 meters width is developed.
10. The applicant shall have to submit the returns in the prescribed form regarding water consumption and shall have to make payment of water cess to the Board under the Water Cess Act 1977.
11. In case of change of ownership/management, the name and address of the new owners/partners/directors/proprietor should immediately be intimated to the Board.
12. The applicant shall however, not without the prior consent to operate of the Board bring into use any new or altered outlet for the discharge of effluent or gaseous emission or sewage waste from the proposed industrial plant. The applicant is required to make applications to this Board for this purpose in the prescribed forms under the provisions of the Water Act-1974, the Air Act-1981 and the Environment (Protection) Act-1986.
13. The applicant also comply with the general condition as per Annexure-1 attached herewith (No. 1 to 38) (whichever applicable).
14. The concentration of noise in ambient air within the premises of industrial unit shall not exceed following levels:
- Between 6 A.M. and 10 P.M.: 75 dB (A)
Between 10 A.M. and 6 P.M.: 70 dB (A)
15. Applicant is required to comply with the manufacturing, Storage and Import of Hazardous Chemicals Rules-1989 framed under the Environment (Protection) Act-1986.

 L&T IDPL	Standard Operating Procedure	Doc. No.8
		Rev. No. 0
	Legal Compliance	Date : 14/08/2015
		Page 7 of 11


16. If it is established by any competent authority that the damage is caused due to the industrial activities to any person or his property, in that case you are obliged to pay the compensation as determined by the competent authority.
17. In case of any unauthorized discharge outside the factory premises, it would be considered as violation under the Water Act-1974.


For and on behalf of
GUJARAT POLLUTION CONTROL BOARD


(R.P. GUPTA)
REGIONAL OFFICER

Issued To,
M/s. M/s. L & T Halol Shamlaji Tollway Ltd. (Tp 2) Km 409+372 (42062),
Village:- Gamanbaria na Muvada,
Gamanbaria na Muvada - 389210,
Ta.:- shehera, DIST:- Panchmahals.


14/8/14

 Manoj - NA

 L&T IDPL	Standard Operating Procedure	Doc. No.8
		Rev. No. 0
	Legal Compliance	Date : 14/08/2015
		Page 8 of 11

GUJARAT POLLUTION CONTROL BOARD

REGIONAL OFFICE : HIMMATNAGAR



By: R.P.A.D.

In exercise of the power conferred under section-25 of the Water (Prevention and Control of Pollution) Act-1974, under section-21 of the Air (Prevention and Control of Pollution) Act-1981 and Authorization under rule 5(4) of the Hazardous Waste (Management Handling and Transboundary Movement) Rules'2008, framed under the E (P) Act-1986.

And whereas Board has received on line consolidated application dated 023-06-2014 for the consolidated consent and authorization (CC & A) of this Board under the provisions / rules of the aforesaid Acts Consent & Authorization is hereby granted as under.

CONSENT AND AUTHORISATION:

(Under the provisions / rules of the aforesaid environmental acts)

To,
M/s. L & T Halol Shamlaji Tollway Ltd.,
Plot No- TP 2, KM 463+000,
Dharikhanta,
Ta. Malpur,
Dist. Aravalli- 362011.

1. Consent Order No. : AWH-15709, Date of Issue 23/08/2014
The consents shall be valid up to 22-08-2019 for DG Set 2 NOs. of 160 KVA.

Specific Condition: -

- You shall not carry out any production and manufacturing activity at this premise without CTE/CCA of the Board for the same.

2.0 CONDITIONS UNDER WATER ACT 1974:

- 2.1. There shall be no generation of waste water from the manufacturing process and other ancillary industrial operations.
- 2.2. The quantity of Sewage effluent shall not exceed 5000 Lit/day.
- 2.3. The domestic waste water (sewage) shall be disposed into soak pit through septic tank.


3. CONDITIONS UNDER THE AIR ACT:

- 3.1. The following shall be used as fuel in DG Set.

Sr.No.	Fuel	Quantity
1	HSD	13 lit/Hr.

- 3.2. The applicant shall install & operate air pollution control system in order to achieve norms prescribed below.

- 3.3. The flue gas emission through stack attached to DG Set shall conform to the following standards:


 L&T IDPL	Standard Operating Procedure	Doc. No.8
		Rev. No. 0
	Legal Compliance	Date : 14/08/2015
		Page 9 of 11

Stack No.	Stack attached to	Stack height in Meter	Parameter	Permissible Limit
1	D. G. Set 2 nos. (160 KVA)	05 Mtr.	PARTICULATE MATTER	150 mg/NM3
			SO2	100 ppm
			NOx	50 ppm

- 3.4 There shall be no process emission from the manufacturing process and other ancillary operations.
- 3.5 The concentration of the following parameters in the ambient air within the premises of the industry shall not exceed the limits specified hereunder.

PARAMETERS			PERMISSIBLE LIMIT Annual	PERMISSIBLE LIMIT 24 Hrs Average
Particulate Matter (PM10)	10		60 Microgram/M ³	100 Microgram/M ³
PM 2.5 (PM 2.5)			40 Microgram/M ³	60 Microgram/M ³
SO ₂			50 Microgram/M ³	80 Microgram/M ³
NO _x			40 Microgram/M ³	80 Microgram/M ³

- 3.6 The applicant shall operate industrial plant / air pollution control equipment very efficiently and continuously so that the gaseous emission always conforms to the standards specified in condition no. 3.3 & 3.5 above.
- 3.7 The consent to operate the industrial plant shall lapse if at any time the parameters of the gaseous emission are not within the tolerance limits specified in the condition no. 3.3 & 3.5 above.
- 3.8 The industry shall take adequate measures for control of noise levels from its own sources within the premises so as to maintain ambient air quality standards in respect of noise to less than 75 dB(A) during day time and 70 dB (A) during night time. Daytime is reckoned in between 6 a.m. and 10 p.m. and night-time is reckoned between 10 p.m. and 6 a.m.
- 3.9 The applicant shall at his own cost get samples of ambient air quality collected & analyzed from an approved laboratory once in three months for the parameters indicated in condition No. 3.5 and shall submit in duplicate the report there of to the Board by the 10th of the succeeding month. The applicant shall also maintain records of the analytical results properly and shall keep these records/charts open for inspection.
- 4.0 **GENERAL CONDITIONS:**
- 4.1 Any change in personnel, equipment or working conditions as mentioned in the consents form/order should immediately be intimated to this Board.
- 4.2 Whenever due to accident or other unforeseen act or ever, such emissions occur or is apprehended to occur in excess of standards laid down such information shall be forthwith reported to Board, concerned Police Station, Office of Directorate of Health Service, Department of Explosives, Inspectorate of Factories and local body. In case of failure of pollution control equipments, the production process connected to it shall

 L&T IDPL	Standard Operating Procedure	Doc. No.8
		Rev. No. 0
	Legal Compliance	Date : 14/08/2015
		Page 10 of 11

GUJARAT POLLUTION CONTROL BOARD

REGIONAL OFFICE : HIMMATNAGAR




be stopped. Remedial actions/measures shall be implemented immediately to bring entire situation normal.

- 4.3 The Environmental Management unit/cell shall be set up to ensure implementation and monitoring of environmental safeguards and other conditions stipulated by statutory authorities. The Environmental Management cell/unit shall directly report to the Chief Executive of the organization and shall work as a focal point for internalizing environmental issues. These cells/unit shall also coordinate the exercise of environmental audit of environmental statements.
- 4.4 The environmental audit shall be carried out yearly and the environmental statements pertaining to the activities for the year ending on 31st March shall be submitted to the State Board latest by 30th September every year.
- 4.5 The Board reserves the right to review and/or revoke the consent and/or make variations in the conditions, which the Board deems, fit in accordance with Section 27 of the Act.
- 4.6 In case of change of ownership/management the name and address of the new owners/partners/directors/proprietor should be immediately be intimated to the Board.
- 5.0. **AUTHORISATION FOR THE MANAGEMENT & HANDLING OF HAZARDOUS WASTES Form-2 (See rule 6 (4).**
- 5.1 M/s. LBT Hafol Shamaji Toll way Ltd., is hereby granted an Authorization to operate facility for following hazardous wastes on the premises situated at Plot No. TP-2, KM 453+000, Dharikhanta, Ta. Malpur, Dist-Aravalli-362011.

Sr. No	Waste Description	Quantity	Category	Facility
1	Used Oil	0.100 MT/Year	5.1	Collection, Storage, Transportation and disposal by selling to Registered Re-refiners.

- 6.2 The authorization is granted to operate a facility for collection, storage and Disposal to Registered Re-refiners.
- 6.3 The authorization shall be in force for a period up to 22-06-2019.
- 6.4 The authorization is subject to the conditions stated below and such other conditions as may be specified in the rules from time to time under the Environment (Protection) Act-1986.
- 6.0 **TERMS AND CONDITIONS OF AUTHORISATION**
- 6.1 The applicant shall comply with the provisions of the Environment (Protection) Act-1986 and the rules made there under.
- 6.2 The authorization shall be produced for inspection at the request of an officer authorized by the Gujarat Pollution Control Board.
- 6.3 The persons authorized shall not rent, lend, sell, and transfer of otherwise transport the hazardous wastes without obtaining prior permission of the Gujarat Pollution Control Board.
- 6.4 Any unauthorized change in personnel, equipment or working conditions as mentioned in the authorization order by the persons authorized shall constitute a breach of this authorization.
- 6.5 It is the duty of the authorized person to take prior permission of the Gujarat Pollution Control Board to close down the facility.

33/34, "Adarsh Bungalows", Polytechnic Road, Motipura, Himmatnagar-383 001, Dist. Sabarkantha,
Phone : (02772) 229272, 229273 Website : www.gpcb.gov.in

 L&T IDPL	Standard Operating Procedure	Doc. No.8
		Rev. No. 0
	Legal Compliance	Date : 14/08/2015
		Page 11 of 11

- 6.6 An application for the renewal of an authorization shall be made as laid down in rule 5 (6) (i).
- 6.7 Industry shall submit annual report within 15 days and subsequently by 31st January every year.
- 6.8 Industry shall have to manage waste oil, discarded containers etc as per the Rules 2008 and shall apply Authorization/submits details for all the applicable waste as per the Rules 2008 within 15 days.
7. General Conditions:
- 7.1 The waste generator shall be totally responsible for (i.e. collection, storage, encapsulation, incineration, treatment, transportation and ultimate disposal) of the wastes generated.
- 7.2 Records of waste generation, its management and annual return shall be submitted to Gujarat Pollution Control Board in Form - 4 by 31st January of every year.
- 7.3 In case of any accident, details of the same shall be submitted in Form - 5 to Gujarat Pollution Control Board.
- 7.4 As per "Public Liability Insurance Act - 91" company shall get insurance Policy, if applicable.
- 7.5 Empty drums and containers of toxic and hazardous material shall be treated as per guideline published for "Management & Handling of discarded containers". Records of the same shall be maintained and forwarded to Gujarat Pollution Control Board regularly.
- 7.6 In no case any kind of hazardous waste shall be imported without prior approval of appropriate authority.
- 7.7 In case of transport of hazardous wastes to a facility for (i.e. treatment, storage and disposal) existing in a State other than the State where hazardous wastes are generated, the occupier shall obtain 'No Objection Certificate' from the State Pollution Control Board or Committee of the concerned State or Union territory Administration where the facility exists.
- 7.8 Unit shall take all concrete measures to show tangible results in waste generation, reduction, avoidance, reuse and recycle. Action taken in this regards shall be submitted within three months and also along with Form-4.
- 7.9 Industry shall have to display the relevant information with regard to hazardous waste as indicated in the Court Order in W.P. No.667 of 1995-dated 14th October-2003.
- 7.10 Industry shall have to display on-line data outside the main factory gate with regard to quantity and nature of hazardous chemicals being handled in the plant, including waste water and air emissions and solid hazardous wastes generated within the factory premises.

For and on behalf of
Gujarat Pollution Control Board

(B.S. SUTREJA)
REGIONAL OFFICER

NO: GPCB/RO-SK/CCA-893/10-42496/ 221

ISSUED TO:

M/s. L & T Hatol Shantaji Tollway Ltd.,
Plot No- TP 2, KM 453+000,
Dharikhanta,
Ta. Malpur,
Dist- Aravalli- 382011


Copy to:

(1) The Member Secretary, GPCB, Gandhinagar (Kind Attention: Shri S.H.VEGDA (S.EE)

— For information please.

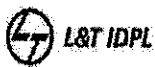
(2) Office copy of R.O., Himatnagar

NO. 713		21/08/14		Dinekh	
---------	--	----------	--	--------	--

 L&T IDPL	Standard Operating Procedure	Doc. No. 9
		Rev. No. 0
	Child Labour	Date : 14/08/2015
		Page 1 of 4

1. Purpose : To Screen workers to identify and eliminate child labour
2. Scope/Applicability: All sites
3. Responsibility : PM /Site in-charges /Contractors
4. Key Words : Child – As per Indian law is one who has not completed 14 years of age
5. Procedure :


S.No.	Activity	Responsibility
5.1	Child Labour Policy: The Group has adopted a policy towards elimination of child labour in all its activities. The Group shall not engage or permit its contractors/sub-contractors to deploy child labour in any of its activities for any duration. This shall be communicated to all employees, suppliers/contractors and shall be implemented at all locations, viz., in the office, all project sites.	HQ
5.2	EHS Code of practice: An undertaking shall be taken from contractors/sub-contractors/service providers that they will not use child labour in their activities and confirm legal compliance by signing the EHS Code of Practice (Ref. SOP Doc. No.7 – Contractors' Responsibility, Annexure I)	PM / Contractor
5.3	Screening of workers : The Contractors undertaking work, shall screen all workers whom they are going to engage to ensure that they are not falling under the category of child labour. The Contractors have to provide to the site Security / Site in charge list of workers to be engaged along with the details of age and date of birth and the reference document for the same. Note : The Contractors shall maintain record of the age proof of all workers engaged and this should be produced for verification whenever called for. (File with Age Proofs of workers)	PM /Contractor
5.4	Monitoring of Child Labour : The Group personnel shall always monitor if any child labour is engaged. In case of any doubt, the evidence for date of birth may be sought. If not available or the authenticity is doubted then, medical examination of the child to determine the age of the child by the authorized medical examiner to be done.	PM /Contractor
5.5	If any child is found doing any work on behalf of any contractor, the child should be asked to stop work immediately and the child moved to safe custody.	PM /Contractor

	Standard Operating Procedure	Doc. No. 9
		Rev. No. 0
	Child Labour	Date : 14/08/2015
		Page 2 of 4

5.6	The Contractor/those responsible for the deployment of the child should be called and investigation done and appropriate action as per terms of contract shall be initiated within reasonable time.	PM /Contractor
5.7	The Contractor should be counseled and advised to re-unite the child with its parents.	PM / Contractor
5.8	Records : <ul style="list-style-type: none"> • Proforma for Screening Workmen engaged by Contractors • File with Age Proofs of workers. 	

6. Legal & Statutory requirements

- The Child Labor (Prohibition and Regulation) Act, 1986.

 L&T IDPL	Standard Operating Procedure	Doc. No. 9
		Rev. No. 0
	Child Labour	Date : 14/08/2015
		Page 3 of 4

L&T Infrastructure Development Projects Limited

PROFORMA FOR SCREENING WORKMEN ENGAGED BY CONTRACTORS

Name of the Contractor : _____

Full Name of the Worker : _____

Father/Husband's Name : _____

Permanent Address : _____

Present Address : _____

Date of Birth * : _____ Age _____ Years _____

Married/Single/Widow/Widower _____ Number of Children _____

Mother Tongue _____ Other languages known _____

In case of emergency, person to be contacted _____
(with address and telephone number, if any)

Signature or Left Hand Thumb impression
of the workmen for identification

Any other identification mark :

Weight : _____ Height : _____ Vision : _____

Education :

Examination Passed	Year	School/Board

Previous work experience :

Sl.No.	Name of the Contractor/Organisation	Project	Category	Period	Salary/Wage Rate
1					
2					

Referred by / References :

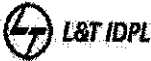
Screened by me. Certificates/details verified / not verified.

Referred to Mr. _____ for _____ on the job

Suitable for employment as _____

Site In-charge / Project Manager

Source : L&T Transportation Infrastructure – Independent Company

	Standard Operating Procedure	Doc. No. 9
	Child Labour	Rev. No. 0
		Date : 14/08/2015
		Page 4 of 4

FORM XV

[See rule 253 (a)]

The Gujarat Building and other Construction Workers' (Regulation of employment and conditions of service) Rules, 2003

Certificate of Medical Examination

1. Certificate Serial No. _____
Date _____
2. Name _____
Identification marks : (1) _____
(2) _____
3. Father's name _____
4. Sex _____
5. Residence _____ son/daughter of _____

6. Date of birth, if available _____
and/or certificate age _____
7. Physical Fitness _____

I hereby certify that I have personally examined (name) _____
son/daughter/wife of _____ residing at _____
who is desirous of being employed in building and construction work and that
his/her age as nearly as can be ascertained from my examination is _____
years and that he/she is fit for employment in _____
as an adult/adolescent.


8. Reason for :
(1) Refusal of certificate _____

(2) Certificate being revoked _____

Signature/ Left hand Thumb
Impression of building worker


Signature with Seal
Medical Inspector/C.M.O.

- Note - 1. Exact details of cause of physical disability should be clearly stated.
2. Functional/productive abilities should also be stated if disability is stated.


 L&T IDPL	Standard Operating Procedure	Doc. No. 10
		Rev. No. 0
	Health & Hygiene - Labour Camps	Date : 14/08/2015
		Page 1 of 6

1. **Purpose** : For maintaining health and hygiene in Labour Camp
2. **Scope/Applicability** : All sites
3. **Responsibility** : Contractors / PM / Site In-charge
4. **Key Words** :
5. **Procedure** :

S.No.	Activity	Responsibility
5.1	Health <ul style="list-style-type: none"> The PM / Site in-charge shall arrange for health check up of all inmates of labour camps periodically to ascertain medical fitness of all who are permitted to stay in labour camps particularly with respect to contagious diseases. The details of the check ups are recorded in the Health Check Up Register. 	Contractors / PM/ Site In-charge
5.2	Health campaigns to create awareness on health and other contagious diseases for workers shall be arranged at the labour camps once in a year.	Contractors / PM/ Site In-charge
5.3	Drinking Water : Safe and clean drinking water shall be provided in clean containers. Periodically the water supplied shall be tested in approved labs to ensure they meet the IS Standards. A signage "Drinking Water" shall be displayed where the drinking water is kept. Where water is procured in cans, it shall be ensured that the water meets IS Standards and Specifications. The drinking water dispensers shall not be kept near toilets / bath rooms.	Contractors / PM/ Site In-charge
5.4	Toilets & bath rooms There should be adequate number of functional gents / ladies toilets based on the number of persons residing in the camps The toilets must be always functional and have proper ventilation systems.	Contractors / PM/ Site In-charge
5.5	There should be sufficient spittoons and dustbins kept at multiple locations.	Contractors / PM/ Site In-charge.

 L&T IDPL	Standard Operating Procedure	Doc. No. 10
		Rev. No. 0
	Health & Hygiene - Labour Camps	Date : 14/08/2015
		Page 2 of 6


5.6	Soak Pits <ul style="list-style-type: none"> The waste water from the bath-rooms and toilets are to be properly drained so that they do not pose a health hazard for the inhabitants and the discharge complies with the local rules and regulations; Soak pits shall be built to collect sewerage water; and In no case the soak pit to be made near the underground tube well or the open well. 	Contractors / PM/ Site In-charge
5.7	Cooking Facilities: The cooking facility/dining area (canteen/kitchen) should be located away from toilets. The waste generated should be disposed of complying with the local rules and in such a manner that it does not pose a health risk.	Contractors / PM/ Site In-charge
5.8	The cooking facility and toilets should be cleaned at adequate intervals every day to provide a hygienic atmosphere.	Contractors / PM/ Site In-charge
5.9	Maintenance The Premises / bath rooms and toilets be cleaned regularly.	Contractors / PM/ Site In-charge
5.10	Inspection The labour camps and the associated facilities should be inspected at least once in a month and deficiencies noticed recorded in the work men camp inspection form. This should be addressed and closed during the subsequent inspections.	Contractors / PM/ Site In-charge
5.11	The facilities listed above shall be inspected / daily and at other scheduled timelines and observations shall be recorded by Site in-charge.	Contractors / PM/ Site In-charge
5.12	The Actions taken shall be reviewed by the Contractors/PM on a weekly basis or whenever any complaint is reported and Mitigation Plan shall be devised.	Contractors / PM/ Site In-charge

 L&T IDPL	Standard Operating Procedure	Doc. No. 10
		Rev. No. 0
	Health & Hygiene - Labour Camps	Date : 14/08/2015
		Page 3 of 6

5.13	Records : <ul style="list-style-type: none"> • Health Register (Form XVI) • Workmen Camp / Labour camp Inspection report • Water Analysis Reports 	Contractors / PM/ Site In-charge
------	--	-------------------------------------

6. Legal & Statutory requirements

- The Building and Other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 & Rules 1998.
- Inter-state Migrant Workmen (Regulation of Employment and Conditions of Services) Act, 1979

 L&T IDPL	Standard Operating Procedure	Doc. No. 10
		Rev. No. 0
	Health & Hygiene - Labour Camps	Date : 14/08/2015
		Page 4 of 6

FORM XVI

[See rule 253 (d)]

The Gujarat Building and other Construction Workers' (Regulation of employment and conditions of service) central rules, 2003
Health Register

(In respect of persons employed in Building and other construction work involving hazardous processes)

Name of the Construction Medical Officer/Medical Inspector:

(a) Mr. _____ From _____ to _____

(b) Mr. _____ From _____ to _____

(c) Mr. _____ From _____ to _____


Sl. No	Work No.	Name of building worker	Sex	Age (last birthday)	Date of employment of present work	Date of leaving or transfer to other work
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1.						
2.						
3.						
4.						
5.						

Reason for leaving, transfer or discharge	Nature of job or occupation	Raw Material or by-product handled	Date of medical examination by certifying Surgeon Medical Inspector/ CMO	Result of medical examination	If suspended from work, state period of suspension with detailed reasons
(8)	(9)	(10)	(11)	(12)	(13)
1.					
2.					
3.					
4.					
5.					

Certified fit to resume duty on with signature of Medical Inspector/CMO	If certificate of unfitness or suspension issued to worker
(14)	(15)
1.	
2.	
3.	

Signature with date of Medical Inspector/CMO

- Note : (i) Column (8) - Detailed summary of reasons for transfer or discharge should be stated
(ii) Column (12) - should be expressed as fit/unfit/suspended.

 L&T IDPL	Standard Operating Procedure	Doc. No. 10
		Rev. No. 0
	Health & Hygiene - Labour Camps	Date : 14/08/2015
		Page 5 of 6


SAMPLE

L&T Infrastructure Development Projects Limited

WORKMEN CAMP INSPECTION REPORT

Name of the Project :
Job No. :
Inspected By :
Date & Time :

SL. NO.	POINTS	OBSERVATION	MEASURES
ACCESS & EGRESS			
1.	Are the entry roads/walkways/passages to camp kept clear?		
2.	Are the walkways & roads are even and free from water logging?		
3.	Is the entry inside workmen camp restricted?		
GENERAL			
1.	Are dustbin/garbage bins allocated for each & every colony?		
2.	Is the garbage being disposed off on regular basis?		
3.	Are the drinking water facilities adequate in the Workmen camp?		
4.	Is there any emergency communication system established?		
5.	Is the Workmen camp constructed with Non-Fire Hazard Material?		
6.	Is the workmen camp constructed with materials, which are not readily flammable?		
7.	Are Fire Extinguishers & Fire Buckets available and maintained regularly		
8.	Are locations of Fire Extinguishers & Fire Buckets listed out & displayed?		
9.	Are First-aid facilities available?		
10.	Whether disinfection activities carried out on weekly basis?		
LIVING AREA			
1.	Whether Cement flooring provided?		
2.	Condition of the Slide Walls / Roof Sheet		
3.	Is shelter strong enough to withstand wind pressure?		
4.	Whether the electrical connections provided are safe?		
5.	Is the ventilation of the rooms adequate?		
6.	Is the Illumination of the rooms adequate?		
7.	Are the doors and windows in good condition?		
8.	Is the general hygienic condition of the rooms adequate?		
KITCHEN			
1.	Are kitchens kept clean and tidy?		
2.	Is the water supply adequate for cooking?		
3.	Is the garbage of kitchen being disposed off every day?		

 L&T IDPL	Standard Operating Procedure	Doc. No. 10
		Rev. No. 0
	Health & Hygiene - Labour Camps	Date : 14/08/2015
		Page 6 of 6

4.	Are the utensils are being cleaned on regular basis?		
5.	Are gas cylinders & other flammable materials kept in safe area (away from fire)?		
6.	Are suitable regulator, connecting tube & connections with the cylinder O.K		
7.	Are fire extinguishers kept outside kitchen?		
UTILITIES AREA			
1.	Is the Wash area – Water tanks constructed as per the Design Drawing?		
2.	Are adequate toilets available?		
3.	Are the toilets being cleaned regularly?		
4.	Is there adequate water facility available for toilet and bath?		
5.	Are the septic tanks and soak pit working properly?		
6.	Is area around bathrooms cleaned & kept dry and non slippery?		
7.	Is proper drainage provided?		
8.	Is drinking water available?		
9.	Is water tank tap not leaking?		
10.	Is water tank cleaned regularly?		
Any Other Information			

Next Inspection Due date :

Details of the Camp:

- | | | |
|---|---|-------|
| 1. No. of workmen residing in the labour camp | : | _____ |
| 2. Name of the Visiting Doctor | : | _____ |
| 3. Frequency & Timing of Doctors Visit | : | _____ |

Site In-charge

Industrial Relations Officer /
Workmen Camp In Charge


Name :

Name :

Signature :

Signature


Source : L&T Transportation Infrastructure – Independent Company

 L&T IDPL	Standard Operating Procedure	Doc. No. 11
		Rev. No.
	FIRST AID	Date : 14/08/2015
		Page 1 of 6


1. **Purpose** : To provide preliminary preventive medical help before reaching to Doctor
2. **Scope/Applicability** : All Offices and Sites
3. **Responsibility** : Contractors / PM/ Site in-charge
4. **Key Words** : **First Aider** : A trained person for providing First Aid
CPR: Cardio Pulmonary Resuscitation

5. **Procedure** :

S.No.	Activity	Responsibility
5.1	First Aider: <ul style="list-style-type: none"> Each Project office of the SPV and sites offices of the contractors shall have staff trained in 'First Aid'. The training should have been provided by accredited agencies. A list of First Aiders shall be maintained and be displayed prominently in the site / office / all Departments and Security cabin. 	Contractor /PM
5.2	Emergency Contact Nos: Important telephone numbers of hospitals / ambulance / fire brigade / local police should also be displayed at the above locations near the telephone.	Contractor /PM
5.3	The above lists shall be reviewed and updated by the EHS Co-ordinator at site periodically.	EHS Co-ordinator - Site
5.4	Training : The training shall be provided but not limited to relevant areas like: breathing problem / cuts and wounds/ burns / suffocation / /fracture / chest pain (CPR), etc.	Contractor /PM
5.5	CPR procedure display charts can also be displayed at two or three locations including Security cabins.	Contractor / PM
	First Aid Box / Kit :	
5.6	The Contractor shall ensure at a construction site, that <ul style="list-style-type: none"> sufficient number of first-aid boxes are provided ; every first-aid box is distinctly marked "First-Aid" and is equipped with the articles specified the Acts / Rules ; nothing except appliances or requisites for first-aid is kept in a first-aid box and is so kept as to protect it against contamination by dust or other foreign matter and against penetration of moisture; In addition in the First Aid Kit, medicine for snake bite shall also be provided in areas away from Town. 	Contractor / PM / EHS Co-ordinator at site

 L&T IDPL	Standard Operating Procedure	Doc. No. 11
		Rev. No.
	FIRST AID	Date : 14/08/2015
		Page 2 of 6

5.7	In consultation with a Registered Medical Practitioner, a list of emergency medicines / first aid materials shall be prepared and maintained as per BOCW Rule 261 (attached as Annexure A)	Contractor /PM Admin In-charge
5.8	One of the trained first Aider and Admin Department shall be responsible for periodically checking the contents of the First Aid box and replenishing the required items.	Contractor /PM Admin In-charge
5.9	<ul style="list-style-type: none"> List of medicines in the box shall be displayed inside or on the box. The first Aider shall be responsible to check for the medicine's expiry date and withdraw such medicines which are very close to the expiry dates. Medicines issued from the First Aid Box shall be recorded in the First Aid Items issue Register. 	Contractor /PM Admin In-charge
	First Aid	
5.10	<ul style="list-style-type: none"> When a need arises for providing first aid, any staff who is available near the affected person shall immediately call one of the first aiders / Security. In the meanwhile the Admin. Department / Security shall also make arrangement for transport of the injured person if a need for the same arises. And also check the availability of a doctor for referral and necessary advice. As the first aid is being provided, the first aider shall keep the Project Manager informed of the incident / accident. 	Site In-charge / Security / First Aider
	Recording the Incident / Accident :	
5.11	Once providing the first aid is completed, then the first aider along with the person who first reported the incident / accident shall update the First Aid Register.	Contractor /PM/ Admin In-charge/ First Aider
5.12	Records : <ul style="list-style-type: none"> List of First Aiders First Aid Register Stock / Issue Register – Medicine of FA Kit 	Contractor /PM Admin In-charge Admin in-charge First Aider

 L&T IDPL	Standard Operating Procedure	Doc. No. 11
		Rev. No.
	FIRST AID	Date : 14/08/2015
		Page 3 of 6

6. Legal & Statutory requirements :


- The Building and Other Construction Workers Act , 1996

Reference Standards :

The IS Standard related to First Aid kit is :

- IS 13115 (B) (1991): Portable First Aid Kit for General Use (Bi-lingual) [MHD 15: Electro medical Equipment]

A list of contents of a First Aid box is given an 'Annexure A' to this SOP.

 L&T IDPL	Standard Operating Procedure	Doc. No. 11
		Rev. No.
	FIRST AID	Date : 14/08/2015
		Page 4 of 6

CONTENTS OF FIRST-AID BOX


Annexure A

SCHEDULE III (See Rule 261 (b))

The Gujarat Building & Other Construction Workers (Regulation of employment and conditions of service central Rules, 2003

Name of the Project :

Sl.No.	Description	Quantity	Expiry Date
1.	Sufficient number of eye wash bottles filled with distilled water or suitable liquid clearly indicated by a distinctive sign which shall be visible at all times		
2.	4 per cent xylocaine eye drops and boric acid eye drops and soda bicarbonate eye drops		
3.	Small sterilized dressings	24	
4.	Medium size sterilized dressings	12	
5.	Large size sterilized dressings	12	
6.	Large size sterilized burn dressings	12	
7.	15 cm. sterilized cotton wool	12 packets	
8.	200 ml bottle of certimide solution (1 per cent) or suitable antiseptic solution	1 Bottle	
9.	200 ml bottle of mercurochrome (2 per cent) solution in water	1 Bottle	
10.	100 ml bottle of salvolatile having the doses and mode of administration indicated on the label	1 Bottle	
11.	Scissor	1 Pair	
12.	6 cm X 1 mtr Adhesive plaster	1 Roll	
13.	2 cm X 1 mtr Adhesive plaster	1 Roll	
14.	Sterilized eye pads in separate sealed packets	12 Pieces	
15.	325 mg of Aspirin or any other analgesic	100 Tab	
16.	10 cm wide roller bandage	12	
17.	5 cm wide roller bandage	12	
18.	Tourniquet	1	
19.	A Supply of suitable splints		
20.	Safety pins	3 pkts	
21.	Kidney tray		
22.	Snake bite lancet	1	
23.	30 ml bottle containing potassium permanganate crystals	1	
24.	First aid leaflet issued by Directorate General	1 copy	
25.	Triangular bandages	6	
26.	Suitable sterilized latex and gloves	2 pairs	

 L&T IDPL	Standard Operating Procedure	Doc. No. 11
		Rev. No.
	FIRST AID	Date : 14/08/2015
		Page 5 of 6


SAMPLE

LIST OF FIRST AIDERS

Name of the Project :

Sl.No.	Name	Department	Trained on

Source : L&T Transportation Infrastructure—Independent Company

 L&T IDPL	Standard Operating Procedure	Doc. No. 11
		Rev. No.
	FIRST AID	Date : 14/08/2015
		Page 6 of 6

SAMPLE


L&T Infrastructure Development Projects Limited

FIRST AID REGISTER

Name of the Project :


Sl. No.	Date / Time	Name of the Injured	Age/ Sex	Category/ Designation	Name of Contractor	Area / Location	Nature of the injury	Possible Causes of the injury	Treatment Given	Signature/ LHI of the Injured	Remarks If any

Source : L&T Transportation Infrastructure – Independent Company

 L&T IDPL	Standard Operating Procedure	Doc. No. 12
		Rev. No. 0
	Fire Safety	Date : 14/08/2015
		Page 1 of 4

- 1. Purpose** : For fire safety at Work place, Labour Camps and Offices
2. Scope/Applicability : All Offices & Sites
3. Responsibility : Contractors/PM/Security/Site In-charge
4. Key Words : **LPG** – Liquefied Petroleum Gas
PRO - Public Relations Officer
5. Procedure :


S.No.	Activity	Responsibility
5.1	Sources of Fire: Identify the possible source of fire at work place and labour camps. The possible sources of fire are Fuel Storage Tank, Welding Operation, Gas Cutting Operation, Short-Circuits, Diesel Drums, Oil Spillage, LPG Cylinder, ordinary combustible materials such as wood, cloth, paper, rubber, many plastics, overheating electrical equipments and carelessly discarded cigarette butts.	Contractors /PM/ Site In-charge
5.2	Emergency Contact Information : Telephone / Mobile numbers of site in charge, security officer / PRO, nearby Fire brigade, Police Station / Hospitals shall be displayed near each telephones in all Offices & Sites. This list shall be updated as and when required by Contractors/ PM .	Contractors /PM/ Site In-charge
5.3	Fire Safety Signages : <ul style="list-style-type: none"> Fire safety signage must be displayed at places where there is potential fire hazard. In particular No Smoking & No open flame signage to be displayed at labour camps. Any signage found damaged must be replaced. Smoke detection systems to be provided where necessary and feasible. 	Contractors /PM/ Site In-charge
5.4	Fire Exits Exit routes from the work place / buildings must be clear and free of obstructions and properly marked with signs designating exits from the building	Contractors /PM/ Site In-charge
5.5	Escape routes must be well lit. Provide where necessary or practically possible a battery operated emergency lights so that main lighting fails the lights will operate automatically.	Contractors /PM/ Site In-charge
5.6	Fire Prevention Familiarize all with the location of the evacuation routes (primary and secondary), first aid station or kit, each fire alarm, each fire extinguisher, the nearest public telephone, and the location of the stairway (as indicated on the Emergency Evacuation Diagrams).	Contractors /PM/ Site In-charge

 L&T IDPL	Standard Operating Procedure	Doc. No. 12
		Rev. No. 0
	Fire Safety	Date : 14/08/2015
		Page 2 of 4

5.7	Portable Fire Extinguishers <ul style="list-style-type: none"> • Provide appropriate type of Fire extinguishers in adequate numbers at identified fire risk areas; • The fire extinguishers shall be according to IS: 5698; • Place fire extinguishers in noticeable locations clearly visible & easily accessible; and • The service schedule to be adhered to for all fire fighting equipments. 	Contractors /PM/ Site In-charge
5.8	Inspection : Inspect the extinguishers at prescribed intervals, to ensure that they have not been actuated, or tampered with and to detect any physical damage or corrosion.	Contractors /PM/ Site In-charge
5.9	Training Training on use of Fire Extinguishers to be imparted on a regular basis to Employees / Staff / Security staff and Workers of contractors on a regular basis. This includes the new staff also.	Contractors /PM/ Site In-charge /HR
5.10	Mock fire fighting exercise to be conducted at periodic intervals but at least once in a year. Corrective action to be taken based on the short comings identified during mock drills and its effectiveness checked.	Contractors /PM/ Site In-charge
5.11	Records : <ul style="list-style-type: none"> • List of fire extinguishers and fire fighting equipments (along with the servicing calendar). • Records of training provided and mock drills conducted 	Contractors /PM/ Site In-charge


6. Legal & Statutory requirements

- Factories Act, 1948
- National building code of India part 4 Fire and Life safety-2005





 L&T IDPL	Standard Operating Procedure	Doc. No. 12
		Rev. No. 0
	Fire Safety	Date : 14/08/2015
		Page 3 of 4


Reference Standards:

Fire Protection	Description
IS: 2190-1992	Code of practice for selection, installation and maintenance of portable first-aid fire extinguisher
IS: 5896	Code of practice for selection, operation and maintenance of fire-fighting appliances
IS: 8433-1984	Code of practice for dissolved acetylene cylinders
Signages :	
The IS Standard ,IS 12349 (1988)	Fire protection-safety signs [CED 36: Fire Safety]
Fire Extinguishers:	
IS 940 (2003):	Specification for Portable Fire Extinguisher, Water Type (Gas Cartridge) - [CED 22: Fire Fighting]
IS 2171 (1999) (R2004):	Specification for portable fire extinguishers, dry powder (cartridge type) [CED 22: Fire Fighting]
IS 2878 (2004)	Fire Extinguisher, Carbon Dioxide Type (Portable and Trolley Mounted) -Specification [CED 22: Fire Fighting]
IS 10204 (2001):	Specification for portable fire extinguisher mechanical foam type [CED 22: Fire Fighting]
IS 10658 (1999):	Specification for Higher Capacity Dry Powder Fire Extinguisher (Trolley Mounted)

 L&T IDPL	Standard Operating Procedure	Doc. No. 12
		Rev. No. 0
	Fire Safety	Date : 14/08/2015
		Page 4 of 4

Types of Fire Extinguishers


Extinguisher		Type of Fire				
Colour	Type	Solids (wood, paper, cloth, etc)	Flammable Liquids	Flammable Gases	Electrical Equipment	Cooking Oils & Fats
	Water	✓ Yes	✗ No	✗ No	✗ No	✗ No
	Foam	✓ Yes	✓ Yes	✗ No	✗ No	✓ Yes
	Dry Powder	✓ Yes	✓ Yes	✓ Yes	✓ Yes	✗ No
	Carbon Dioxide (CO2)	✗ No	✓ Yes	✗ No	✓ Yes	✓ Yes

 L&T IDPL	Standard Operating Procedure	Doc. No. 13
		Rev. No. 0
	Work Place Safety	Date : 14/08/2015
		Page 1 of 3


1. **Purpose** : To define procedure for working in confined area / working at height / working in nights and excessive weight handling.
2. **Scope/Applicability** : Sites (applicable areas)
3. **Responsibility** : Contractors /PM/ Site In-charge
4. **Key Words** : **Confined Space**: A space or structure that is, large enough that employees can bodily enter and perform work and is not designated for continuous occupancy and has limited openings for entry and exit and restricted natural ventilation, e.g. oil storage tanks, reaction vessels, inside furnace, inspection pits, etc.
Working at height : the height which shall be of fifteen metres or more in height when complete.
PPE : Personal Protective Equipment

5. **Procedure** :

S.No.	Activity	Responsibility
	Working in Confined Area	
5.1	Issue of confined space work entry permit. (Ref SOP Doc. No.8 – Work Permit System)	Contractors /PM/ Site In-charge
5.2	Check if isolation of confined space is required and from what i.e. water / gas/ mechanical/ electrical drives and tag fixing done at the at isolation point/ confined area location	Contractors /PM/ Site In-charge
5.3	Check if ventilation in confined space is adequate or not, provide for appropriate ventilation before entry if so required	Contractors /PM/ Site In-charge
5.4	Check if atmospheric test is required.	Contractors/PM/ Site In-charge
5.5	Use 24 volt supply for hand-held lamps, especially in confined spaces. Lamp guards are necessary for hand-held lamps.	Contractors/PM/ Site In-charge
5.6	Essential requirements such as Fire Extinguishers, First Aid Kit, Torch, Routine protection items and any other safety precautions are available before commencement of work.	Contractors/PM/Site In-charge /Admin
5.7	Brief the persons who assigned the job should been trained on the job and get an acknowledgment from them on their understanding of the nature of job and safety precautions to be followed. PPEs as required to be provided.	Site In- charge/Contractors
5.8	Ensure that a co-worker has been assigned along with the person who has been assigned the job to stand outside the confined space to keep a watch.	Site in-charge/ Fellow workers

 L&T IDPL	Standard Operating Procedure	Doc. No. 13
		Rev. No. 0
	Work Place Safety	Date : 14/08/2015
		Page 2 of 3


5.9	After coming out of the confined space they should complete the Permit cancellation with all details as required.	Contractors/PM/ Site In-charge /Security
	Working at Night	
5.10	Identify work area for night shift only when it became unavoidable or else plan to complete the job in maximum two shift or even by early / late working in the day.	Contractors/PM/ Site In-charge
5.11	Do not plan heavy complex job for night shift and staff assigned for night shift should not have health problems.	Contractors /PM/ Site In-charge
5.12	Same person should not continue in night shift for long period in short and long run.	Contractors /PM/ Site In-charge
	Working at heights – Safe Use of Ladders	
5.13	<ul style="list-style-type: none"> • Use portable ladders for flights up to 4 M only • Provide fixed ladders for flights above 4 M. • Place the ladder at an angle of 75 degrees (approx) from the Horizontal. • Extend ladder at least 1 M above the top landing. • Secure top and bottom of the ladder firmly to prevent displacement. • Ensure that the width of the ladder is not less than 300 mm and distance between rungs is not more than 300 mm. • Check the ladders daily for any defects. • Ensure that the areas around base and top of the ladder are clear. • Do not use ladders of conducting material near power lines. • Stand no higher than the fourth rung from the top for carrying out any job standing on a ladder. • Always face the ladder while climbing up or down. • Avoid climbing up or down a ladder while carrying anything in hands. Lift tools, equipment and materials with a rope. 	Site In-charge / Workers
5.14	Illumination: <ul style="list-style-type: none"> • Provide adequate illumination at all work places and their approach passages/corridors. • Ensure that artificial lighting do not cause excessive glare or disturbing shadows. 	Contractors/PM/ Site In-charge

 L&T IDPL	Standard Operating Procedure	Doc. No. 13
		Rev. No. 0
	Work Place Safety	Date : 14/08/2015
		Page 3 of 3

	<ul style="list-style-type: none"> • Provide suitable guards for the lamps where necessary to prevent danger, if lamp breaks. • Provide emergency lighting to minimize danger in case of power failure. 	
5.15	Work Permits : Where work permits are required to be issued for carrying out a work safely. (Refer to SOP Doc No. 8 - Work Permit System)	Contractors/PM/ Site In-charge
5.15	Records: As listed in the "SOP Doc No.8 Work Permit System" and "SOP Doc No. 17 - Machine Safety & Statutory Requirements"	Contractors/PM/ Site In-charge

6. Legal & Statutory requirements


- The Building and Other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996.

	Standard Operating Procedure	Doc. No. 14
		Rev. No. 0
	Emergency Preparedness Plan	Date : 14/08/2015
		Page 1 of 2

1. **Purpose** : For handling emergency that may arise at work site.
2. **Scope/Applicability** : All sites
3. **Responsibility** : Contractors /PM/Site In-charge
4. **Key Words** : ERP - Emergency Response Plan.

5. Procedure


S.No.	Activity	Responsibility
5.1	<p>The ERP must be able to address the emergencies arising at site out of situations like but not limited to</p> <ul style="list-style-type: none"> • Fire and explosion; • Collapse of lifting appliances and transport equipment; • Collapse of building, sheds or structure etc.; • Gas leakage or spillage of dangerous goods or chemicals • Drowning of workers • Landslides getting workers buried; floods, storms and other natural calamities • Community unrest. 	Contractors /PM/Site In-charge
5.2	The ERP should be communicated to all personnel including workers engaged by the Contractors at site.	Contractors /PM/Site In-charge
5.3	<p>The contact details of persons to be contacted during emergency should be displayed in such a manner that it is visible to all.</p> <p>All should be made aware of the chain of command for communication with respect to reporting of the emergency within the organization and to other outside agencies.</p>	Contractors /PM/Site In-charge
5.4	The site evacuation plan in order to facilitate and organize actions during workplace emergencies shall be displayed at all project sites detailing the assembly point and escape routes.	Contractors /PM/Site In-charge
5.5	<p>Conduct mock drills periodically at least once in a year at sites.</p> <p>Review the observations of mock drill.</p> <p>Revise the ERP based on the mock drill outcome and / or on occurrence of real emergency situations.</p>	Contractors /PM/Site In-charge
5.6	Arrangements shall be made for emergency medical treatment and evacuation of the victim in the event of an accident or dangerous incident occurring.	Contractors /PM/Site In-charge

 L&T IDPL	Standard Operating Procedure	Doc. No. 14
		Rev. No. 0
	Emergency Preparedness Plan	Date : 14/08/2015
		Page 2 of 2

5.6	Depending on the nature of emergency, the applicable law & order authorities and other statutory agencies are to be informed and assistance sought to handle the situation.	Contractors /PM/Site In-charge
5.7	The site in charge and other key personal at site should be trained on how to create awareness on the ERP along with the actions to be taken in an emergency and handle community grievance / unrest and prevent its escalation.	Contractors /PM/Site In-charge
5.8	Records : <ul style="list-style-type: none"> • Emergency contact numbers of persons and facilities. • Mock drill records and its corrective action. • Emergency situation records and its follow-up action. 	Contractors /PM/Site In-charge

6. Legal & Statutory requirements:


All relevant regulatory Acts / Rules framed from time to time.

 L&T IDPL	Standard Operating Procedure	Doc. No. 15
		Rev. No. 0
	Personal Protective Equipment	Date : 14/08/2015
		Page 1 of 3

1. **Purpose** : To avoid any personal damage / harm from the effects of potential health hazards and provide safe operations.
2. **Scope/Applicability** : Sites
3. **Responsibility** : Contractors/ PM/ Site in-charge
4. **Key Words** : PPE - Personal Protective Equipment
SCBA – Self Contained Breathing Apparatus

5. Procedure :

S.No.	Activity	Responsibility							
5.1	<p>Personal Protective Equipments (PPEs)</p> <p>The Group / the contractor shall provide required PPEs to workmen to provide safety and / or prevent health hazards.</p> <p>Primarily PPEs are required for the following protection:</p> <p>i) Head Protection (Safety helmets)</p> <p>ii) Foot Protection (Safety footwear, Gumboot, etc.)</p> <p>iii) Body Protection (High visibility clothing (waistcoat/jacket), Apron, etc.)</p> <p>iv) Personal fall protection (Full body harness, Rope-grap fall arrester, etc.)</p> <p>v) Eye Protection (Goggles, Welders glasses, etc.)</p> <p>vi) Hand Protection (Gloves, Finger coats, etc.)</p> <p>vii) Respiratory Protection / Dust. (Nose mask, SCBAs, etc.)</p> <p>viii) Hearing Protection (Ear plugs, Ear muffs, etc.)</p>	Contractors/ PM/ Site in-charge							
5.2	<p>Safety Helmet Colour Code</p> <p>(Every Helmet should have the company Logo affixed /painted)</p> <p>Identification of Users Helmets</p> <table><tr><th>Person to use</th><th>Colour</th></tr><tr><td>Managers</td><td rowspan="4">Appropriate colours to distinguish the users</td></tr><tr><td>Supervisors</td></tr><tr><td>Contractor staff / workers</td></tr><tr><td>Visitors</td></tr></table>	Person to use	Colour	Managers	Appropriate colours to distinguish the users	Supervisors	Contractor staff / workers	Visitors	Contractors/ PM/ Site in-charge
Person to use	Colour								
Managers	Appropriate colours to distinguish the users								
Supervisors									
Contractor staff / workers									
Visitors									
5.3	<p>In addition to the PPEs listed in para 5.1 above, if any other PPE is required for any specific jobs like, welding and cutting, working at height, tunneling etc., shall also be provided to all workmen and also ensure that all workmen use the PPEs properly while on the job.</p>	Contractors/ PM/ Site in-charge							
5.4	<p>General Inspection of PPE</p> <p>PPE users are responsible for inspecting issued PPE before each use and reporting any damage to their Supervisor, who must arrange to replace or repair replacement of PPE, as appropriate, if it is not functioning as required.</p>	Site Supervisor / Workers							

 L&T IDPL	Standard Operating Procedure	Doc. No. 15
		Rev. No. 0
	Personal Protective Equipment	Date : 14/08/2015
		Page 2 of 3


5.5	Training Anyone using PPE must be provided with adequate information and training in the use and care of their PPE.	Contractors/ PM/ Site in-charge /HR
5.6	Records: PPE Register PPE Training Records	Contractors/ PM/ Site in-charge /HR

6. Legal & Statutory requirements

- Factories Act, 1946

IS Standards applicable for PPEs & Safety Appliances:

- Safety Helmet (IS -2925 - 1984)
- Safety Shoes (IS-1989,IS- 3738)
- Ear Protection (IS- 9167,IS-6229)
- Ear Muff / Plug (IS: 9167- 1979)
- Hand gloves IS – 6994 – (part – 1) 1973 / IS – 4770 -1991
- Nose masks (IS 15323 – 2003)
- Safety Belt Double life line (IS -3521)
- Full Body Harness (IS -8807)
- Eye and Face Protection devices (IS-7524, IS-5983 & IS-8521)
- Hand and Body protection devices (IS-2573,IS-4770 & IS- 8519)
- Safety Net (IS-11057)

 L&T IDPL	Standard Operating Procedure	Doc. No. 15
		Rev. No. 0
	Personal Protective Equipment	Date : 14/08/2015
		Page 3 of 3


L&T Infrastructure Development Projects Limited

PERSONAL PROTECTIVE EQUIPMENT REGISTER

Name of Project :


Date	Description	Receipt/issue	Recd.	Issued		Closing Stock
				Name	Dept.	

Source : L&T Transportation Infrastructure – Independent Company

 L&T IDPL	Standard Operating Procedure	Doc. No. 16
		Rev. No. 0
	Machine Safety & Statutory Requirements	Date : 14/08/2015
		Page 1 of 4

1. **Purpose** : To understand some basics on Machine Safety to avoid any personal damage / harm when working on or working with them.
2. **Scope/Applicability** : At Sites for various machines used jobs.
3. **Responsibility** : Contractors /PM/P&M /Site In-charge.
4. **Key Words** : P&M – Plant & Machinery
5. **Procedure** :


S.No.	Activity	Responsibility
5.1	Think of Safety before operating any machine especially new ones.	Contractors /PM/P&M /Site In-charge
5.2	Manufacturers' Safety Instructions All users of machines should be trained to understand all the safety features and instructions of the manufacturers' of the machine before operating the machine.	Contractors /PM/P&M /Site In-charge /Operator
5.3	Read all warnings and danger notices/signs.	Operator/Site Supervisor
5.4	Know where the emergency stop button is located (as applicable).	Operator/Site Supervisor
5.5	Identification It should be ensured that the name / number plates on the machines are retained as long as the machine is in use / service.	Contractors /PM /Site In-charge /Operator
5.6	Status of Machines : The status of a machine should be displayed especially when they are under repair / service. This is particularly important during shift changes.	Contractors /PM/Site In-charge /Operator
5.7	Guards It should be ensured that guards provided by the manufacturers on rotating parts are continued to be maintained and fitted back if the same were removed for servicing / repairs.	P&M In-charge/Operator
5.8	Permits & Periodic Inspections : <ul style="list-style-type: none"> • A list of machines / equipments requiring annual / periodical inspections by competent persons and permits for operation shall be listed. • These must be inspected as per prescribed schedule. • For Machines requiring valid permits for operation from local authorities, the permits must be obtained before using them. • For Machines that require the Operators to possess license to operate, ensure such operators are permitted to operate only after verification of their permits / licenses. 	Contractors /PM/Site In-charge /Operator

 L&T IDPL	Standard Operating Procedure	Doc. No. 16
		Rev. No. 0
	Machine Safety & Statutory Requirements	Date : 14/08/2015
		Page 2 of 4

	General	
5.9	<ul style="list-style-type: none"> • Switch Off machine completely before changing or adjusting any parts of the machine. • Do not attempt any maintenance work on the moving parts of the machines. • If any part of the machine is not functioning, inform the same to the immediate Supervisor immediately. • Don't attempt to repair it if you are not trained. • Use proper tools to work on machine. Never use bare hands. • Don not wear loose clothing when working on machines. • Use appropriate personal protective equipment when operating or working on machine. 	Site Supervisor/Operator/P&M Staff
5.10	In order to monitor the performance an equipment, a history card should be maintained and updated for the machine.	P&M Staff & Site In-charge
5.11	Records Depending upon the machinery in use in the Construction / Operational phase, the appropriate record to be maintained . <ul style="list-style-type: none"> • Plant & Machinery Inspection Reports • Certificate of Initial & Periodical Tests and Examination of Cranes or Hoists and their Accessory Gear – Form – X 	Contractors /PM/P&M / Site In-charge

6. Legal & Statutory requirements :

- Factories Act 1946 (applicable provisions)
- The Building and Other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 / Rules 1998

 L&T IDPL	Standard Operating Procedure	Doc. No. 16
		Rev. No. 0
	Machine Safety & Statutory Requirements	Date : 14/08/2015
		Page 3 of 4

L&T Infrastructure Development Projects Limited

PLANT & MACHINERY INSPECTION REPORT

Name of Project :

Inspected by :


Date :

Sl. No.	Identification/Registration No	Make/Model	Unsafe condition/deficiencies observed & recommendations	Action by	Target Date	Remarks

Site In-charge

P&M Engineer/Site Engineer

Source : L&T Transportation Infrastructure – Independent Company

 L&T IDPL	Standard Operating Procedure	Doc. No. 16
		Rev. No. 0
	Machine Safety & Statutory Requirements	Date : 14/08/2015
		Page 4 of 4

FORM - X

[See rule 86 and 104 (b)(1)(b)]

The Gujarat Building and other Construction Workers' (Regulation of employment and conditions of service central Rules, 2003)

**CERTIFICATE OR INITIAL AND PERIODICAL TEST AND
EXAMINATION OF CRANES, OR HOISTS AND THEIR ACCESSORY
GEAR**

Test Certificate No. _____

(a) Name of the construction site where cranes or hoists are lifted/installed :

Situation description	and For jib cranes radius at the test load was applied	Test load applied	Safe working load for jib cranes at radius shown in Column (2)
(1)	(2)	(3)	(4)
	(Metres)	(Tones)	(Tones)

Name and address of public service, association, or firm or testing establishment making the test and examination	Name and position of the Competent Person of public service, association, company or firm or testing establishment
(5)	(6)


I certify that on the _____ day of _____ 20____ the lifting appliances together with its necessary gear, was tested in the manner set forth overleaf that a careful examination of the said lifting appliances and gear after the test showed that it has withstood the test load without injury or permanent deformation; and that the safe working load of the said lifting appliance and gear is as shown in column (4).

Signature of the Competent Person
(See note 3)

*Seal

Date


Registration/Authority-number of the Competent Person.

 L&T IDPL	Standard Operating Procedure	Doc. No. 17
		Rev. No. 0
	SAFE WELDING AND GAS CUTTING OPERATION	Date : 14/08/2015
		Page 1 of 4


1. **Purpose** : To ensure that all activities related to welding and gas cutting are safe.
2. **Scope/Applicability** : Applicable to all areas involving welding and gas cutting.
3. **Responsibility** : Contractors/ PM / Site In-charge.
4. **Key Words** : LPG – Liquefied Petroleum Gas
DCP – Dry Chemical Powder
CO₂ – Carbon dioxide
BIS – Bureau of Indian Standards

5. **Procedure** :


S.No.	Activity	Responsibility
5.1	Ensure use of aprons, gloves and other PPE as appropriate.	Contractors/ PM/ Site In-charge
5.2	Only trained welders shall be employed	Contractors/ PM/ Site In-charge
5.3	Domestic LPG cylinders shall not be used for Gas welding and Cutting purpose. This is a punishable offence.	Contractors/ PM/ Site In-charge
	Gas cutting	
5.4	<ul style="list-style-type: none"> Use trolleys and cradles of adequate strength, as far as possible, while moving the cylinders. Check if the gas cylinder is labeled with the name of the gas. Ensure that the person/agency that delivers or dispatch the cylinders possess license for the same or has exemption for the same. Gas cylinders shall be stored in a cool, dry, well ventilated place under cover, away from boilers, open flames, steam pipes or any potential sources of heat and such place of storage shall be easily accessible. 	Contractors/ PM/ Site In-charge Site Supervisor
5.5	Always keep LPG and other liquefiable gas cylinders in upright position and ensure that they are not knocked over and not in horizontal position.	Operator/Store Keeper
5.6	DCP or CO ₂ type fire Extinguisher not less than 5 kg shall be fixed at or near to welding process zone in an easily accessible location, Fire Extinguisher should conform to latest BIS standard.	Contractors/ PM/ Site In-charge
5.7	Adequate ventilation shall be provided for easy dispersion of gas while welding, brazing and cutting in confined space.	Contractors/ PM/ Site In-charge
5.8	Open the valve of oxygen gas first and then flammable gas for lighting the torch.	Operator

 L&T IDPL	Standard Operating Procedure	Doc. No. 17
		Rev. No. 0
	SAFE WELDING AND GAS CUTTING OPERATION	Date : 14/08/2015
		Page 2 of 4

5.9	Use friction gas lighters only for lighting the torch. Never use matches or smoldering manila ropes or rags for lighting the torch.	Site Supervisor / Operator
5.10	Ensure that the valve key is easily accessible to close the valve immediately in case of emergency.	Site Supervisor / Operator
5.11	Check the hoses daily for any visible damage. Discard the hoses in which gas had backfired.	Site Supervisor / Operator
5.12	Use firewatchers / fellow workmen if there is a possibility of ignition unobserved by the operator (eg. on the other side of bulkheads).	Site Supervisor / Operator
	Arc Welding	
5.13	Welding ground cables and returns should be securely attached to the work by cable lugs, by clamps in the case of stranded conductors, or by bolts for strip conductors.	Site Supervisor / Operator
5.14	The ground cable will not be attached to equipment or existing installations or apparatus.	Site Supervisor / Operator
5.15	Frames of arc welding machines shall be effectively earthed;	Site Supervisor / Operator
5.16	Transformer used for electrical arc welding shall be fixed with Ammeter and Voltmeter and also fixed with separate main power switch.	Site Supervisor / Operator
5.17	The work area, equipment and clothing should be kept dry at all times.	Site Supervisor / Operator
5.18	Ventilating slots in transformer enclosures shall be so designed that no live part is accessible through any slot.	Site Supervisor / Operator
5.19	Only heavy-duty cable with unbroken insulation shall be used.	Site Supervisor / Operator
5.20	The welder should stand on a dry board or insulated platform.	Site Supervisor / Operator
5.21	When arc welding is done in damp confined spaces; i) Electrode holders shall be completely insulated; and ii) The welding machines shall be outside the confined space;	Site Supervisor / Operator

 L&T IDPL	Standard Operating Procedure	Doc. No. 17
		Rev. No. 0
	SAFE WELDING AND GAS CUTTING OPERATION	Date : 14/08/2015
		Page 3 of 4


	FUMES & GASES	
5.22	Sufficient ventilation, exhaust at the arc, or both should be used to keep fume and gases from breathing zones and the general work area.	Contractors/ PM/Site In-charge
	BURN PROTECTION	
5.23	Worker should wear protective clothing made of fire resistance material	Site supervisor/ Operator
5.24	Pant cuffs or clothing with open pockets or other places on clothing that can catch and retain molten metal or sparks should not be worn.	Site supervisor / Operator
5.25	Insulated gloves should be worn at all times when in contact with hot items or handling electrical equipment.	Site supervisor/ Operator
5.26	High top shoes or leather leggings and fire resistance gloves should be worn	Site supervisor/ Operator
5.27	Helmets or hand shields that provide protection for the face, neck and ears should be worn	Site supervisor / Operator
5.28	Clothing should be kept free of grease and oil.	Site Supervisor / Operator
5.29	Consumable materials should not be carried in pockets.	Site Supervisor / Operator
5.30	Exposed skin should be protected with adequate gloves and clothing as specified.	Site Supervisor / Operator
	Radiation	
5.31	Goggles or equivalent also should be worn to give added eye protection	Site Supervisor / Operator
5.32	Welding arcs should not be viewed except through welding filter plates.	Site Supervisor / Operator
	Operations	
5.33	Arc welding and cutting operations that are carried on at places where persons other than the welders are working or passing shall be enclosed by means of suitable stationary or mobile screens, curtains or adequate distance from aisles, walkways etc., if necessary, be painted or otherwise treated for the purpose;	Site Supervisor / Operator

 L&T IDPL	Standard Operating Procedure	Doc. No. 17
		Rev. No. 0
	SAFE WELDING AND GAS CUTTING OPERATION	Date : 14/08/2015
		Page 4 of 4

5.34	Welding circuits shall be switched off when not in use;	Site Supervisor / Operator
5.35	Electrodes shall only be inserted in the holder with insulating means such as insulating gloves;	Site Supervisor / Operator
5.36	Records : Notice regarding Accidents if any when Gas cylinders are used	Contractors/ PM/Site In-charge/ Store In-charge


6. Legal & Statutory requirements

- Gas Cylinder Rules, 2004


 L&T IDPL	Standard Operating Procedure	Doc. No. 18
		Rev. No. 0
	Fall Prevention / Protection	Date : 14/08/2015
		Page 1 of 3

1. **Purpose** : To avoid any personal injury / harm from the effects of fall or falling materials
2. **Scope/Applicability** : All Sites
3. **Responsibility** : Contractors/ PM/Site In-charge.
4. **Key Words** : Working at height is working at a height more than two metres
5. **Procedure** :

S.No.	Activity	Responsibility
5.1	Fall Prevention <ol style="list-style-type: none"> a. The first consideration must always to provide a safe working platform. b. The sides of all stairways, floors/platforms, walkways, buildings, etc., from where a person can fall and suffer injury or from where articles could fall and injure someone must be protected with double guard rails and toe boards. c. With regard to permanent structures such as stairways and platforms, as much of the permanent handrails as is reasonably practicable should be installed while the structure is at ground level. 	Contractors/ PM/Site In-charge
5.2	Protections against fall of persons – <ol style="list-style-type: none"> a. All scaffolds/working platforms at height of two metres or more shall be fenced. b. All guard-rails for the fencing of floor openings, gangways, elevated workplaces shall be made of sound material, good construction and possess adequate strength and design. c. Guard-rails shall be free from sharp edges and be maintained in good repair. 	Contractors/ PM/Site In-charge
5.3	Working at Heights <ol style="list-style-type: none"> a. Elevated workplaces at more than 2 m above the floor or ground shall be protected on all open sides by guardrails. The barricade tapes can be used as markers/route guide only. b. Elevated workplaces shall be provided with safe means of access and egress such as stairs, ramps or ladders according to suitability. c. Persons employed at elevated workplaces or other situations at more than 2m from which they may fall, shall be protected by means of adequate safety nets, or platforms, or be secured by safety belts with the lanyard properly anchored above the head level of the user. All possible effort 	Contractors/ PM/Site In-charge

 L&T IDPL	Standard Operating Procedure	Doc. No. 18
		Rev. No. 0
	Fall Prevention / Protection	Date : 14/08/2015
		Page 2 of 3


	shall be made to have strong and dependable mechanical arrangement.	
5.4	Protection against fall of objects and materials: <ol style="list-style-type: none"> Materials and objects such as scaffolding materials, waste materials or tools shall not be thrown up or down from heights, as they are liable to cause injury; If materials and other objects cannot be safely lowered from heights, adequate precautions such as the provision of fencing, lookout men or barriers shall be provided to protect any person from injury. 	Contractors/ PM/Site In-charge
5.5	Floor Openings <ol style="list-style-type: none"> All openings, through which a person can fall and suffer injury, must be covered and secured using material that is sufficiently strong to support any forces that it may be subjected to. The word "Hole" or "Opening" must be printed on the topside. If a cover is not used the opening must be protected by rigid guardrails of adequate strength and toe boards. When floor gratings are removed for fitting instrument cables etc., the area must be physically fenced off and signs put in place. Rope or warning tape is not considered as being adequate. Fences must not be removed before the floor is reestablished and inspected. Persons not connected with the works must be prevented from inadvertently walking into the area until all panels are fixed and work complete. And notices clearly displayed prohibiting unauthorized access. If the means of protection is removed to allow the passage of persons or goods or other purpose, the same shall be replaced as soon as possible, while making temporary arrangements for reasonable degree of safety in the meanwhile. Covers for floor opening shall be safe to walk on and if vehicles operate thereon it shall be safe for the same. This will require the contractor to have prior assessment of expected loads. If covers constitute as grids, the bars shall be spread with appropriate spacing. 	Contractors/ PM/Site In-charge

 L&T IDPL	Standard Operating Procedure	Doc. No. 18
		Rev. No. 0
	Fall Prevention / Protection	Date : 14/08/2015
		Page 3 of 3

5.6	Slipping , Tripping can lead to fall hazards	
5.7	All passageways, platforms and other places shall be kept free from accumulations of dust, debris or similar material and from other obstructions that may cause tripping;	Contractors/ PM/Site In-charge
5.8	Any sharp projections or protruding nails or similar projections which may cause any cutting hazard to a building workers shall be removed or otherwise made safe by taking suitable measures;	Contractors/ PM/Site In-charge
5.9	Records : As listed in the SOP Doc. No. 8 - Work Permit System	Contractors/ PM/Site In-charge

6. Legal & Statutory requirements

- Factories Act, 1946 .
- The Building and Other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 / Rules 1998.


 L&T IDPL	Standard Operating Procedure	Doc. No.19
		Rev. No. 0
	SAFE HANDLING OF BATTERY SYSTEM	Date : 14/08/2015
		Page 1 of 1

1. **Purpose** : To ensure safe working during handling of battery system (to protect from accident acid spillages & toxic acid fumes during charging)
2. **Scope/Applicability** : All Sites
3. **Responsibility** : Contractors/Site In-charge /PM
4. **Key Words** : PCB : Pollution control Boards
5. **Procedure** :

S.No.	Activity	Responsibility
5.1	The electricians/operators shall study the Operation & Maintenance manual supplied by Battery manufacturer to understand the quantity of acid / water to be used and their hazards during the handling of the above.	Electrician
5.2	During handling of battery, ensure availability of clean water either from running tap or in pot (tank/drum/bucket).	Electrician
5.3	Ensure use of PPE like rubber hand gloves, masks etc., for handling of battery.	Electrician
5.4	Before placing of cells in battery room, ensure civil work completion like floor tiles, exhaust fan running etc.	Electrician
5.5	Carry out erection of the cells as per manufacturers' drawing.	Electrician
5.6	For maintenance free battery, arrange for charging of cells after assembly.	Electrician
5.7	For cells requiring acid or alkali solution to be charged after erection, ensure availability of weighing scale, mixing pot, funnels etc. as per manufacturers guide lines.	Electrician
5.8	Organize job meeting at site before start of the chemical filling activity and explain the potential hazards of the operation and immediate rescue action to be carried out.	Supervisor - Electrical
5.9	Do not use any excess quantity of water & acid. Acid to be used in exact amount for commissioning of cells.	Electrician
5.10	Carry out electrical charging of the battery with battery charger.	Electrician
	Disposal of batteries	
5.11	As the batteries are considered to be a 'Hazardous waste', when it is decided to scrap a battery after its effective life, the battery has to be disposed off only to an agency approved by the PCBs.	Contractors /Site In-charge /PM
5.12	Records : Hazardous Waste Register(Battery)	Contractors /Site In-charge /PM

6. Legal & Statutory requirements


- Battery (Management and Handling) Rules, 2001

 L&T IDPL	Standard Operating Procedure	Doc. No. 20
		Rev. No. 0
	Chemicals Handling	Date : 14/08/2015
		Page 1 of 2

1. **Purpose** : This procedure describes handling of Hazardous chemicals to avoid any personal damage / harm from the effects of chemicals .
2. **Scope/Applicability** : All sites
3. **Responsibility** : Contractors /PM/ Site in-charge /Store In-charge
4. **Key Words** : Hazardous Chemical - Any chemical which can cause a physical or a health hazard.
MSDS - Material safety data sheet – A document detailing the various characteristics of a chemical
PPE - Personal protective equipment

5. **Procedure:**


S.No.	Activity	Responsibility
5.1	List of Chemicals <ul style="list-style-type: none"> A list of Chemicals used categorized into hazardous & non hazardous shall be maintained along with the required valid licenses wherever applicable. Inventory of hazardous chemicals to be maintained at site. 	Contractors /PM/ Site in-charge /Store In-charge
5.2	Identification, Labeling and Handling: <ul style="list-style-type: none"> Label the containers clearly with contents, name & address of manufacture/ importer, physical and health hazards & recommended PPEs. As far as possible try to retain the labelling provided by the manufacturer / supplier of any chemical Keep the containers always closed after dispensing / transferring. Appropriate PPEs like gloves / masks / goggles should be worn by the staff when handling chemicals /paints 	Contractors /PM/ Site in-charge /Store In-charge
5.3	All staff handling chemicals should be trained on handling and storage of chemicals	Contractors /PM/ Site in-charge /Store In-charge
5.4	Demarcate separate area for storage of hazardous chemicals.	Contractors /PM/ Site in-charge /Store In-charge
5.5	For all Chemicals, MSDS must be obtained and must be readily available for reference and use.	Contractors /PM/ Site in-charge /Store In-charge

 L&T IDPL	Standard Operating Procedure	Doc. No. 20
		Rev. No. 0
	Chemicals Handling	Date : 14/08/2015
		Page 2 of 2

	Paints :	
5.6	Paints and solvents used with paints are combustible. So, following precautionary measures needs to be taken : <ul style="list-style-type: none"> • Stored in a cool ventilated place separately. • Suitable type of fire extinguishers to be provided near the storage area • Do not store paints - flammable and combustible liquids outdoors • Store in small quantities as practicable. 	Contractors /PM/ Site in-charge /Store In-charge
5.7	Fire Extinguishers : (Refer to SOP DOC No. 16 Fire Safety) <ul style="list-style-type: none"> • Fire extinguishers Type – A, B & C to be kept near the stored location and also outside the storage area. • Ensure availability of sand and saw dust for use in emergency. • Provide facility to contain any spillages. 	Contractors /PM/ Site in-charge /Store In-charge
5.8	Do not permit open flame, smoking, or other sources of ignition within vicinity where paints are dispensed or used. Also do not use mobiles, etc., in rooms where paints are stored	Contractors /PM/ Site in-charge /Store In-charge
5.9	Leakage or Spillage: Clean up leaking or spilled flammable or combustible liquids promptly and dispose of them safely.	Contractors /PM/ Site in-charge /Store In-charge
5.10	Wastes generated from paints should be disposed off as prescribed. (Refer SOP DOC No. 22 - Waste Management)	Contractors /PM/ Site in-charge /Store In-charge
5.11	Records : <ul style="list-style-type: none"> • MSDS of all the chemicals used. • Inventory of chemicals stored • Valid statutory licenses for storage of chemicals as applicable. 	Contractors /PM/ Site in-charge /Store In-charge

6. Legal & Statutory requirements


- Rules under Environment (Protection) Act, 1986,
- Manufacture, Storage and Import of Hazardous Chemical Rules, 1994, 2000.
- Chemical Accidents (Emergency Planning, Preparedness and Response) Amendment Rules, 1996.

 L&T IDPL	Standard Operating Procedure	Doc. No. 21
		Rev. No. 0
	Waste Management	Date : 14/08/2015
		Page 1 of 13


1. **Purpose** : For safe handling and disposal of wastes both Hazardous/ Non hazardous & E-waste.
2. **Scope/Applicability** : All Sites & Offices
3. **Responsibility** : Contractors /PM/Site in-charge/ Stores in-charge
4. **Key Words** : Hazardous Chemical
Any chemical which can cause a physical or a health hazard.
Bio-medical waste
Any waste, which is generated during the diagnosis, treatment or immunization of human beings or animals.
Electronic waste or e-waste
Waste generated from used electronic devices and house hold appliances which are not fit for their original intended use and are destined for recovery, recycling or disposal.
SPCB : State Pollution Control Board

5.Procedure:

S.No.	Activity	Responsibility
5.1	Types of wastes: <ul style="list-style-type: none"> • Authorization from State Pollution Control Board to be obtained to handle hazardous waste by Contractors / PM. (Form 1) • All wastes generated in the departments shall be categorized as Hazardous or Non hazardous. 	Contractors /PM/Site in-charge/ Stores in-charge
5.2	<ul style="list-style-type: none"> • Waste segregation at source to be done to identify hazardous, non-hazardous, e-waste, bio-medical waste etc.; • All waste are segregated and stored with appropriate identification boards / signage; • Demarcate separate area for storage of hazardous waste. No waste will be stored directly on the floor to prevent contamination of soil; • Smoking/flammable signage to be provided at appropriate places; • Ensure availability of sand and saw dust for use in emergency, and • Provide facility to contain any spillages of hazardous waste. 	Contractors /PM/Site in-charge/ Stores in-charge
5.3	Appropriate type Fire Extinguishers to be provided in the areas where waste is stored	Contractors /PM/ Site In-charge

 L&T IDPL	Standard Operating Procedure	Doc. No. 21
		Rev. No. 0
	Waste Management	Date : 14/08/2015
		Page 2 of 13


5.4	Appropriate Personal protective equipment (PPE) to be used when handling chemicals & paints	Contractors/Site Supervisor
5.5	<ul style="list-style-type: none"> • Inventory / Record of hazardous waste to be maintained in (Form 3); • Annual return submitted in Form 4 before 31st Jan of the following financial year to the State Pollution Control Board, and • Inventory of non-hazardous wastes also to be maintained. 	Contractors /PM/Site in-charge/ Stores in-charge
5.6	All hazardous waste to be disposed off only through vendors registered with Pollution Control Board. Non-hazardous waste to be disposed off only through the agencies registered with local authorities.	Contractors /PM/Site in-charge/ Stores in-charge
5.7	For transporting Hazardous waste, NOC to be obtained from the SPCB and manifest shall be prepared. Wherever required, the details of the truck & driver carrying the waste shall be communicated to the waste receiving site. (Form 2) Disposal of Hazardous wastes to be informed to the concerned SPCBs within 15 days of disposal. (Form 2)	Contractors /PM/Site in-charge/ Stores in-charge
5.8	In case of any accident, during transport of hazardous waste, the same to be reported immediately to the Pollution Control Board authorities. (Form 14)	Contractors /PM/Site in-charge/ Stores in-charge
5.9	Records : <ul style="list-style-type: none"> • Inventory of Hazardous & non-Hazardous wastes • Application for obtaining Authorization for Collection / Reception / Treatment / Transport / Storage / Disposal of Hazardous Waste (Form 1) • Form for granting Authorization for Collection / Reception / Treatment / Transport / Storage / Disposal of Hazardous Waste (Form 2) • Format for Maintaining records of hazardous waste at the facility -Inventory of Hazardous waste (Form 3) • Inventory of non-Hazardous wastes • Annual return (Form 4) • Manifest of hazard material being transported containing details as per Form 11, 12 & 13. 	Contractors /PM/Site in-charge/ Stores in-charge

 L&T IDPL	Standard Operating Procedure	Doc. No. 21
		Rev. No. 0
	Waste Management	Date : 14/08/2015
		Page 3 of 13

	<ul style="list-style-type: none"> Any accident during transport of hazardous waste to be reported in Form 14 to pollution control authorities. NOC (Valid authorization) issued by local authority for disposal of hazardous waste. List of approved vendors of SPCBs. 	
--	--	--

6. Legal & Statutory requirements

- Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008
- Municipal Solid Wastes (Management and Handling) Rules, 1999.

 L&T IDPL	Standard Operating Procedure	Doc. No. 21
		Rev. No. 0
	Waste Management	Date : 14/08/2015
		Page 4 of 13

The Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008

FORM - 1

[See Rule 5 (3) and (7)]

APPLICATION FOR OBTAINING AUTHORISATION FOR COLLECTION/RECEPTION/TREATMENT/TRANSPORTS/STORAGE /DISPOSAL OF HAZARDOUS WASTES*

From:

To
The Member Secretary,
Pollution Control Committee,
Daman & Diu and Dadra & Nagar Haveli,
Daman/Silvassa.

Sir,

I/We hereby apply for authorization/renewal of authorization under sub-rule (3) of rule 5 of the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 for collection/reception/treatment/transport/storage/disposal of hazardous wastes.

FOR OFFICE USE ONLY

(1) Code No.:

(2) Whether the unit is situated in a critically polluted area as identified by Ministry of Environment & Forests:

TO BE FILLED IN BY APPLICANT

PART- A: GENERAL


3. (a) Name and address of the unit and location of activity:

(b) Authorization required for
(Please tick mark appropriate activity/activities):

1. Collection
2. Reception
3. Treatment
4. Transport
5. Storage
6. Disposal

(c) In case of renewal of authorization, previous authorization number and date:

4. (a) Whether the unit is generating hazardous waste as defined in the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 and amendments made there-under:

 L&T IDPL	Standard Operating Procedure	Doc. No. 21
		Rev. No. 0
	Waste Management	Date : 14/08/2015
		Page 5 of 13


- (b) If so the type and quantity of wastes (in Tonnes/Kl)
5. (a) Total capital invested on the project (in Rupees)
- (b) Year of commencement of production
- (c) Whether the industry works general/ 24hrs /round the clock
6. (a) List and quantum of products and bye-products (in Tonnes/Kl):
- (b) List and quantum of raw materials used (in Tonnes/Kl):
7. Furnish a flow diagram of manufacturing process showing input and output in terms of products, waste generated including for captive power generation and demineralised water

PART - B: HAZARDOUS WASTE

8. Hazardous Wastes:
- a. Type of hazardous wastes generated as defined under the Hazardous Wastes (Management, Handling and Transboundary Movement) Rules, 2008 and amendments made there-under
- b. Quantum of hazardous waste generated:
- c. Sources and waste characteristics (Also indicate wastes amenable to recycling, re-processing and reuse)
- d. mode of storage within the plant, method of disposal and capacity (provide details)
9. Hazardous Wastes generated as per these Rules from Storage of hazardous chemicals as defined under the Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989.

PART - E: TREATMENT, STORAGE & DISPOSAL FACILITY


10. Detailed proposal of the facility (to be attached) to include:
- Location of site (provide map)
 - Name of waste processing technology
 - Details of processing technology
 - Type and Quantity of waste to be processed per day
 - Site clearance (from local authority, if any)
 - Utilization programme for waste processed (Product Utilization)
 - Method of disposal (details in brief be given)

 L&T IDPL	Standard Operating Procedure	Doc. No. 21
		Rev. No. 0
	Waste Management	Date : 14/08/2015
		Page 6 of 13

- viii. Quantity of waste to be disposed per day
- ix. Nature and composition of waste
- x. Methodology and operational details of land filling/ incineration
- xi. Measures to be taken for prevention and control of environmental pollution including treatment of leachate.
- xii. Investment on Project and expected returns
- xiii. Measures to be taken for safety of workers working in the plant

Place:
Date:

Signature:
Designation:

 L&T IDPL	Standard Operating Procedure	Doc. No. 21
		Rev. No. 0
	Waste Management	Date : 14/08/2015
		Page 7 of 13

The Hazardous Wastes (Management, Handling and Transboundary Movement) Rules 2008

FORM 2
(See rule 5 (4))

Form for Grant/Renewal of Authorisation by SPCB/PCC for Occupier, Reprocessors, Reusers and Operators of Facilities for Collection, Reception, Treatment, Storage, Transport & Disposal of Hazardous Wastes.


1. Number of authorisation and date of issue
2. of is hereby granted an authorisation to operate a facility for collection, reception, treatment, storage, transport and disposal of hazardous waste on the premises situated at
3. The authorisation granted to operate a facility for generation, collection, reception, treatment, storage, transport and disposal of hazardous wastes.
4. The authorisation shall be in force for a period of
5. The authorisation is subject to the conditions stated below and the such conditions as may be specified in the rules for the time being in force under the Environment (Protection) Act, 1986.

Date:

Signature of Issuing Authority
Designation and Seal

Terms and conditions of Authorisation

1. The authorisation shall comply with the provisions of the Environment (Protection) Act, 1986, and the rules made there under.
2. The authorisation or its renewal shall be produced for inspection at the request of an officer authorized by the SPCB/PCC.
3. The person authorised shall not rent, lease, sell, transfer or otherwise transport the hazardous wastes without obtaining prior permission of the SPCB/PCC.
4. Any unauthorized change in personnel, equipment or working conditions as mentioned in the application by the person authorised shall constitute a breach of his authorisation.
5. It is the duty of the authorised person to take prior permission of SPCB/PCC to close down the facility.
6. An application for the renewal of an authorisation shall be made as laid down under these Rules.
7. Any other conditions for compliance as per the Guidelines issued by MoEF or CPCB.

 L&T IDPL	Standard Operating Procedure	Doc. No. 21
		Rev. No. 0
	Waste Management	Date : 14/08/2015
		Page 8 of 13

The Hazardous Wastes (Management, Handling and Transboundary Movement) Rules 2008

FORM-3
[See Rule 9(1)]

Format for maintaining records of hazardous waste at the facility

1. Name and address of the occupier or operator of a facility;
2. Date of issuance of authorisation and its reference number;
3. Description of hazardous waste:

Physical form with description	Chemical form	Total volume and weight (In kg.)
--------------------------------	---------------	----------------------------------

4. Description of storage and treatment of hazardous waste:

Date	Method of storage of hazardous wastes	Date	Method of treatment of hazardous wastes
------	---------------------------------------	------	---

5. Details of transportation of hazardous waste:

Name & address of consignee of package	Mode of packing/ of the waste for transportation	Mode of transportation to site of disposal	Date of transportation
--	--	--	------------------------

6. Details of disposal of hazardous waste:

Date of disposal	Concentration of hazardous material in the final waste form	Site of disposal (Identify the location on the relevant layout drawing for reference)	Method of disposal	Persons involved in disposal
------------------	---	---	--------------------	------------------------------

7. Data of environmental surveillance:

Date of measurement	Analysis of ground water			Analysis of soil samples			Analysis of air sampling		Analysis of any other samples (give details)
	Location of sampling	Depth of sampling	Data	Location of sampling	Depth of sampling	Data	Location of sampling	Data	

8. Details of the hazardous wastes reused and recycled:


Date	Total quantity of hazardous waste generated	Details of hazardous waste minimization activity	Material received	Final quantity of waste generated	Net reduction in waste generation quantity and percentage
------	---	--	-------------------	-----------------------------------	---

Place:

Date:

Signature:

Designation:

 L&T IDPL	Standard Operating Procedure	Doc. No. 21
		Rev. No. 0
	Waste Management	Date : 14/08/2015
		Page 9 of 13

FORM 4
(See rules 5(6) and 22 (2))

**FORM FOR FILING ANNUAL RETURNS
BY THE OCCUPIER OR OPERATOR OF FACILITY**


[To be submitted by occupier/operator of disposal facility to State Pollution Control Board/Pollution Control Committee by 30th June of every year for the preceding period April to March]

1.	Name and address of the generator/operator of facility				
2.	Name of the authorised person and full address with telephone and fax number				
3.	Description of hazardous waste	Physical form with description		Chemical form	
4.	Quantity of hazardous wastes (in MTA)	Type of hazardous waste		Quantity (in Tonnes/KL)	
		(a)			
		(b)			
		(c)			
5.	Description of Storage				
6.	Description of Treatment				
7.	Details of transportation	Name & address of consignee	Mode of packing	Mode of transportation	Date of transportation
8.	Details of disposal of hazardous waste	Name & address of consignee	Mode of packing	Mode of transportation	Date of transportation
9.	Quantity of useful materials sent back to the manufacturers* and others*	Name and type of material sent back to		Quantity in Tonnes/KL	
		Manufacturers			
		Others*			

* delete whichever is not applicable
enclose list of other agencies.

Date :
Place:

Signature :
Designation:

 L&T IDPL	Standard Operating Procedure	Doc. No. 21
		Rev. No. 0
	Waste Management	Date : 14/08/2015
		Page 10 of 13

FORM 11
(See rule 20(2))

TRANSPORT EMERGENCY (TERM) CARD

[To be carried by the transporter during transportation of hazardous wastes,
 provided by the Occupier or Operator of a Facility]

1. Characteristics of hazardous wastes

S. No.	Type of Waste	Physical Properties/	Chemical Constituents	Exposure Hazards	First Aid Requirements

2. Procedure to be followed in case of fire


3. Procedure to be followed in case of spillage/accident/explosion

4. For expert services, please contact

i) Name & Address

ii) Telephone No.

(Name and Signature of Occupier/authorized representative)

 L&T IDPL	Standard Operating Procedure	Doc. No. 21
		Rev. No. 0
	Waste Management	Date : 14/08/2015
		Page 11 of 13

FORM 12
(See rule 20(2))

MARKING OF HAZARDOUS WASTE CONTAINER

HAZARDOUS WASTE *


Handle with Care:

Waste Category No	Compatible Group
Total Quantity	Date of Storage
Contents and State of the Waste	
Sender's Name & Address	Receiver's Name & Address
Phone	Phone
E-mail.....	E-mail.....
Tel. & Fax No.....	Tel. & Fax No.....
Contact Person	Contact Person
In case of emergency please contact.....	

Note:

1. Background colour of lab I fluorescent yellow.
2. The words 'HAZARDOUS WASTES' & 'HANDLE WITH CARE' to be prominent and written in red in Hindi, English and in Vernacular Language
3. Label should be of non-washable material.

* delete which ever is not applicable.

 L&T IDPL	Standard Operating Procedure	Doc. No. 21
		Rev. No. 0
	Waste Management	Date : 14/08/2015
		Page 13 of 13

FORM 14
(See rule 24)

FORMAT OF ACCIDENT REPORT

[To be submitted by the occupier or operator of a facility and the transporter to the SPCB/PCC]


1. The date and time of the accident :
2. Sequence of events leading to accident :
3. The hazardous waste involvement in accident :
4. The date for assessing the effects of the accident on health or the environment :
5. The emergency measures taken :
6. The steps taken to alleviate the effects of accidents :
7. The steps taken to prevent the recurrence of such an accident :

[Place:

Signature:

Date :


Designation]

 L&T IDPL	Standard Operating Procedure	Doc. No. 22
		Rev. No. 1
	Monitoring – Ambient Conditions	Date : 14/08/2015
		Page 1 of 2

1. **Purpose** : To periodically (quarterly) monitor effect on environmental parameters due to our project activities
2. **Scope/Applicability** : All Sites
3. **Responsibility** : Contractor / PM/ Site-in-charge
4. **Key Words** : **Air pollution** : The condition in which air is contaminated by foreign substances, or the substances themselves.
Air pollution consists of gaseous, liquid or solid substances that, when present in sufficient concentration, for a sufficient time, and under certain conditions, tend to interfere with human comfort, health or welfare and cause environmental damage.
NABL : National Accreditation Board for Laboratories

5. Procedure :


S.No.	Activity	Responsibility
	Parameters to be monitored	
5.1	The following shall be monitored periodically at the project sites as stated in the Consents / approvals by the SPCBs for the operations under our control. <ul style="list-style-type: none"> • Ambient Air Quality Monitoring (Stack Gas Monitoring of DG Set) • Noise Level Monitoring (DG Set) • Water Quality Monitoring (Where applicable) In the consents / approvals (CCA) by the SPCBs / Authorities, the permitted levels for various environmental parameters to be maintained would be listed.	Contractor / PM/ Site-in-charge
	Selection / Approval of external agencies	
5.2	External agencies shall be engaged to monitor the ambient environmental parameter.	Contractor / PM/ Site-in-charge
5.3	Such agencies shall be NABL accredited or approved by MoEF or State PCBs. Before engaging them a copy of the latest approval shall be obtained from them.	Contractor / PM/ Site-incharge
5.4	The Contractors / PM shall verify the approval before authorizing their appointment	Contractor / PM/ Site-in-charge

 L&T IDPL	Standard Operating Procedure	Doc. No. 22
		Rev. No. 1
	Monitoring – Ambient Conditions	Date : 14/08/2015
		Page 2 of 2

	Reports by Monitoring agencies	
5.5	The agencies shall prepare a monitoring plan as prescribed in project specific requirement and submit the same for monitoring by the Site.	Contractor / PM/ Site-in-charge
5.6	The agencies shall monitor the ambient environmental parameter as per plan.	Contractor / PM/ Site-in-charge
5.7	The report by the agencies shall mention in their reports the following: <ul style="list-style-type: none"> • Reference of IS Standards • Methods of measurement • Observed values • An analysis of the observations 	Contractor / PM/ Site-in-charge
5.8	On receipt of the above reports, the contractors / PM shall review and plan corrective action for any deviations reported and the same shall be mitigated.	Contractor / PM/ Site-in-charge
5.9	Records <ul style="list-style-type: none"> • Ambient Conditions Monitoring Reports by External agencies • Letters of approval of the agencies monitoring • CCA / Approvals from PCBs 	Contractor / PM/ Site-in-charge


6. Legal & Statutory requirements

- Environment Protection Act, 1986.
- The Noise (Regulation and Control) Rules, 2005.
- The Water (Prevention and Control of Pollution) Act, 1977 & Rules 1978.
- The Air (Prevention and Control of Pollution) Act, 1981 & Rules, 1982 / 1983.

 L&T IDPL	Standard Operating Procedure	Doc. No. 23
		Rev. No. 0
	Hand Tools	Date : 14/08/2015
		Page 1 of 2


1. **Purpose** : To avoid any personal injury / and damage to jobs
2. **Scope/Applicability** : All jobs at Sites / Offices
3. **Responsibility** : Contractors / PM / Site in-charge
4. **Key Words** :
5. **Procedure** :

S.No.	Activity	Responsibility
	General	
5.1	All hands tools shall be maintained in safe condition and use of unsafe hand tools shall not allowed or permitted.	Contractors / PM / Site in-charge / Site Supervisor
5.2	Tool box inspection should be done as a routine. This can be on a random basis by the Supervisors.	Site Supervisor
5.3	Tool cards to be maintained for issue / replacement against broken / damaged ones.	Site Supervisor
5.4	To use non-sparking tools in fire prone areas.	Site Supervisor/ Worker
5.5	Tools like screw drivers, pliers used in electrical jobs should be insulated.	Site Supervisor/ Worker
5.6	Personnel using hand tools and exposed to the hazard of falling, flying, abrasive, and sparking etc., shall be provided with the appropriate personal protective equipment necessary to protect them from the hazards;	Site Supervisor/ Worker
5.7	Only knives of retractable blades shall be used in the worksite.	Site Supervisor/ Worker
5.8	Wrenches including adjustable pipe end and socket wrenches shall not be used when the jaws are sprung to the point that slippage occurs;	Site Supervisor/ Worker
5.9	Impact tools such as drift pins, wedges and chisels shall be kept free of mushroomed heads;	Site Supervisor/ Worker
5.10	The wooden handles of tools shall be kept free of splinters or cracks and shall be kept tight on the tools.	Site Supervisor/ Worker
5.11	A pilot hole shall always be driven before driving a screw.	Site Supervisor/ Worker

 L&T IDPL	Standard Operating Procedure	Doc. No. 23
		Rev. No. 0
	Hand Tools	Date : 14/08/2015
		Page 2 of 2

	Common causes of accidents due to Hand tools are :	
5.12	<ul style="list-style-type: none"> • Wrong tool for job • Fall of tool not stored properly • Wrong size of tool • Wrong method of handling/ carrying • Poorly maintained tool • Unauthorized modification of tool • Defect in tool 	All concerned workers
	Important preventive measures are :	
5.13	<ul style="list-style-type: none"> • Use the right tool • Use a tool in good condition • Use the tool in right way • Keep tools in a safe place • Use appropriate PPE • Carry tools in tool box/bag 	All concerned workers
5.14	Records Tool cards	Contractors / PM / Site in-charge


6. Legal & Statutory requirements - None

 L&T IDPL	Standard Operating Procedure	Doc. No. 24
		Rev. No. 0
	Construction Equipment	Date : 14/08/2015
		Page 1 of 3


1. Purpose : For safety while using Construction equipments
2. Scope/Applicability: All sites
3. Responsibility : Contractors / PM / Site in-charge
4. Key Words : Construction equipment:
Mechanized equipment designed to perform construction operations. Construction machineries include dumpers and dump trucks, lift trucks and telescopic handlers piling rigs, vibro hammers, mobile elevating work platforms, cranes, tipper lorries, lorry loaders, 360° excavators, 180° backhoe loaders, crawler tractors, scrapers, graders, loading shovels, trenchers, side booms, pavers, planers, chippers, road rollers, tankers and bowsers, trailers, hydraulic and mechanical breakers etc.

5. Procedure

S.No.	Activity	Responsibility
5.1	Inspection : <ul style="list-style-type: none"> Construction equipment deployed at site shall be inspected by responsible person once in a month and inspection record shall be maintained. The name of the responsible person shall be intimated to the concerned authorities. Lifting equipment and its accessories shall be inspected by a competent person on periodical basis as required by the BOCW Act. 	Contractors / PM / Site in-charge / P&M Department
5.2	The equipment shall not be deployed for work on gradients beyond the equipments capability. <ul style="list-style-type: none"> No passengers shall be carried, unless specific seating has been provided in accordance with the manufacturer's recommendations. It shall be ensured that all motors, cogwheels, chains and friction gearing, flywheels, shafting, dangerous and moving parts of machinery are securely fenced. The fencing of dangerous part of machinery is not removed while such machinery is in motion or in use. 	Contractors / PM / Site in-charge Site Supervisor
5.3	<ul style="list-style-type: none"> The manufacturer's recommended bucket size shall be used in excavators. 	Site Supervisor/Site incharge

 L&T IDPL	Standard Operating Procedure	Doc. No. 24
		Rev. No. 0
	Construction Equipment	Date : 14/08/2015
		Page 2 of 3


	<ul style="list-style-type: none"> • If excavators operating on a gradient then, it must be ensured that the working cycle is slowed down, that the bucket does not extend too far in the downhill direction. • Higher capacity excavator must never be permitted to travel in a confined area, or around people, without a banksman to guide the driver. • On wheeled excavators, it is essential that the tyres are in good condition and correctly inflated. If stabilizing devices are fitted, they should be employed when the machine is excavating. 	
5.4	<ul style="list-style-type: none"> • Trucks, tippers, dumpers used in transportation of excavated earth or other materials, which are loaded by mechanical excavators, shovels / loaders, shall have strong canopies over the driver's cabin to protect them from injuries while loading. • The driver's cabin for all the vehicles at construction site shall have a system of sound and vibration suppression, seat belts, reverse horn/alarm, rear view mirror, wide windshield, triplex glass, wiper, sun visor, etc. 	Contractors / PM / Site in-charge Site Supervisor
5.5	Wheel stops at a sufficient distance from the edges of excavations, spoil heaps, pits, etc., shall be provided to avoid dumper and dump truck accidents.	Site Supervisor/Operator
5.6	<ul style="list-style-type: none"> • Wherever tractor dozer is employed for clearing scrub or felling trees, it shall be provided with adequate driver protection. • When two or more scrapers are working on the same job, a minimum distance of at least 25metres shall be kept between them. • When the front shovel of the 180° backhoe loaders is being employed, the backhoe attachment shall be in its —travel position, with the safety locking device in place. • When operating the backhoe in poor ground conditions, the stabilizers tend to sink into the surface of the ground, reducing stability. Therefore frequent checks shall be made for the stability of the machine. The loading shovel should always be lowered to the ground to stabilize the machine when the backhoe is employed. 	Site Supervisor/Operator

 L&T IDPL	Standard Operating Procedure	Doc. No. 24
		Rev. No. 0
	Construction Equipment	Date : 14/08/2015
		Page 3 of 3

5.7	For the construction equipment requiring periodical inspection / testing, the same shall be carried out as prescribed. (Refer SOP Doc No. 17 Machine Safety & Statutory Requirements)	
5.8	Records : <ul style="list-style-type: none"> Authorization for Responsible Person to the construction equipment (Internal memo) 	Contractors / PM / Site In-charge Site Supervisor

6. Legal & Statutory requirements

- The Building and Other Construction Workers (Regulation of Employment & Conditions of Service) Act, 1996 / Rules 1998

 L&T IDPL	Standard Operating Procedure	Doc. No. 25
		Rev. No. 0
	Transportation Vehicles	Date : 14/08/2015
		Page 1 of 1


1. **Purpose** : For safety while using Transportation vehicles
2. **Scope/Applicability** : All sites
3. **Responsibility** : Contractors /Site In-charge /PM
4. **Key Words** : RC Book – Certificate of Registration of a Motor Transport vehicle
PUC – Pollution Under Control certificate

5. Procedure

S.No.	Activity	Responsibility
5.1	<ul style="list-style-type: none"> All vehicles used at construction site shall comply with the requirements of the Motor Vehicles Act, 1988 (59 of 1988) and have valid documents like RC Book, PUC certificate, etc. The operator should have a valid license for operation of such equipments. It shall be ensured that transport vehicles like dumper, tipper, truck, etc. shall be accompanied by helper and driver shall take all signals from his helper only. 	Contractors /Site In-charge /PM
5.3	<ul style="list-style-type: none"> Trucks, tippers, dumpers used in transportation of excavated earth or other materials which are loaded by mechanical excavators, shovels / loaders, shall have strong canopies over the driver's cabin to protect them from injuries while loading. Stop chain shall be used while loading and transportation so that the back door of the dumper does not open undesirably The vehicles shall not be overloaded and the loading / stacking shall be even. The driver's cabin shall have canopies, a system of sound and vibration suppression, seat belts, reverse horn/alarm, rear view mirror, wide windshield, wiper, sun visor, etc. 	Contractors /Site In-charge /PM
5.6	While transporting hot material / debris, the same shall be suitably covered, to prevent spillages on roads during transportation.	Site Supervisor / /Site In-charge
5.7	Records to be maintained : <ul style="list-style-type: none"> RC Book / Tax receipt, and Insurance Policy document / PUC License of the heavy equipment operators / Drivers 	Contractors /PM/Site In-charge


6. Legal & Statutory requirements

Motor Vehicle Act, 1988 and its amendments.

 L&T IDPL	Standard Operating Procedure	Doc. No. 26
		Rev. No. 0
	Electrical System – Statutory Requirements	Date : 14/08/2015
		Page 1 of 4

1. **Purpose** : The purpose of this SOP is to define a set of mandatory requirements to be on met for operating electrical equipment and to ensure Electrical safety.
2. **Scope** : All Offices & Sites.
3. **Responsibility** : Contractors /Site In-charge /PM /Electrical in-charge
4. **Key Words** :
5. **Procedure** :

S.No.	Activity	Responsibility
	Statutory Approval	
5.1	<p>Sites shall receive, maintain and review, whenever due for renewal, all statutory approvals like:</p> <ul style="list-style-type: none"> • Approval for connected load, • Electrical installation drawings and installation, • NOC from State Electricity Board and electrical inspector for DG Sets as and when any change is made. • Regular annual electrical inspection report by electrical inspectors if carried out must be available with the unit. • All electrical equipment and appliances shall conform to applicable BIS standards / IE rules. 	Contractors/PM/ Site In-charge
5.2	<p>Line Diagrams & Approvals</p> <ul style="list-style-type: none"> • All Sites shall maintain an upto date single line diagram for all electrical distribution systems. As and when modifications are done, the approved drawings for the electrical system shall also be maintained. • Specific drawing approval by competent person (with specialist consultation, wherever necessary) before undertaking the modification must be got. 	Contractors /Site In-charge /PM /Electrical in-charge
	Earthing	
5.3	<p>An Earthing Plan must be maintained . All earthing conductors shall be checked for connection up to the earth grid once in twelve months and findings recorded.</p>	Contractors / Site In-charge /PM /Electrical in-charge
	Testing & Inspections	
5.4	Testing of all Secondary Protection through Residual Current Circuit Breakers (RCCBs) shall be done as required.	Contractors/ Electrical in-charge
5.5	Transformer oil break down value shall be checked as required.	Contractors/ Electrical in-charge


 L&T IDPL	Standard Operating Procedure	Doc. No. 26
		Rev. No. 0
	Electrical System – Statutory Requirements	Date : 14/08/2015
		Page 2 of 4

5.6	Protective relays (where applicable) shall be checked and calibrated once in twelve months.	Contractors/ Electrical in-charge
5.7	The Electrical Inspection of the sites to be carried out once in twelve months by the Electrical Inspector and records to be maintained.	Contractors/ Electrical in-charge PM
5.8	Modifications to Electrical Systems or Equipment: <ul style="list-style-type: none"> In general, electrical systems or equipment shall not be tampered with (including PCCs / MCCs / transformers etc.) and no unauthorized connections shall be permitted. No modifications shall be carried out on fixed electrical installations or portable electrical tools without a "modification note" prepared and authorized both by a competent person and the PM. 	Contractors/ Electrical in-charge PM
	General	
5.9	Signages like Danger / Caution / High Voltage shall be displayed in Electrical Panel Room / Transformer Yard.	Contractors/ Electrical in-charge PM
5.10	Rubber mats 3' x 1" to be provided in front and back of Electrical panels. The length of the mat shall be provided depending upon the length of the panel	Contractors/ Electrical in-charge/ PM
5.11	All measuring / test equipment like multimeters, tong testers etc. should be checked periodically and log maintained.	Contractors/ Electrical in-charge/ PM
5.12	Records <ul style="list-style-type: none"> The copies of approval (No./EIM/PLN/1724/20111 from the office of the Electrical Inspector <u>attached as a sample</u>) Completion certificate as per IS: 732 – 1989 (Reaffirmed in 2005). Earthing Plan / Earth Pit test records. ELCB test records. Transformer oil test records. Protective relays test records Annual Inspection Report by the Electrical Inspector. 	Site In-charge / Contractors /PM

6. Legal & Statutory requirements

a) The Electricity Act, 2003

b) Indian Electricity Rules, 1956 (as amended in 2005)

 L&T IDPL	Standard Operating Procedure	Doc. No. 26
		Rev. No. 0
	Electrical System – Statutory Requirements	Date : 14/08/2015 Page 3 of 4

OFFICE OF THE ELECTRICAL INSPECTOR

Block-I, 3rd Floor, M.S. Building, Mehsana

Tel. : 02762-221087

NO./EIM/PLN/1424/2011.

DATE:- 9 / 11 / 2011.

To,
M/S. L & T Halol Shamlaji Tollway Limited ,
At: Dherakhanta na Muvada, Ta: Malpur,
Dist: Sabarkantha ,

Sub: Plan Approval for 1 X 400 KVA Transformer. & 2 X 160 KVA Stand By D.G.Set.

Referring to letter NO. -NH did. 04/ 11 /2011, The Undersigned is pleased to approve the layout/ alteration as shown in the enclosed drawing Subject to the following conditions.

1. Work shall be carried out by the licensed Electrical Contractor of the Gujarat State.
2. The Work shall be carried out in accordance with the relevant standard of the Bureau of Indian Standard.
3. If the construction is found defective in actual practice or any modification is necessary the same shall have to be carried out as may be required by this Department.
4. Adequate earthing shall be provided wherever required under the Indian Electricity Rules, 1956.
5. The value of earth resistance P.L value shall be furnished along with the installation test report on completion of the work.
6. Adequate fire protection shall be provided as required under Rules-64(2) (f) of the I.E. Rules-1956.
7. Energy meter duly tested by the GEB shall be installed of DG set.

Encl: Drawings.

(Shri K.B.Desai)
Electrical Inspector
Mehsana.

- Note: Plan Approval Fee of Rs.2000 /has been received Vide Cheque No.239896 Date: 22.09. 2011, H.D.F.C.Bank Limited ,
- Copy to: The Asstt. Electrical Inspector Himatnagar for information

Save Energy for the Benefit of Self & Nation



CERTIFICATE

This is to certify that the inspection of Electrical Installation of 400 KVA, 11KV/433 V. Transformer of M/s. L & T Halol Shamlaji Tollway Limited, At- Dherakhanta Na Muvada, Ta- Malpur, Dist- Sabarkantha has been carried out by this department on dtd.: 13.12.2011 & the same is found in order. Permission is hereby granted to charge the same as required under rule 63 of the Indian Electricity Rules 1956.

The Details of Transformer is as under.


TRANSFORMER	
Capacity	400 KVA
Make	Powerlite Transformers
Sr. No.	PLE-350
Voltage	11KV / 433 V
Current	21.0 / 533.33 AMP

No.EIM/INS/CRT/1910/2011,
Office of the Electrical Inspector
Block No:1, 3rd floor, M.S. Building,
Mehsana-384001,
Date: 13 / 12 / 2011,

(Shri B.B.Desai)
Electrical Inspector
Mehsana


- ✓ Copy f.w.c.s to: The Manager M/s. L & T Halol Shamlaji Tollway Limited, At- Dherakhanta Na Muvada, Ta- Malpur, Dist- Sabarkantha for information
- Copy f.w.c.s to: The Executive Engineer (O&M) D.G.V.C.L. At: Modasa, Ta- Modasa Dist- Sabarkantha, for information.
- Copy f.w.c.s to: Asstt. Electrical Inspector, Himatnagar, for information & inspection fees of Rs. 2250/- recovered vide D.O. No. 239902 Dtd:- 22.09.2011. H.D.F.C. Bank Ltd,

Save Energy, Serve The Nation

 L&T IDPL	Standard Operating Procedure	Doc. No. 27
		Rev. No. 0
	Diesel Generation Set	Date : 14 /08/2015
		Page 1 of 4

1. **Purpose** : For safe operation of diesel generator set
2. **Scope/Applicability** : All Offices & sites
3. **Responsibility** : Contractors /Site In-charge /PM / Electrical in-charge
4. **Key Words** : DG Set - Diesel generation set
5. **Procedure :**


S.No.	Activity	Responsibility
5.1	Clearance to be taken from relevant statutory bodies for operating the generator such as : <ul style="list-style-type: none"> Electrical Inspectorate (NOC for Energizing / Operation) Pollution Control Board (Norms for Smoke emission / Noise Control) and the same to be renewed at the recommended intervals.	Contractors /Site In-charge /PM / Electrical in-charge
5.2	The generator set shall be operated only by the staff who have received training on the operation and the maintenance / repair shall be made by the authorized staffs.	Contractors /Site In-charge /PM / Electrical in-charge
5.3	Operation and maintenance staff shall be aware of the safety, preventive actions and operation maintenance procedure as laid out in the manufacturer's manual.	Electrical in-charge Electrician
5.4	<ul style="list-style-type: none"> It shall be ensured that Personal Protective Equipments like rubber hand gloves, masks, ear plugs, etc., are used while operating and maintenance of the generator. Sound proof chamber for DG set to be provided in case the supplier has recommended the same or the noise level make it mandatory. The generating set shall be connected only to loads and / or electrical systems that are compatible with its electrical characteristics and that are within its rated capacity 	Contractors /Site In-charge /PM
5.5	Operation / Safety Precautions: <ul style="list-style-type: none"> The generator sets can only be started under safe conditions. It is to be ensured that the generator sets are not started when any abnormal conditions are noticed. When cleaning, maintenance and repair of the generator sets are undertaken, the generator set shall be shut down and warning label placed near it to ensure safety. 	Electrical in-charge Electrician

 L&T IDPL	Standard Operating Procedure	Doc. No. 27
		Rev. No. 0
	Diesel Generation Set	Date : 14 /08/2015
		Page 2 of 4

5.6	Fire Safety - <ul style="list-style-type: none"> No inflammable materials and explosives (liquid) shall be kept near the engine / exhaust pipe and silencer. It shall be ensured that the exhaust pipe and silencer are covered with insulation. Smoking, spark over, and other fire lighting activities are not to be permitted in the area which is close to the battery and fuel. In the generator set room, A, B & C Type of fire extinguishers shall be provided, and operators shall be familiar on how to use them. (Refer SOP Doc. No. 13 – Fire Safety)	Contractors / Electrical in-charge / Electricians
5.7	The ambient conditions due to DG Set operations shall be monitored as required. (Refer SOP Doc.No. 23 - Monitoring - Ambient Conditions)	
5.8	Records to be maintained : <ul style="list-style-type: none"> The copies of approval (No./EIM/PLN/1724/20111 from the office of the Electrical Inspector attached <u>as a sample</u>) Preventive/maintenance records Ambient Air monitoring / Noise records. 	Contractors /Site In-charge /PM / Electrical in-charge /

6. Legal & Statutory requirements:

Indian Electricity Act, 2003.

 L&T IDPL	Standard Operating Procedure	Doc. No. 27
		Rev. No. 0
	Diesel Generation Set	Date : 14/08/2015
		Page 3 of 4

OFFICE OF THE ELECTRICAL INSPECTOR

Block-I, 3rd Floor, M.S. Building, Mehsana

Tel. : 02762-221087

NO./EIM/PLN/1742/2011

DATE:- 9 / 11 / 2011

To,
 ✓ M/S, L & T Halol Shamlaji Tollway Limited,
 At: Gajan, Ta: Modasa,
 Dist: Sabarkantha,

Sub: Plan Approval for 1 X 400 KVA Transformer & 2 X 160
 KVA Stand By D.G.Set.

Referring to letter NO. -Nil dtd. 04/11/2011, The Undersigned is pleased to approve the layout/ alteration as shown in the enclosed drawing Subject to the following conditions.

1. Work shall be carried out by the licensed Electrical Contractor of the Gujarat State.
2. The Work shall be carried out in accordance with the relevant standard of the Bureau of Indian Standard.
3. If the construction is found defective in actual practice or any modification is necessary the same shall have to be carried out as may be required by this Department.
4. Adequate earthing shall be provided wherever required under the Indian Electricity Rules, 1956.
5. The value of earth resistance P.L. value shall be furnished along with the installation test report on completion of the work.
6. Adequate fire protection shall be provided as required under Rules 64(2) (f) of the I.E. Rules 1956.
7. Energy meter duly tested by the GEB shall be installed of DG set.

Encl: Drawings.

(Shri K.B.Desai)

**Electrical Inspector
 Mehsana.**

• Note: Plan Approval Fee of Rs.2000/-has been received Vide Cheque No. 239898 Date: 22.09.2011, H.D.F.C.Bank Limited.

• Copy to: The Asstt. Electrical Inspector Himatnagar for information

Save Energy for the Benefit of Self & Nation



L&T IDPL

Standard Operating Procedure

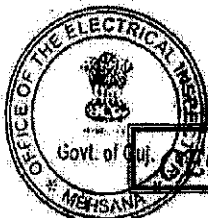
Diesel Generation Set

Doc. No. 27

Rev. No. 0

Date : 14 /08/2015

Page 4 of 4



CERTIFICATE

This is to certify that the inspection of Electrical installation of 400 KVA, 11KV/433 V. Transformer of M/s. L & T Halol Shamlaji Tollway Limited, At- Gajan, Ta- Modasa, Dist- Sabarkantha has been carried out by this department on dtd: 13.12.2011 & the same is found in order.

Permission is hereby granted to charge the same as required under rule 63 of the Indian Electricity Rules 1956.

The Details of Transformer is as under.


TRANSFORMER	
Capacity	400 KVA
Make	Powerite Transformers
Sr. No.	PLT-349
Voltage	11KV / 433 V
Current	21.0 / 533.33 AMPS

No.EIM/INS/CRT/1907/2011,
Office of the Electrical Inspector
Block No:1, 3rd floor, M.S. Building,
Mehsana-384001,
Date: 13 / 12 /2011,

(Shri R.B.Desai)
Electrical Inspector
Mehsana


- Copy f.w.c.s to:- The Manager M/s. L & T Halol Shamlaji Tollway Limited, At- Gajan, Ta- Modasa, Dist- Sabarkantha for information
- Copy f.w.c.s to:- The Executive Engineer (O&M) G.V.C.L. At: Modasa, Ta- Modasa Dist:- Sabarkantha for information.
- Copy f.w.c.s to:- Asstt. Electrical Inspector, Himatnagar, for information & inspection fees of Rs. 2250/- recovered vide O.D. No. 239900 Dtd:- 22.09.2011. H.D.F.C. Bank, Ltd.

Save Energy, Serve The Nation


 L&T IDPL	Standard Operating Procedures	Doc. No. 28
		Rev. No. 0
	Power Tools	Date : 14/08/2015
		Page 1 of 3

1. **Purpose** : To avoid any personal injury / damage to jobs
2. **Scope/Applicability** : All Sites
3. **Responsibility** : Contractors /Site In-charge /PM /P&M Department
4. **Key Words** :
5. **Procedure** :

S.No.	Activity	Responsibility
	General	
5.1	Power tools include drills, planes, routers, saws, jackhammers, grinders, sprayers, chipping hammers, air nozzles and drills. All power tools and similar equipment, shall be maintained in safe condition.	Contractors /Site In-charge /PM /P&M Department
5.2	Only personnel who have been trained in the operation of the particular tool shall be allowed to operate power-actuated tools;	Contractors /Site In-charge /PM /P&M Department
5.3	Safety Pre-cautions <ul style="list-style-type: none"> • Electric power operated tools shall be either of the approved double-insulated type or shall be grounded. • Where power operated tools are designed to accommodate guards, they shall be equipped with such guards, when in use. • It shall be ensured that all tools shall be tested each day before loading to ensure that they are in proper working condition. This includes checking of earthing. • Any tool not found in proper working order, or that which develops a defect during use, shall be immediately removed from service and not used until properly repaired and the same to be duly identified with a tag. • Before making any adjustments or changing attachments, it shall be ensured to disconnect the tool from the power source. • Workers shall never stand on the top of the ladder to drill holes in walls / ceilings, which can be hazardous, instead standing on the fourth or fifth rung shall be recommended • Electric plane shall not be operated with loose clothing or long scarf or open jacket. 	Contractors /Site In-charge /PM /P&M Department

 L&T IDPL	Standard Operating Procedures	Doc. No. 28
		Rev. No. 0
	Power Tools	Date : 14/08/2015
		Page 2 of 3


5.4	Air pressure is set at a suitable level for air actuated tool or equipment being used. Before changing or adjusting pneumatic tools, air pressure shall be turned off.	Site Supervisor / Site In-charge
	Explosive actuated tools	
5.5	Only trained employees shall use explosive actuated tools and the tool shall also be unloaded when not in use.	Contractors /Site In-charge /PM /P&M Department
5.6	Explosive actuated tools and their explosives shall be stored separately and be taken out and loaded only before the time of immediate use.	Contractors /Site In-charge /PM /P&M Department
5.7	Misfired cartridges of explosive actuated tools must be placed in a container of water and be disposed off safely from the site.	Site In-charge
	Pneumatic Tools:	
5.8	Compressed air shall not be used for cleaning of dust on the clothes of the workers.	Site Supervisor / Site In-charge
5.9	The compressed air line shall not be bent to stop the flow of air. This may cause building of pressure resulting in bursting of pipe and injury to the person.	Site Supervisor / Site In-charge
5.10	The operator shall use earmuffs on regular basis. The person cleaning certain area with compressed air shall be given safety goggles, dust respirators and ear plugs.	Site Supervisor / Site In-charge
	Abrasive Tools:	
5.11	All abrasive wheels shall be closely inspected and ring tested before mounting to ensure that they are free from cracks or defects; All employees using abrasive wheels shall be protected by suitable eye protection equipment.	Site In-charge/P&M Department
5.12	Floor and bench-mounted grinders shall be with work-rests, which shall be rigidly supported and readily adjustable. Such work-rests shall be kept at a distance not to exceed 5 mm from the surface of the wheel;	Site In-charge/P&M Department
	Wood working tools	
5.13	All fixed power driven woodworking tools shall be provided with a disconnect switch that can either be locked or tagged in the off-position;	Site Supervisor/Site In-charge

 L&T IDPL	Standard Operating Procedures	Doc. No. 28
		Rev. No. 0
	Power Tools	Date : 14/08/2015
		Page 3 of 3

5.14	Automatic feeding devices shall be installed on machines wherever the nature of the work will permit. Feeder attachments shall have the feed rolls or other moving parts covered or guarded so as to protect the operator from hazardous points;	Site In-charge/ P&M Department
5.15	Only non-sparking tools shall be used in an explosive or flammable atmosphere;	Site Supervisor/Site In-charge
5.16	Records : Manufacturers Operating Instructions for Power tools	Contractors /PM/P&M Department & Site In-charge

6. Legal & Statutory requirements


The Building and Other Construction Workers (Regulations of Employment and condition of Service) Act, 1996

 L&T IDPL	Standard Operating Procedure	Doc. No. 29
		Rev. No. 0
	OPERATION AND MAINTENANCE OF A/C PLANT & SYSTEM	Date : 14/08/2015
		Page 1 of 1

1. **Purpose** : To ensure that the Air conditioning units are operated to ensure energy efficiency and to ensure safety during the repair and maintenance of the A/C plant .
2. **Scope/Applicability** : All Offices and Sites
3. **Responsibility** : Contractors /PM/ Site in-charge /Electrical & Maintenance Department
4. **Key Words** : A/C – Air conditioning unit
5. **Procedure** :

S.No.	Activity	Responsibility
5.1	Carry out preventive and routine maintenance regularly as per the manufacturer's recommendations.	Electrical & Maintenance Department
5.2	Switch on the system about 30 min before the office hours so that working may be commenced in proper atmosphere and the system to be switched off half an hour before close of office hours	Electrical & Maintenance Staff/Operator
5.3	Monitor & Control all plant parameters as per required specification to ensure the A/C units performs effectively.	Electrical & Maintenance Department
5.4	Proper ventilation of the A/C plant room. Exhaust fan provided must be in continuous service and the outlet suitably located so that it does not impact the nearby work environment.	Contractors /PM/ Site in-charge
5.5	Proper lighting of the plant room to be ensured	Contractors /PM/ Site in-charge
5.6	Housekeeping of the A/C plant room to be proper. It should be ensured that the filters are cleaned regularly to have optimum efficiency.	Contractors /PM/ Site in-charge
5.7	It should be ensured that the contractor who does the repairs of AC units follow safety pre-cautions during gas filling. (As the refrigerant gas (Freon or R22 Refrigerant) is highly pollutant ozone depleting substance, care must be taken to avoid gas leakage.)	Contractors /PM/ Site in-charge/ Maintenance Department
5.8	Fire Safety measures as required to be maintained.	Contractors /PM/ Site in-charge/ Maintenance Department
5.9	Records A/C Maintenance Records	

6. Legal & Statutory requirements - None

 L&T IDPL	Standard Operating Procedure	Doc. No. 30
		Rev. No. 0
	ILLUMINATION	Date : 14/08/2015
		Page 1 of 2


1. **Purpose** : To ensure adequate lighting at work places during working.
2. **Scope** : All offices & Sites
3. **Responsibility** : Contractors /PM/ Site In charge
4. **Key Words** : Lux: The Lux (symbol lx) is the SI unit of illuminance and luminous emittance, measuring luminous flux per unit area. It is equal to one lumen per square meter

5. Procedure :

S.No.	Activity	Responsibility
5.1	Provide adequate illumination at all work places and their approach passages/corridors. Refer recommended values of illumination for different locations.	Contractors /PM/ Site in-charge
5.2	Ensure that artificial lighting do not cause excessive glare or disturbing shadows.	Contractors /PM/ Site in-charge
5.3	Provide suitable guards for the lamps where necessary to prevent danger, if lamp breaks.	Contractors /PM/ Site in-charge
5.4	Use 24volt supply for hand-held lamps, especially in confined spaces. Lamp guards are necessary for hand-held lamps.	Contractors /PM/ Site in-charge
5.5	Provide emergency lighting to minimize danger in case of power failure.	Contractors /PM/ Site in-charge
5.6	The recommended values for Illumination level at areas are provided in the Annexure to this SOP.	Contractors /PM
5.7	The illumination shall be measured to ensure the required lighting is available.	Contractors /PM/ Site in-charge
5.8	Records: Illumination measurement reports	EPC/PM/ Site in-charge


6. Legal & Statutory requirements :

The Building and Other Construction Workers Act, 1996

 L&T IDPL	Standard Operating Procedure	Doc. No. 30
		Rev. No. 0
	ILLUMINATION	Date : 14/08/2015
		Page 2 of 2

Annexure to SOP- 31 -Illumination

Recommended values of illumination		
A. Construction Area.		
	Location	Illumination (Lux)
(i)	Outdoor areas like store yards, entrance and exit roads	20
(ii)	Platforms	50
(iii)	Entrances, corridors and stairs	100
(iv)	General illumination of work area	150
(v)	Rough work like fabrication, assembly of major items	150
(vi)	Medium work like assembly of small machined parts, rough measurements etc.	300
(vii)	Fine work like precision assembly, precision measurements etc.	700
(viii)	Sheet metal works	200
(ix)	Electrical and instrument labs	450
B. Office		
	Location	Illumination (Lux)
(i)	Outdoor area like entrance and exit roads	20
(ii)	Entrance halls	150
(iii)	Corridors and lift cars	70
(iv)	Lift landing	150
(v)	Stairs	100
(vi)	Office rooms, conference rooms, library reading tables	300
(vii)	Drawing table	450
(viii)	Manual telephone exchange	200

 L&T IDPL	Standard Operating Procedure	Doc. No. 31
		Rev. No. 0
	Signages	Date : 14/08//2015
		Page 1 of 1


1. **Purpose** : For placement of sign boards and its maintenance.
2. **Scope/Applicability** : All sites
3. **Responsibility** : Contractors /Site in-charge / PM
4. **Key Words** : Signage refers to the design or use of signs and symbols to communicate a message to a specific group. These signages provide information for precautions to be taken to avoid accidents/incidents.

5. **Procedure** :

S.No.	Activity	Responsibility
5.1	The signage's for display/placement should be identified. Each site should maintain drawings for provision of signage that may be required and ensure that adequate numbers are available for signage display during the work at site.	Contractors /Site in-charge / PM
5.2	The site Supervisors / Engineer to ensure installation of required signs at places of work. As and when the place of work shift, it should be ensured that the signages are also shifted and placed appropriately.	Site Supervisors / Site in-charge
5.3	The Site in-charge at the construction sites shall periodically verify the continued presence of the applicable signs in their locations. If any signage is found missing / damaged then the same should be replaced.	Contractors /PM
5.4	On completion of a road project, the "As built drawings" and inventory of road furniture is prepared and submitted to the authority for validation and the same to be maintained throughout the concession period as prescribed.	Contractors/PM /Site in-charge
5.5	The route patrols team are responsible for identifying missing / damaged signs / road furniture and reporting the same for corrective action in operation phase.	PM
5.6	Records : <ul style="list-style-type: none"> List of signages applicable for construction sites and drawing of layout for location of signages at each site. Report on missing / damaged road signs 	PM/ Maintenance In-charge


6. **Legal & Statutory requirements**

IRC 67 & IRC SP 55 (as applicable in CA)

 L&T IDPL	Standard Operating Procedure	Doc. No. 32
		Rev. No. 0
	ENERGY CONSERVATION	Date : 14/08/2015
		Page 1 of 2


1. **Purpose** : To ensure that all energy conservation points are identified and action taken for conserving energy.
2. **Scope/Applicability** : Applicable to all areas where energy is in use in any form
3. **Responsibility** : All Staff
4. **Key Words** : AC – Air conditioners
5. **Procedure** :

S.No.	Activity	Responsibility
	Illumination :	
5.1	<ul style="list-style-type: none"> Switch off tube lights, lamps, fans, ACs , etc. when not required. Prefer task lighting instead of uniform one all over. Follow recommended illumination levels for area. Use energy efficient lamps & luminaries. Keep all lighting equipment & reflectors clean. Optimize use of natural lighting. Prefer electronic ballast in place of conventional chokes. Prefer LED lighting /Compact Fluorescent Lamps. Use current / voltage reducer. 	All staff / Contractors /PM/ Site in-charge
5.2	Use electronic speed regulator for fans instead of electric regulator particularly if the fan is operated at low/medium speeds.	Contractors /PM/ Site in-charge
	At the work place	
5.3	<ul style="list-style-type: none"> Use high efficiency and optimum size equipment. Optimize use of plant utilities such as steam, cooling water, compressed air, etc. Monitor and control all plant parameters strictly. Install monitoring instruments like flow meters, pressure & temperature gauges, ammeter, etc. wherever necessary. Stop all leakages. Avoid unnecessary long distribution pipelines. Use thermostatic controller for cooling tower fans. Optimize need of refrigeration and also the refrigeration Temperature. Don't use weak or broken insulation. 	Contractors /PM/ Site in-charge
5.4	Check regularly all Monitoring & measuring devices (MMD) for their calibration	Site Supervisor
5.5	Use gravity wherever possible for liquid flow.	Site Supervisor
	Air conditioners	
5.6	<ul style="list-style-type: none"> Use ACs only when required. Maintain the temp at 24Deg C 	All staff / Contractors /PM/

 L&T IDPL	Standard Operating Procedure	Doc. No. 32
		Rev. No. 0
	ENERGY CONSERVATION	Date : 14/08/2015
		Page 2 of 2

	<ul style="list-style-type: none"> Switch off ACs half an hour before close of work. The number of AC's to be operated should depend on the staff strength present. Maintain and Service the ACs as per schedules. Keep all doors / windows closed when using the ACs. 	Site in-charge
5.7	Solar blinkers It should be ensured that the Solar blinker panels at median junctions are functional.	Contractors /PM/ Site in-charge
5.8	Records <ul style="list-style-type: none"> Preventive maintenance records for various equipment A/Cs records 	Contractors /PM/ Site in-charge

6. Legal & Statutory requirements : None


 L&T IDPL	Standard Operating Procedure	Doc. No. 33
		Rev. No. 0
	Safety in Computer Operation	Date : 14/08/2015
		Page 1 of 1

1. **Purpose** : To ensure safe working with computer operation
2. **Scope/Applicability** : All Offices and Sites
3. **Responsibility** : All staff
4. **Key Words** : ISD – Internal Systems Dept.
5. **Procedure** :

S.No.	Activity	Responsibility
	Some points for Safe computing are as follows:	
5.1	Body Posture :	
	<ul style="list-style-type: none"> • While working on computer sit properly, so that your back remains straight. • Place the monitor at the level of your eyes so that it is not strenuous for your neck. • Keep the mouse and keyboard in such a position so that while working your hands may rest against some support. 	All staff
5.2	Eyes :	
	<ul style="list-style-type: none"> • Place the monitor at the level of your eyes and adjust the brightness and contrast, so that it is comfortable for the eyes. • Take small breaks and close/blink your eyes while working continuously on a computer. 	All staff
5.3	Disposal of Waste:	
	<ul style="list-style-type: none"> • Unusable computer stationery should be disposed of in the bins kept in different places. • All non-biodegradable wastes like unusable/used cartridges, CDs and floppies are to be disposed of in the designated bin maintained for disposal 	All staff
5.4	Records : Records of discarded computer peripherals (e Waste)	All staff

6. Legal & Statutory requirements

None

 L&T IDPL	Standard Operating Procedure	Doc. No. 34
		Rev. No. 0
	Calibration	Date : 14/08/2015
		Page 1 of 1

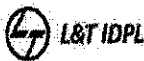
1. Purpose : For calibration of Instruments / measuring devices
2. Scope/Applicability : All sites
3. Responsibility : Contractors / PM/ Site in-charge
4. Key Words : Instrument calibration
Calibration is one of the primary processes used to maintain instrument accuracy. Calibration is the process of configuring an instrument to provide a result of measurement of any parameter within an acceptable range.

5. Procedure :

S.No.	Activity	Responsibility
5.1	<ul style="list-style-type: none"> Each site shall identify the list of instruments that needs to be calibrated and the frequency of calibration. This list shall also include weighing scales / weigh bridges and weights. Instruments which are primarily meant for indication purpose need not be calibrated but should periodically be checked for its functionality. 	Contractors / PM/ Site in-charge/ Maintenance in charge
5.2	<p>Whenever instruments are sent to external agency for calibration, it should be ensured that the same is done with the agency that has a valid NABL accreditation certificate.</p> <p>In case calibration is done in-house then traceability to NABL must be established for the master instrument used.</p>	Contractors / PM/ Site in-charge
5.3	If the calibration shows the error to be beyond the permissible range, then the instrument is to be replaced and existing one recalibrated before the same can be put to use again.	Contractors / PM/ Site in-charge
5.4	<p>Records to be maintained :</p> <ul style="list-style-type: none"> Calibration register Calibration reports 	Contractors / PM/ Site in-charge/ Maintenance in charge

6. Legal & Statutory requirements –


- The Legal Metrology Act, 2009

	Standard Operating Procedure	Doc. No. 35
		Rev. No. 0
	Community Grievance	Date : 14/08/2015
		Page 1 of 2

1. **Purpose** : For handling community grievance
2. **Scope/Applicability** : All sites
3. **Responsibility** : PM / Site in-charge/ PRO.
4. **Key Words** : PRO - Public Relations Officer
NHAI - National Highways Authority of India
CA – Concession Agreement

5.Procedure

S.No.	Activity	Responsibility
5.1	A PRO shall be designated for each toll plazas / sites and shall be available for access by public at all reasonable times, particularly during the office hours.	PM / Site in-charge
5.2	Contact Details Contact details of Important personnel at sites shall be displayed at prominent places to enable the community to be aware of the modes of communication for registering their complaints/grievances with the SPV / Contractor and for further escalation if necessary.	PM / PRO / Site in-charge
5.3	Registering of Complaints : <ul style="list-style-type: none"> At each location, a "Complaints Register" shall be maintained for recording of complaints by any person (the Complainant) at any time of the day; Each page of the register shall be duly numbered ; Each complaint recorded therein shall also be duly numbered ; and The complaints received through other modes of communication (over phone, E-mail or orally) shall also be recorded by the PRO in the register. Note : The complaints register stated above is maintained over and above the complaint register required under the CA.	PM / PRO / Site in-charge
5.4	The complainant shall be given an acknowledgment receipt stating the date and complaint number, which the Complainant may refer to in any subsequent correspondence or claim wherever possible.	PM / PRO / Site in-charge

 L&T IDPL	Standard Operating Procedure	Doc. No. 35
		Rev. No. 0
	Community Grievance	Date : 14/08/2015
		Page 2 of 2

5.5	Resolving complaints : Depending on the nature of the complaint, the PRO based on the guidance of the PM shall: <ul style="list-style-type: none"> Assure the complainant that the complaint will be attended to and appropriate action for resolving the complaint will be taken within a reasonable time frame ; The PRO should explain if the complaint is outside the scope of the mechanism and the alternative avenues available to the complainant for re-dressal of the same, and Inform NHAI of the complaint and action taken if warranted as per terms of the CA. 	PM / PRO / Site in-charge
5.6	Review of complaints : <ul style="list-style-type: none"> The PRO shall maintain a file with all the correspondence with respect to complaints, and The PRO shall review the Complaints Register every month and take prompt steps for re-dressal of the grievances stated in each complaint. 	PM / PRO / Site in-charge
5.8	Records to be maintained : <ul style="list-style-type: none"> Complaints Register File with the correspondence with respect to Complaints 	PM / PRO / Site in-charge

6. Legal & Statutory requirements

- Applicable CA (Agreement of the project with NHAI).