

Plant Safety Leaders: A Concept for Sustainable Safety Management at GWEL

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Abstract: Being driven by GMR Group core values & belief, we at GWEL navigated a remarkable journey at astonishing swiftness towards “Excellence” imbining Health & Safety as a culture. Sustaining this **Safety first** culture in thermal power station environment is a hard task due to various challenges like huge size of the plant, Engagement of contractor’s manpower. The Concept of Plant Safety Leaders is implemented at GWEL to strengthen the safety management system. One employee from each department is identified as plant Safety leader. Training programs are conducted for these safety leaders through safety institutes for their capability building. The responsibility of these leaders will be to carry out Inspection of their respective Work area at defined frequency with the help of safety inspection checklist. These inspection checklists cover the monitoring of possible safety hazards like Ladders, tools and tackles, electrical hazards, identification tags, health hazards etc. Deviations noticed during inspections will be recorded as Safety notifications which will be reviewed for its compliance in Operation & Maintenance review Meeting. Plant safety leaders also convene their departmental safety committee meetings. These Health and Safety activities are carried out by plant safety leaders along with their departmental responsibility. The concept has brought in synergy across all the processes of Thermal power operations. Identification and addressing of potential hazards (personal injury, property damage, fire, and pollution) had helped in maintaining safe working environment during operations and maintenance of our plant.

Key Words: Safety, Lost time Injury, Safety Leaders, Potential hazard.

Plant Safety Leaders deployment process:

Eligibility	Selection criteria	Responsibility	Involvement	Capability building	Rewards and recognition
Employees on role with Minimum 4 year experience in their respective field.	Shortlisting of interested candidates from each departments. Selection based on Safety rating obtained in previous year PMS and personal interview	Issue of Terms of reference through office order/circular Work as safety lead of respective department	OH&S Inspection OH&S internal audits Safety campaigns like National Safety week, Fire week, world environment day etc.	Health, Environment and safety trainings through Safety Institutes	10% weightage in annual performance Special recognition in Town Hall Meeting by Chief Executive Officer

Responsibility of Plant Safety leaders:

- Carry out inspection of their respective work area as per 31 Safety inspection checklist maintained.
- Convening departmental Safety review meetings with HODs, EHS dept. on monthly basis
- Inspection of Contractors Tools and tackles
- Making Behavioral Safety observations
- Participate in review meeting with Head O&M which is conducted on monthly basis

EHS Trainings Conducted for Plant Safety Leaders:

Sl. No.	Name of Training	Training Man days	Trained by
1	Statutory requirements pertaining to Health & Safety	2	National Safety Council, India
2	KYT-Hazard Prediction Activity	2	National Safety Council, India
3	First Aid Training	2	St. John Ambulance
4	Behaviour Based Safety (BBS)	3	NIST, Chennai
5	BBS - Train The Trainer	5	NIST, Chennai
6	ISO 9001, ISO 14001, OHSAS 18001 Internal Auditor	5	Bureau Veritas Certification
7	Firefighting and Emergency Response	2	In house
8	Sustainability Reporting as per GRI-G4	2	KPMG

Training Photographs:



Safety Inspection Checklists maintained by Plant safety Leaders:

- Safety leaders carry out inspection of their respective work area as per 31 Safety inspection checklist maintained.
- Deviation noticed is raised as safety notification in Z9 category of SAP.
- These notifications are discussed in daily Operation & Maintenance review meeting and corrective actions with responsibility are fixed.
- Corrective actions are compiled by concerned responsible department
- Safety notifications in Z9 category can be closed only after confirmation from safety department. Otherwise these notifications exist in the SAP system as a pending task against concerned person/ dept.
- Safety Inspection Checklists maintained by Plant safety Leaders

Safety Inspection Checklist:

1	Checklist and inspection of mobile cranes
2	Checklist for contractor Safety audit
3	Checklist for hydraulic and manual platform
4	Checklist for measurement of light intensity
5	Checklist for portable electrical equipment
6	Checklist for sky climber
7	checklist for tools
8	Checklist for chemical tanker inspection
9	Checklist for ELCB testing
10	Checklist for Electrical switchgear room Safety
11	Checklist for Emergency Shower inspection
12	Checklist for FO Tanker inspection
13	Checklist for FOPH Safety
14	Checklist for Fork lift
15	Checklist for Fuel oil pump house
16	Checklist for gas cutting set

17	Checklist for grinding machine
18	Checklist for Inspection of stairs and fixed and portable ladders
19	Checklist for Main warehouse and general stores
20	Checklist for MCC safety
21	Checklist for Noise measurement
22	Operators checklist- TG
23	Operators checklist-Boiler
24	Operator's checklist-BOP (operation dept.)
25	Checklist for PPE compliance
26	Checklist for Safety attitude
27	Checklist for Scaffolding
28	Checklist for Substation MCC and PMCC room and Workshop(elect) inspection
29	Checklist for Technician's plant workshop and maintenance shop
30	Checklist for vehicle inspection
31	Checklist for welding machine inspection

Staircase and Ladders Inspection by Plant Safety Leaders:



Contractors Tools Inspection by Plant Safety Leaders:



Departmental Safety Review Meetings by Plant safety Leaders:

Further Safety leaders are convening departmental Safety review meetings with HODs, EHS dept. on monthly basis. Contractor's workers representatives of respective department are also part of this safety meeting.

Safety review meeting Schedule:

Safety Review Meeting Schedule					
Month:	August-16				
A	Departmental Safety Meeting				
SI No	Department	Name of Plant Safety Leader	Meeting Date	Meeting Time	
1	AHP	Vishal Pahune	03.08.2016	14:30-15:30	
2	CHP	Pamesh Agarwal, Deepak Singh	03.08.2016	15:30-16:30	
3	Operations	Arvind Kumar, Aabhas Chanekar, Mrinal Sharma	04.08.2016	14:30-15:30	
4	BOP- Mech	Mahadev Dole	04.08.2016	15:30-16:30	
5	Boiler- Mech	Abhishek Tiwari	05.08.2016	14:30-15:30	
6	TG- Mech	Pritam Deshmukh	05.08.2016	15:30-16:30	
7	Electricals	Abhay Sohale, Santhosh Verma	06.08.2016	14:30-15:30	
8	Chemistry	Angeshwar Dewangan	06.08.2016	15:30-16:30	
9	C&I	Rahul Das	12.08.2016	14:30-15:30	
10	OS	Nilesh Awari	12.08.2016	15:30-16:30	
11	Civil	Kishore Karemore	13.08.2016	14:30-15:30	
12	Stores/C&C	Jitendra Tiwari	13.08.2016	15:30-16:30	
13	HR/FMS	Abhishek Patil	15.08.2016	14:30-15:30	
B	Plant Safety leaders Meeting			17.07.2016	14:30-15:30
C	Safety Committee Meeting			22.08.2016	16:00-17:30

Significant risks identified by Plant Safety Leaders and Control measures implemented:

Below are a few of the significant risks identified by Plant Safety Leaders and Control measures implemented as below:

1. Coal Breaker cum boulder remover installation for wagon tippler hopper chocking clearing work while coal rake unloading:

We receive coal from government controlled coal companies. Sometimes this coal contains lot of big size lumps boulders, which results in frequent choking of our wagon tippler hoppers. Normalising the operation by clearing the choke involves manual work for at least 8 persons per shift. Health & Safety Risk involved was exposure to coal dust, Manual material handling and injury due to hurry. Delay in unloading activity attracts demurrage charges also. We had little control over the activity as it involved government agencies.

To overcome this risk we have installed a coal breaker cum boulder remover for Wagon tippler hopper chock clearing. By using this equipment it became very easy to remove big size stones and pocking of hopper screens is become effortless. Overall this resulted in reduced manual material handling at least by 8 workers and ensured Safety in operation

2. Sodium Hypochlorite dosing at aerator tank:

Activity of shifting filled Sodium hypochlorite carboys up to top of the aerator tank outlet channel was done manually by workers. Rupture of carboys while shifting on staircases may result in spillage and worker may get exposed to chemical.

To eliminate risk posed during Sodium Hypochlorite dosing at aerator tank, A dosing pump with all piping has been installed at ground floor of the aerator to eliminate Manual handling of sodium Hypochlorite carboys on staircase. By provided the dosing pump at ground floor it only requires to shift the carboys up to ground floor. Hence Potential risk of carboys rupture followed by spillage while shifting on staircases was avoided.

3. Sulphuric acid and HCL bulk tank level monitoring during road tanker unloading operation has significant risk because the existing float type level indicators were not reliable and giving erratic reading.

Guided wave radar level transmitters installed in both Sulphuric acid and HCL tanks. Risk involved with Tank overflow due to faulty level indication was eliminated. Hence the tank level monitoring during road tanker unloading operation was made safe

4. Coal sampling from rail wagons:

Risks associated with existing process were sampling worker may fall from wagon while climbing due to sudden movement of wagons and damaged wagon ladders, may fall between wagons while moving from one to another wagon, may fall from wagon while unloading sample bags due to hurry, Unknowingly sampler may approach the wagons with charged OH line above. Some of the rail wagons coming with damaged ladders (we have less control over this as these wagons belongs to Indian railways) ; To eliminate the risk, a platform with staircase and hand railing provided adjacent to the railway siding where wagon halts. Now sampler can observe the wagon movement by standing on platform before stepping into wagon and directly step out from wagon to platform. Sample bags can be lowered to ground floor through the provision made in the platform

5. Coal storage bunkers level monitoring:

Coal bunker level measurement activity was being done by manually lowering the dip gauge (rope). Activity involves continuous manually tasks and worker may get exposed to coal dust.

We installed 3D level transmitters in all our 12 bunkers which enabled us to monitor the bunker level remotely from our coal handling plant control room. In addition to this temperature of the coal in the bunker are also monitored hence avoiding fire hazards. This resulted in reduced exposure to coal dust and manual handling hazard to at least by 2 workers on daily basis.

Rewards and Recognition for Plant Safety Leaders:

Plant Safety Leaders Reward and Recognitions			Reward and Recognitions by Dy CEO to PSLs	
Departmental Safety Leaders				
S. No.	Name of Plant Safety Leader	Department		
1	Vishal Pahune	AHP		
2	Pamesh Aganwal,	CHP		
3	Deepak Singh	CHP		
4	Arvind Kumar,	Operations		
5	Aabhas Chanekar,	Operations		
6	Mreenal Sharma	Operations		
7	Mahadev Dhole	BOP- Mech		
8	Abhishek Tiwari	Boiler- Mech		
9	Pawan Devgan	TG- Mech		
10	Abhay Sohale,	Electricals		
11	Tarakeswara Simma	Electricals		
12	Angeshwar Dewangan	Chemistry		
13	Rahul Das	C&I		
14	Nilesh Awari	OS		
15	Kishore Karemore	Civil		
16	Jitendra Tiwari	Stores		
17	Abhishek Patil	HR/FMS		

EHS Awards & Accolades received by GWEL:

The efforts put in by GWEL towards Health & Safety were recognizable through prestigious Safety awards by various organizations.



Good Green Governance Award-2015



Good Green Governance Award-2016



Golden Peacock Occupational Health & Safety Award 2015



GREENTECH Safety Award for Safety Management 2015



Environment Excellence Award 2016



Global Clean India Award - 2017



Global Safety Awards-2017



International Safety Award 2017 by British Safety Council

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