

## Message from the General Consultant

Welcome to the 17<sup>th</sup> Quarterly Safety and Health newsletter. I wish to thank the contributors of this newsletter for making it informative and interesting to read. The Chennai Metro Rail Project is actively committed to leading the development and attainment of world class safety standards. The overall performance in relation to target achievement and incident occurrences shows a step change toward this goal however, we recognize that the need for further improvement is necessary with emphasis on planned, risk managed operations without reliance on luck.

**Ron Mickell - Project Director**

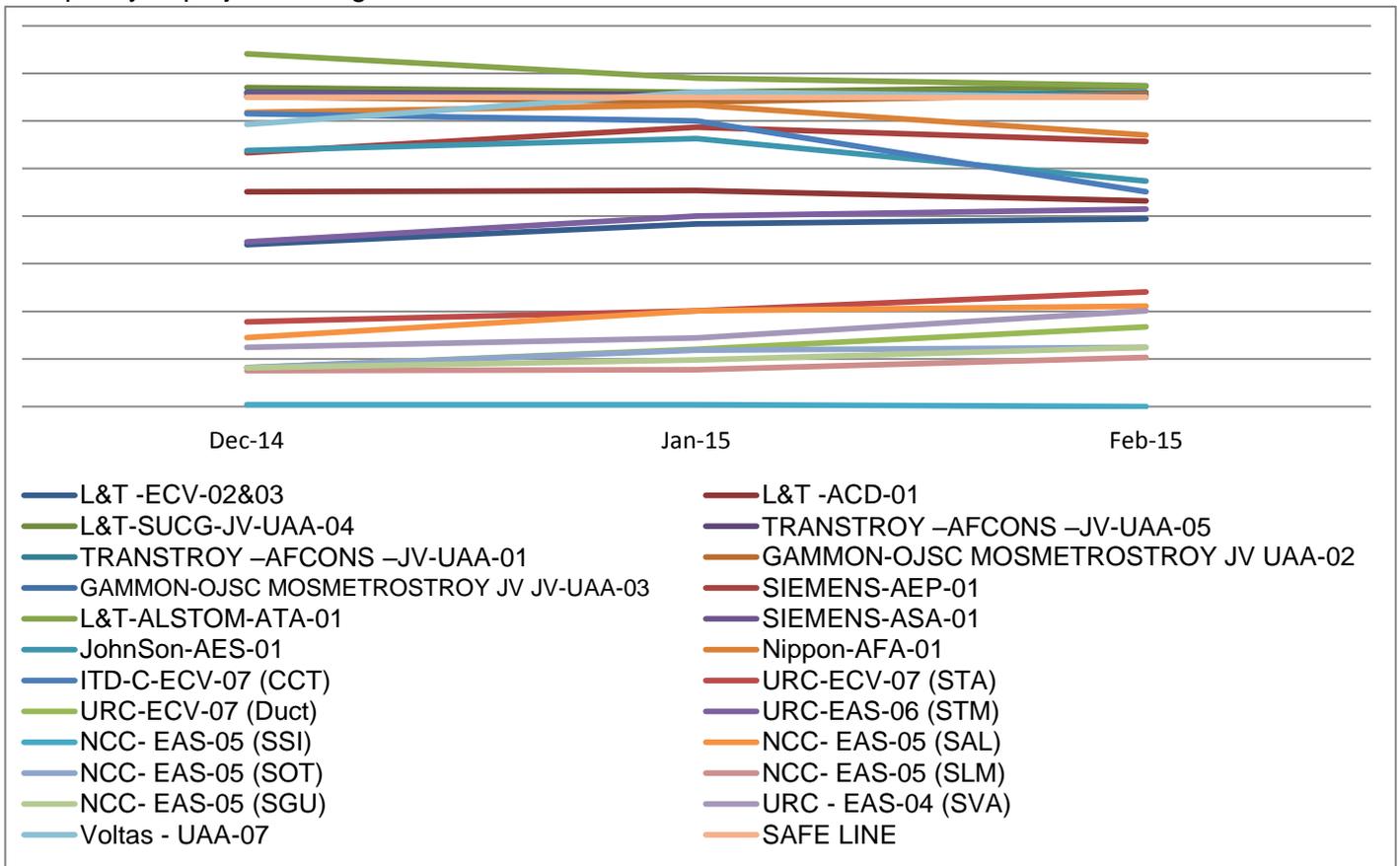
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## Quarterly OHS&E Performance

### CONGRATULATIONS – ATA-01-L&T-ALSTOM

Congratulations ATA-01-L&T-ALSTOM and UAA-04-L&T-SUCG JV are the contractors to achieve the High level CMRL performance target. This is an exemplary performance and one that should motivate and be emulated by all other Contractors on the project. The CMRL audit criteria has been both criticized and recognized as a tough target to meet however, the attainment by these ATA-01-L&T-ALSTOM and UAA-04-L&T-SUCG JV contractors shows that with good planning, coordination and competence and with plenty of project management determination this can be achieved.





**LARSEN AND TOUBRO LTD., INFRASTRUCTURE INDEPENDENT COMPANY**

**CMRL ELEVATED PACKAGE ECV-02 & ECV-03**



L&T Safety month celebrations 2015.



Third party Height Work training and emergency rescue demonstration conducted at Guindy.



Road Traffic week awareness along with pamphlets' was distributed to road users.



Weekly Meeting conducted by Mr.Gurusamy (Project Manager) with all the front line staff & supervisors.



Fire training given by site supervisor to all other workmen.



Dr.Rama Kumar giving awareness about Dengue fever to workmen.



Housekeeping programme conducted and price distribution given to workmen.



Monthly meeting conducted to all front line supervisors.



First Aid & CPR training given toll Workmen.



**CMRL ACD-01**

At ACD-01 CMRL Depot Project, during this quarter various promotional activities like safety month celebration 2015 for make safety a thing to remember from January to December, Eye check-up camp, blood donation camp, AIDS awareness program, Gas cutting safety training etc., were organised & conducted to create proactive EHS awareness and visibly demonstrate our commitment towards EHS among the workforce, staff and client.

**“LIVE INJURY FREE EACH DAY”**



Safety Month Celebration Inaugural Function - January 2015.



Safety Flag Hoisting by RE, ER.



Safety Month Celebration Valedictory function 2015.



Mass Eye checkup camp organized for drivers, operators by M/s Sankara Netralaya Eye Hospital.



Blood donation camp organized in association with Dr.MGR Medical University.



AIDS Awareness program conducted for workmen by M/s FPA India.



Online ATL (Any Time Learning) Safety course completion certificate & prize distribution to Site Engineer.



Safety Conscious Person Award - prize & certificate distribution by Chief Engineer (S&H) deputy, ER.



Flash back Arrestor safety demonstration Training for gas cutters by M/s Messer cutting.



# TRANSTONNELSTROY-AFCONS JV (TTA-JV)

## UAA - 01

We are proud to express our honour to achieve 28 million safe man hours upto this quarter.



Blood donation camp conducted in Sri Ramalu park.



Bone Densitometry Test conducted in TTA – UAA-01.



Distribution of Helmets on eve of Road safety week.



Malarial & Dengue medical camp conducted in labour camp and distributed anti malarial tablets to all workers.



Arrangement of Drinking water facility in the sites.



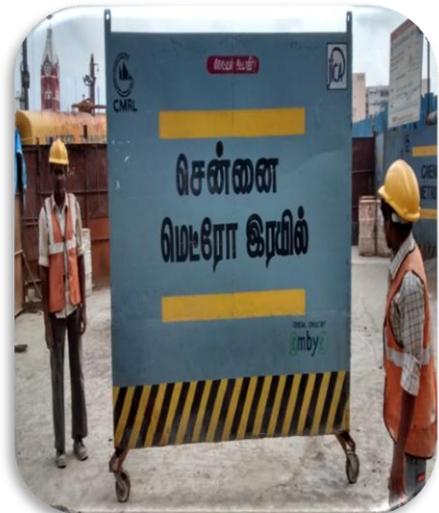
For clear visibility of Equipments in night times reflective tape was sticked



Nose mask with cartridge using for painting and spraying of paint for vehicles.



Sprinkling of water in and outside the site premises to control dust.



Moving wheels got attached for easy movement of hoarding boards.

**"SAFETY ISN'T JUST A SLOGAN, IT'S A WAY OF LIFE"**



## GAMMON – MOSMETROSTROY JV (UAA-02)

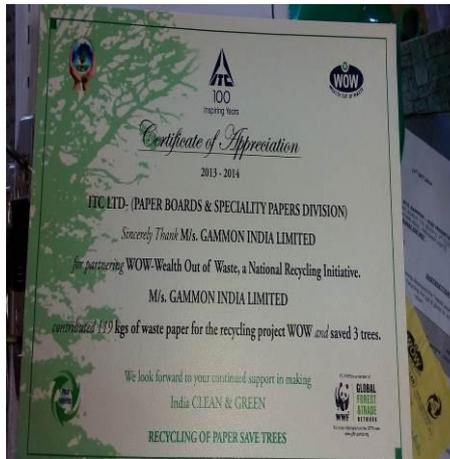
### OUR FEEL ABOUT SAFETY, OCCUPATIONAL HEALTH AND ENVIRONMENT.

1. Safety Motivation Program is conducted in the sites on monthly basis to boost up the morals of the working crafts. Rewards and certificates are apparently given to those complying Safety Plan & CEMP that including Sub-Contractors. And also on every Saturday Snacks/Fruits are distributed to crafts after finishing TBT.
2. ITC LTD Paper Board division had given an appreciation certificate for “Wealth Out Of Waste” a National recycling initiative @ 119 Kgs of used papers was given for recycling and apparently 3 Trees got saved.
3. Water sprinkling is done twice at all of Site areas, Batching Plant and Labor living areas to suppress the dust, loose cement, which may suffocate Working Crafts, Stake Holders, Poor Visibility & Occupational Problems.
4. Food Waste is collected in Bins at a designated place and the Food Waste is disposed from our Sites, Batching Plant & Labor Camps on daily basis to eliminate Stinking and Vermin etc.
5. Environmental Statistic flex maintained at our Sites & Batching Plant. Required details are manually maintained updated by our Environmental Department.
6. IGBC Green MRTS Work Shop was organized at our Thousand Lights Office. And the company is going ahead for IGBC Green MRTS certification. Attendees were from Gammon and officials from GC & CMRL.

Safety Motivation @ STL



ITC Appreciation Certificate



Dust suppression @ Sites



Disposing Food Waste



Environmental Notice Board

ENVIRONMENTAL MANAGEMENT NOTICE BOARD				SITE: <i>Good Earth</i>	
				MONTH: <i>Jan 2015</i>	
<b>A. AMBIENT AIR QUALITY (AAQ)</b>					
No.	POLLUTANT	UNIT	LIMIT	REPLY	
1	Particulate Matter 10 (PM <sub>10</sub> )	µg/m <sup>3</sup>	100	66.1	
2	Particulate Matter 2.5 (PM <sub>2.5</sub> )	µg/m <sup>3</sup>	80	20.4	
3	sulphur Dioxide (SO <sub>2</sub> )	µg/m <sup>3</sup>	80	8.4	
4	Nitrogen Dioxide (NO <sub>2</sub> )	µg/m <sup>3</sup>	80	31	
5	Carbon Monoxide (CO)	µg/m <sup>3</sup>	6	30L	
<b>B. NOISE LEVEL</b>					
No.	POLLUTANT	UNIT	LIMIT	REPLY	
1	Day Time	dBA	85	62.0	
2	Night Time	dBA	55	48.0	
<b>C. SOIL QUALITY - POLICY</b>					
No.	PARAMETER	UNIT	GENERAL PRACTICE		
1	Contaminated	None	None		
2	Water Management	None	None		
3	Prevention on Waste Disposal	None	None		
<b>D. DUST BIN / SHOP MANAGEMENT</b>					
No.	NAME OF THE DUST BIN	COLOR	NO. OF SHOP	NO. OF SHOP	
1	Landfill	Red	8	8	
2	Biodegradable	Green	2	2	
3	Recyclable Waste	Blue	2	2	
4	Hazardous Waste	Red	2	2	
5	Waste	Black	2	2	
<b>E. VEGETATION MANAGEMENT</b>					
No.	TREES	UNIT	STATUS		
1	Tree Cut	None	None		
2	Tree Replanted	None	None		
3	Tree Pruned or Cut	None	None		
<b>F. LIST OF AUTHORIZED RECYCLER</b>					
No.	TYPE OF WASTE	RECYCLER/AGENCY			
1	Steel Scrap/Scraping Oil	M/s. Sri Rajaji Industries			
2	Steel Scrap/Scraping	M/s. SPTI Ltd			
3	Chemical Management	Amulshree Health Services			
4	Cement & GCL Filling	M/s. GPTI Ltd			
5	Waste	M/s. Shree Industries			
6	Plastic & Cardboard	M/s. SPTI			
7	Steel Scrap	M/s. Shree Industries			
8	Steel Scrap	M/s. Shree Industries			

IGBC Green MRTS Work Shop





## GAMMON – MOSMETROSTROY JV (UAA-03)

We, Gammon-Mosmetrostroy JV, UAA-03 always endeavor to achieve higher standard through continuous innovations, initiatives apart from the routine requirements.

 <p>04.03.2015 09:1</p>		
<p>National Safety Day celebrations at Nandanam Station. Our GM projects raised the safety flag.</p>	<p>Good housekeeping and emergency lighting ensured in tunnels.</p>	<p>Tree saplings were given to AGDMS office by Gammon India Limited.</p>
 <p>24.02.2015 18:56</p>	 <p>25.01.2015 13:44</p>	
<p>Swine flu awareness and precautions was communicated to all workers by Dr. Manivannan.</p>	<p>Oral cancer program, organized by CMRL was done at our Nanthanpakkam Labour camp.</p>	<p>A view of good housekeeping in MMS Tunnel section.</p>
 <p>14/02/2016 16:43</p>		 <p>14/02/2016 11:52</p>
<p>Green nets were provided to prevent dust pollution in batching plant.</p>	<p>Regular cleaning of sign boards are carried out by Gammon-MMS JV.</p>	<p>A view of good housekeeping in Saidapet Station concourse slab.</p>
 <p>26.01.2015 18:21</p>	 <p>06.02.2015 20:27</p>	 <p>10.02.2015</p>
<p>Waste segregation at Station area.</p>	<p>Waste disposal training to workers.</p>	<p>Provision of cage for waste bins.</p>



# METRO TUNNELLING CHENNAI L&T SUCG JV, CMRL UAA-04 PACKAGE



We at L&T SUCG JV are happy and proud to inform that we have bagged two safety awards back to back one is from NATIONAL SAFETY COUNCIL OF INDIA, MUMBAI and one more from CII (Confederation of Indian Industry – Southern Region) for EHS EXCELLENCE AWARD for adopting bench marking safety practices in Construction Industry. This was made possible only with the support, assistance and guidance of ER / CMRL team members. Our JV partner SUCG has almost completed the tunnelling work successfully and we are working on final tunnel break through at Nehru Park from KMC. Now our entire focus is on E&M, Architectural works and construction of Cross Passages and erection of OTE Ducts at all stations. More impetus is being paid on outbreak of Epidemic issues like SWINE FLU, MALARIA and DENGUE Fever etc., by conducting more health camps and awareness program "CHALLENGE MYTHS, CHANGE BEHAVIOURS AND MONITOR CONTINUOUSLY"



Safety Month - (January 2015) Celebrated at L&T SUCG JV UAA-04 Package with the presence of CMRL and ER Representatives.



Road safety awareness week observed at all station sites with the help of traffic police.



Behaviour Based Safety Training for Managers and Engineers



Safety In Oxy-Fuel Operation By Messer (On Site Practical Demo)



Permit To Work Training For All Engineers and Supervisors



SOP (Standard Operating Procedure) display for current activity at site entrance.



'Rally The Rule' propagation of Golden Safety Rules Amongst Workmen "Monthly Safety Rule Tag"



Appreciation Certificate Received from KMC hospital for our CSR Activities & Initiatives



Blood Donation Camp Conducted with the help of KMC Blood Bank (116 Units Collected)



Mock Drill Conducted On Road Accident at Pachaiyappas College Station





# TRANSTONNELSTROY-AFCONS JV (TTA-JV)

## UAA – 05

At CMRL-UAA 05 Project, during this quarter various promotional activities were conducted to create awareness among the workers and staff. Also with constant effort through Team work, we have achieved 65+% in GC MARS AUDIT for the past 3 quarters. Safety, Health and Environmental aspects are implemented as per CMRL/GC requirements and various internal and external trainings were given to workers and staff from approved agencies.



Road Safety Week celebrated by TTA-JV in coordination with CTP.



Safety Flag hoisted by Mr. Udaya Kumar (RE – GC) on National Safety Day



Speech by Mr. H. Jayaram (PM – UAA 05) on National Safety Day



Oral Cancer Awareness Camp conducted in Labour Colony for all workers to bring awareness about oral hygiene.



Permit to Work System Training to all management staff by EHS Solutions



LOTO training to workers by EHS Solutions.



Medical Emergencies and Response training by Dr. Thorat [Corporate Physician]



Mock Drill conducted at Labour Colony



Defensive driving training conducted by IRT to all operators



Hand Tool Power Tool – Hazards and Control training to workers by Safety Catch



Behaviour Based Safety Management training conducted by Safety Catch



MS/RA briefing to staff/workers before commencement of work.

**CHENNAI METRO RAIL PROJECT – CONTRACT ATA-01**  
**A TRACK WORK CONSORTIUM**

At ATA-01 CMRL Track Work Project, during this quarter various promotional activities were conducted to create EHS awareness among the workforce and staff at site. We strive to achieve excellence in OHSE thro' continual improvement, by Innovation, Motivation & Team work. With constant Technical support from ER / CMRL, we will try to set Benchmark Standards in Safety. As part of **L&T's Safety Month Celebrations 2015**, various special activities like Medical camp with Audiometry examination, AIDS Awareness camp, Training to school children & Teachers are carried out. To motivate all workmen, Engineers / Supervisors, various Safety competitions were held & around 125 prizes were distributed. **An Innovative Safety Skit (Drama)** by School children was conducted, which was well received by all workmen.

			
Training on 'SHE EMERGENCY RESPONSE' Conducted for Staff Thro' M/s Safety Catch-10.12.2014	Training on Need for Safety Conducted for School Teachers by R.Mohan, COHS&E Manager	MS/RA on Lifting Of Machineries briefed and Pooja done before lowering of Flash Butt Welding Machine at Egmore tunnel & M/C was safely lowered on 09.01.2015	
			
Road Safety Awareness conducted at Koyambedu signal along with Traffic Police on 14.01.2015	Safety Month Celebration' 2015 Flag Hoisting by Sri.Archunan - CGM(EC)/CMRL and Prize Distributed to staff and workmen for various competitions by Sri. Ron Mickell-Project Director/ER.		Training on 'SAFETY IN POWER TOOLS' conducted for workmen thro' 'M/s BOSCH on 13.01.2015
			
HIV/AIDS Awareness conducted to All Staff and Workmen by TN/ NGO on 19.01.2015	As part of CSR Activity, a Training on Home, School and Road Safety to LBEAAR School Children by EHS Team	Health Camp(EYE test, Sugar test and Audiometry test) conducted to All Workmen, Staff, and Client officials on 22.01.2015 Thro' M/s.Medicorp Services	
			
As part of CSR Activity ' BLOOD DONATION' Camp conducted on 23.01.2015 at Site office Thro' M/s Lions Blood Bank.	SPOT the Hazard Quiz Competition for workmen conducted on 24.01.2015 by EHS Team	Training on 'EHS BEST PRACTICES IN METROS' conducted to Staff by Sri.Kannan-Chief Safety Expert/ER	SAFETY SKIT by LBEAAR School Children during Safety Month Valedictory Function



To achieve a Culture of “Zero Harm” Siemens BU Head & corporate EHS Personnel conducted EHS Audit in our project.



Road safety week celebrated at our site office and project site locations.



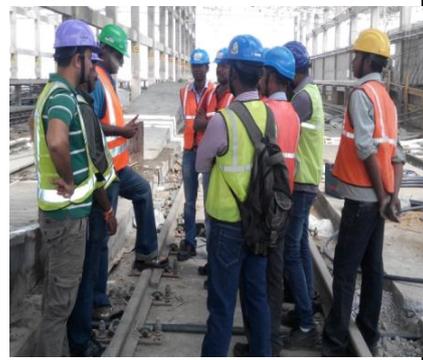
Monthly EHS meeting are conducted and EHS issues are discussed & closed out for safe working environment.



Fire Extinguisher operation Training are conducted on monthly basis to handle fire emergency situation.



Ladder Safety trainings are conducted to workers on regular basis.



COSHH/MSDS briefings are conducted to all workers and staff



Height work video trainings are conducted to workers and staff to educate the hazards and control measures for safe working.



Manuel Handling Trainings are conducted to workers on regular basis to mitigate the back injuries.



Weekly Health Briefing being conducted to workers about the hazards associated with their nature of work to minimize health risks.



Job specific (Stud welding) Trainings are conducted to all workers and Technicians on regular basis.



Portable power tools safety trainings are conducted to operators/ workers on regular intervals.



To motivate Workers “safe man of month” award system were implemented at our project.



SHE Committee meeting



Tool box talk –OHE cantilever erection



National Safety day Celebration at Site



Noise Monitoring at Koyambedu Depot



Anti-bird nest erection



Two track cantilever erection using Unimog and trolley



Medical camp at Koyambedu Site



Safety Training to OHE Team – Job/Task Safety Analysis by CSM

**CHENNAI METRO RAIL PROJECT AES-01**

	<p>External Management Training “<b>Communication &amp; Customer Relationship skill</b>” conducted on 23<sup>rd</sup> Jan for JLPL Project Team.</p> <p>External Management Training “<b>Human values</b>”, conducted on 21<sup>st</sup> Feb for JLPL Project Team.</p>	
<p>External Training On Communication &amp; Customer Relationship Skill</p>	<p style="text-align: center;">EXTERNAL TRAINING</p>	<p>External Training On Human Values</p>
	<p>To meet real Emergency situations, Mock Drill exercises have been conducted on Scenario namely “<b>FIRE FIGHTING</b>” in Ekkatuthangal Station on 13.01.2015.</p> <p>Prior to start of daily work, Safety Pledge is being read out at all sites to inculcate sense of duty.</p>	
<p style="text-align: center;">Fire Mock Drill</p>	<p style="text-align: center;">DRILL &amp; PLEDGE</p>	<p>Good Safety Practice – Reading of Safety Pledge daily</p>
	<p>Project Head presided over the Safety Committee Meeting on Jan 29<sup>th</sup> and CSM delivered Monthly Safety Performance.</p> <p>Project Head presented the Best Safety performer award to Lift &amp; Escalator Team members.</p>	
<p>Monthly Safety Performance Presentation - SHE Committee Meeting</p>	<p style="text-align: center;">SHE COMMITTEE MEETING</p>	<p>Best Safety Performance Award</p>
	<p>As a Health Promotional measure General Health Check – up, Dental Check – up and Eye test conducted for JLPL – CMRL Project Staff on 21.01.2015.</p>	
<p>General Health &amp; Dental Check up</p>	<p style="text-align: center;">HEALTH PROMOTIONAL ACTIVITIES</p>	<p>Vision Check - up</p>



## ITD CEMENTATION INDIA LTD ECV-07(CCT) PROJECT

ITD Cimentation India Limited (ITD Cem) has contributed significantly in the growth of Infrastructure in the country over the last eight decades. The management of the company is dedicated to maintain the international standards of Health Safety and Environment in the industry. To maintain the best safety practices in ECV-07(CCT), CMRL Project, company is organizing lot of Training and promotional activities.



National Safety Day-2015 Celebration



OHS&E Quiz Competition



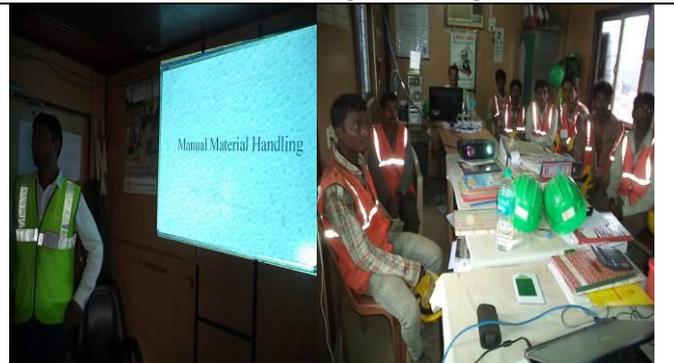
Fire Training To Workmen



Work at Height Training



Fire Training to Staff Members



Manual Material Handling Training



Work Place Hazards Briefing by Management Staff



Motivational Gift to Workmen



# VOLTAS LIMITED

## Chennai Metro Rail Project - UAA-07-01

Voltas - VAC, UAA 07 achieved 66.1% score in MARS in second audit. While acknowledging the challenges related to SHE management in dealing with unskilled work force which is transient in nature and underground stations in various locations, Voltas believes that with focused efforts and support from the leadership team this can definitely be achieved. As SHE Promotional activity a health awareness program on "Swine Flu" is conducted for our staff by Dr. D Suresh Kumar, MD, Specialist in Infectious diseases, Apollo Hospital.



Safety Pledge on the eve of "Safety week Celebrations"



Participants of Safety Quiz competitions



Health awareness on "Swine Flu" by Dr.D.Suresh Kumar, MD (Apollo Hospital)



Confined space Training for staff conducted by Chief OHS&E Manager



Safe lifting operation training conducted by M/s EHS Solutions



Legal requirements training conducted by Mr.VGS Pillai



Health Awareness on " skin cancer & silicosis" conducted at Nehru park station by Occupational Health Officer



Blood Donation camp Organised at Voltas office as part of our CSR Activity



Uses of Life lines and mobile grab fall arrester for roof sheeting work.



# NCC LIMITED Chennai Metro Rail Project – EAS 05(RW)

NCC Limited celebrated 44<sup>th</sup> National Safety Week 2015



Mr. Ramesh Dy.G.M (Tech) NCCL hoisted National Safety Council Flag



Mr. Kuldeep Mishra P.M (ER) is delivering his speech to Workers and Staffs on the eve of Celebration



Mr. C Kannan C.S.E (ER) is delivering his speech to Workers and Staffs on the eve of Celebration



The Winners are awarded Safety Prizes and Certificate by Mr. C Kannan C.S.E (ER)



Internal Training on Work at Height given to Workers



Fire Mock Drill and Fire Fighting Training Given to Workers



## URC Construction (P) Ltd Chennai Metro Rail Project – EAS-06 (RW)

We at URC CONSTRUCTION (P) LTD., in an effort to take our Safety to next level. The Management of the Company is dedicated to maintain the International Standard of Health, Safety & Environment in the industry to maintain the best Safety Practices in EAS–06. We are proud to express our Honour to achieve 8,10,000 safe man hours upto this quarter. During this quarter various training were conducted to create awareness among the workers and staff.



HIV Awareness, Eye and Blood test Medical Camp on 6<sup>th</sup> Jan 15.



Fire fighting training for Staff and Workers was conducted on 15<sup>th</sup> Jan 15.



Free Medical facility provided to all Employees on bimonthly basis.



Safety Day celebrated and Safety flag hoisted by ER Safety Engineer Mr. Karimullah.



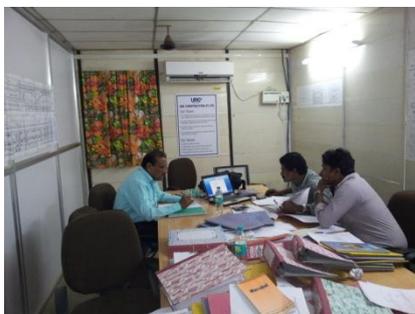
Safety Pledge by Safety Head Mr. Riyaz Khan, all Staff Members and Workers on 4<sup>th</sup> Mar 15.



Audit team Mr.Riyaz Khan, Mr.Shankar & Mr. Karimullah during Site Audit in St. Thomas Mount.



V.P. Brigadier Mushtaq briefing the importance of Health, Safety, Security and Environment.



Documents verification by Mr.Shankar during Mars Audit.



Mock Drill conducted by Safety Department in St. Thomas Mount Station



# URC Construction (P) Ltd Chennai Metro Rail Project – ECV-07 (VIA-R)



44<sup>th</sup> National Safety day Flag Hoisting by V.P. Mr. Kasi Arumugam (CMRL Projects) on 4th March 2015.



Safety Pledge by Sr.HSC Manager. S.Govindharaj, all Staffs and Labours on National Safety Day.



Dental Camp conducted for all staffs and labours on January 2015.



SHE Committee Meeting by V.P. Brigadier Mushtaq.



Medical Checkup for all staffs and Labours.



Safety Briefing given for Staffs and Labours.



Fire Extinguisher operation training program conducted for Staffs and Labours on Jan 2015



Monthly checkup conducted by First Aider to Labours



## Lift Plan Guidance

When attempting any lift, regardless of how small or seemingly insignificant, there is some basic information that must be known and confirmed before you begin. These major lifts are executed with precision and are successful if the plan is carefully followed. Sufficient planning and supervision are necessary in preventing crane accidents. If something goes wrong, the result is likely to be disastrous – severe damage to property with risk of injury or loss of life is a real possibility. Good planning protects cranes and the people working around them. Cranes are one of the most versatile pieces of equipment working on many heavy and highway construction sites. When used correctly with a trained and competent crew, cranes are one of the safest pieces of equipment.

### What is a Lift Plan?

Having identified a requirement for a lifting operation involving the use of a crane it should be established if the particular operation has been carried out before on that site, as a Risk Assessment and Lift Plan may already exist.

If a particular Risk Assessment and Lift Plan do exist then they should be assessed to confirm that they are still applicable; changes to personnel, site layout or work environment could all result in the need for a reassessment of hazards. Assuming that significant changes have not taken place, lifting operations may proceed under the requirements of the Lift Plan, subject to the normal approvals.

If the lifting operations have not been carried out before then a risk assessment should be carried out and a lift plan prepared.

### Know your limitations

Once you've decided on the need for a crane, you must decide whether to use company-owned equipment or rent a crane. Competent person should be assigned to take full control and total responsibility for the planned lift. A — competent person is a person with sufficient training, technical knowledge and experience to develop a safe plan of work for lifting operations, in order to satisfy the needs of the contractor

### Site visit

In my opinion, there is enough time not given to the site visit. In many instances, assumptions are made in the estimating process about site conditions. The person assigned to create the lifting plan should make arrangements to visit the site to gain all the information needed to ensure the lift can be made from a specific location and that ground conditions are suitable for supporting the weight of a crane and the materials to be lifted. The competent person should also plan for the best possible access and egress for the assembly and disassembly of the crane and the materials to be lifted. Existing proximity to hazards and any on-going construction work which may develop during the planning phase should be of particular interest when developing the lift plan. Once a rough sketch of the area has been made and some detailed notes taken, the competent person can start considering the other aspects of the lifting process. Detailed written information regarding the load or loads must be obtained. This information should include such items as:

### Description

What type of load will you be lifting – forms, I Girder, LG boxes, Rebar Cage Panel, Plunge Column, TBM Parts, rail, fabricated bridge, precast deck panels, or bridge deck girders?

### Weight

Are the net and gross load weights known? Did you remember to factor in the weight of a crane load block; jib; rigging; hook, ball, and swivel; all cable below boom point; and other accessories?

## **Contents**

Are there any hidden contents that could affect load weight and stability, or that could be hazardous if spilled? Is the center of gravity marked on the load?

### **Nearby collision hazards**

Is the crane site suitable? Is the crane next to a haul road? Can the crane's superstructure rotate 360° without coming into contact with any object creating a trapping point between the counterweight and the fixed object? Can the crane be assembled and disassembled with outriggers or crawlers fully extended in accordance with manufacturer's specifications.

### **Ground conditions**

Is the ground on which the crane is to sit firm and level? Is it capable of withstanding the ground-bearing pressure of an outrigger jack or a crawler crane track with the load suspended over the corner of the track or outrigger? Are there any hollow structures under the crane pad? Are crane mats needed to stabilize any soft ground conditions? Information on ground-bearing pressures can be obtained from the crane supplier and manufacturer.

### **The crane**

After considering the loads and the location of the crane, the competent person should choose a crane. For example, if the crane is needed for an extended period and the ground conditions are too soft for a mobile truck crane, the competent person may opt for a crawler crane. The competent person needs to know cranes well. In particular:

- The capacity and limitations of each crane type
- The methods of work the crane can perform
- The crane's safe working loads from the load chart
- The dimensions and weight of the crane, both in transit and after being fully set up
- If necessary, the outrigger or crawler crane track ground-bearing pressures (available from the supplier or manufacturer).
- The competent person should also check with local agencies for any restrictions or limitations on crane operations in the area.
- If renting a crane for the lift, request crane annual inspection certificate and maintenance records.

### **Accessories**

Choosing the right accessory is just as important as the site visit, load calculations and crane choice.

Commonly-used accessories include wire rope slings, round endless slings, eyebolts and multiple leg slings, just to name a few. Accessories must be in good order and free of common, easily-identifiable faults and defects.

The competent person is responsible for the choice of lifting accessories most suitable for the lifting operation. This decision may depend on including and consulting with others and relying on the manufacturer's instructions and guidance. When choosing lifting accessories, the competent person must pay particular attention to:

- The safe working loads or working load limits of the accessories
- The number and type needed
- The number of legs required
- The suitability to and compatibility of accessories with each other and lifting points
- Most importantly, the calculation of angles between slings and accessory legs

Lifting accessory manufacturers provide the user with a large amount of technical information on their

proper use. Much of this is designed with the user in mind and is simplified to ensure that the user has a full understanding of their safe and efficient use.

The competent person also needs to visually inspect all accessories prior to use. This inspection will identify the most common faults that may occur during use. These include:

- Cuts and tears
- Deformity
- Discoloration
- Stretching, distortion and elongation of links and components
- Rust and corrosion
- Missing items such as safety catches and pins
- Missing markings such as identity numbers and working load limit markings

### **Personnel**

The Competent Person (CP) is someone who has the required level of competence, through practical skills and theoretical knowledge, to plan and supervise lifting operations. The CP must be able to:

- Carry out Risk Assessments;
- Prepare and assess Lift Plans;
- Conduct Toolbox Talks.

The CP is the focal point for technical aspects of the lifting operation, although they may not be directly involved in supervision of the operation.

The Certified lifting supervisor, certified signal person and the operator's most important role is to stop the lift if:

- He does not understand what is required
- Unplanned changes to the lifting operation have occurred
- There are doubts about the continued safety of the lift or crew involved

The competent person will direct the lift with the assistance of the crane operator, certified signal person, or qualified rigger, and the operator, signal person, or rigger shall be responsible for the attachment and removal of lifting accessories. The basic criteria to remember is that all people involved must be competent. All personnel involved with the lifting operation must be able to work together as a team. Each is equally responsible for the safety and well-being of the others.

The key to this team involvement is that the competent person must bring together information and people from several areas to ensure that the lift is planned properly, supervised appropriately, and carried out safely.

This information is only a guideline to a successful lift. All lifts are different and require attention to detail by all contractors involved in the art of cranes and lifting.

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