SAFETY AUDIT REPORT

As per IS 14489-2018 Standard

of

PARASAKTI CEMENT INDUSTRIES LIMITED

JETTIPALEM VILLAGE,
RENTACHINTALA MANDAL,
PALNADU DIST.- 522421

February, 2023

Audited & Prepared by
Balakrishnam Raju & Team

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PREAMBLE

M/s PARASAKTI CEMENT INDUSTRIES LIMITED is located at Jettipalem Village, Rentachintala Mandal, Palnadu Dist.-522421.

As Hazardous chemicals & processes are handled at site, the Management of the Industry has initiated a discrete External Safety Audit of its manufacturing Unit located at Jettipalem in Andhra Pradesh. Hence, the Management had requested J2 Industrial Solutions, Kadapa to conduct the External Safety Audit as per IS 14489-2018 Standard of their plant to assess Safety standards of their plant. Accordingly, the assignment was carried out on 07th & 08th February, 2023.

This safety audit was planned to self-assess the implementation part of Safety and Occupational Health Management Systems to identify site specific improvements plans and to meet regulatory requirements as per the work order given by the Management. The Safety Audit was conducted by referencing to IS 14489:2018 and taking in to consideration the ground realities and implementation status of various safe working methods, practices and management systems.

Audit was based on random sampling only. This report consists of various sections starting from a brief introduction followed by methodology, observations & recommendations on Safety Management Systems and site-specific observations and ending with conclusions. The statement of facts was made almost based on the objective evidence captured during the audit, omissions and misinterpretations expressed in this report, if any are purely inadvertent and un-intentional.

The Auditors thank fully acknowledge the dedication and co-operation rendered by the management and making the assignment easy sailing. **Our special thanks are given to Sri.M.S.N.Raju- V.P. (Works), Sri. V.L.Ganapathi Raju A.G.M. (Mechanical) and Sri. D.Nagaraju- Assistant Manager (Safety) for their excellent coordination for conducting the audit.**

We place on our records the proactive approach of Plant Personnel for their support and assistance extended to us in the process of site visits, technical discussions, information sharing and discussions.

With Best Regards

Balakrishnam Raju C
J2 Industrial Solutions
Date: 08.02.2023

1.0 INTRODUCTION

M/s PARASAKTI CEMENT INDUSTRIES LIMITED is located at Jettipalem Village, Rentachintala Mandal, Palnadu Dist.-522421.
The Company is having Factory License No. 15496 & Factory Registration No.18715. It is medium size manufacturing of OPC, PPC & SRPC Cement Private Sector.

About 142 permanent male staff & permanent workmen are engaged for carrying out various operations & activities under various functions such as production, Maintenance, Warehouse, Safety, Environment, Quality Control, Quality Assurance, Administration and Human Resource etc.
In addition to above man power, about 344 male contract workmen including security, gardening & housekeeping are also working at site to support various functions. The plant operates in three shifts in addition to General shift.

As regards to Safety of employees, the company, firmly believe that safety is not by chance but by choice and has taken many measures in improving the plant safety. It has incorporated the safety features to assure maximum safety to the equipment and personnel.

In continuation to its efforts of continual improvement, the industry had established a dedicated Safety team for the implementation of the management systems. The organization has established its Environment, Health & Safety Policy.

The recommendations made in this report are based on the Plant conditions and the existing Health & Safety systems witnessed at the plant.

2.0 ABOUT THE PLANT & FACILITIES

2.1 About the Site & Meteorological Data

Sr. No.	Parameters	Readings		
		Min.	Max.	Avg.
1.0	Ambient Temperature (°C)	21*C	45*C	33*C
2.0	Wind Velocity (km/hour)	10.23 m/s	17.1 m/s	13.66 m/s
3.0	Relative Humidity (%)	34.9%	90.8%	62.85%
4.0	Rainfall (mm/year)	1.47 cm	26.66 cm	14.06 m

2.1.1 Plant Location

https://www.google.com/maps/@16.6216889,79.4959668,2602m/data=!3m1!1e3

2.2 About Factory Management

2.2.1 Full address of the Factory:

M/s PARASAKTI CEMENT INDUSTRIES LIMITED is located at Jettipalem Village, Rentachintala Mandal, Palnadu Dist.-522421. Andhra Pradesh, INDIA.

2.2.2 Registered Office Head Office Address:

Myscape WEAVE, 5th floor, Financial District, Gachibowli, Hyderabad- 500002. Telangana State, INDIA.

2.2.3 Full Name of the Occupier

Sri. P. Yaswanth Krishna, Managing Director & C.E.O

2.2.4 Full Name of the Plant Head

Sri. M S N Raju Vice President (Works)

2.2.5 Full Name of the Factory HR&A.

Sri. G.Mallikarjuna Rao A.G.M.

2.2.6 Full Name of the Safety.

Sri. D.Nagaraju A.M.

2.3 Plant Operational Timings

a. General Shift: 8.00 hours to 17.00 hours

b. First shift (Shift A): 6.00 hours to 14.00 hours

c. Second shift (Shift B): 14.00 hours to 22.00 hours

d. Night Shift (Shift C): 22.00 hours to 06.00 hours

There are four shifts per day. i.e., Shift - A, B, C & General

2.4. GENERAL

2.4.1 Security Office

2.4.2 Admin & HR Block

2.4.3 QC Building

2.4.4 Canteen

2.5 UTILITIES & MAINTENANCE

2.5.1 DG Sets Room

2.5.2 Clinker yard

2.5.3 Air Compressors

2.5.4 PCC Room

2.5.5 MCC Rooms

2.5.6 Transformer/ Switch Yard

2.5.7 HT/substation Yard

2.5.8 Boiler

2.5.9 Cooling Towers

2.5.10 Packing Plant

2.5.11 Vehicle parking & loading

2.5.12 Silo

A34: Details of Utilities			
Sr. No.	**Description**	**Qty./No.**	**Capacity**
1.0	**Generators**		
1.1	Generator-1	1	500 KVA
1.2	Generator-2	1	500 KVA
2.0	**Transformer**	6	2000 KVA (6.6KV/415 V)
3.0	**Power Supply**	-	-
3.1	132/6.6 KV	2	12.5/15 MVA

2.6 PRODUCTION FACILITIES

Sr. No.	Description	Name	Products name	Description of manufacturing products
1	Raw Material Grinding	Raw Mill#1 Raw Mill#2	Raw Meal	Grinding of Limestone along with Bauxite/ AI Laterite/ Iron Ore
2	Raw Coal Grinding	Coal Mill#1 Coal Mill#2	Fine Coal	Grinding of Raw Coal/ Pet Coke
3	Pyro Section	Kiln#1 Kiln#2	Clinker	Preheating the Raw meal to 890℃, then feeding to Kiln where clinker is made and cooling the clinker up to room temperature
4	Cement Grinding	Cement Mill#1 Cement Mill#2 Cement Mill#3	Cement OPC PPC SRPC	Grinding clinker along with Gypsum and with Fly ash in case of PPC

2.7 WAREHOUSE & STORAGE FACILITIES

Sr. No	Name of warehouse	Description of Types of material storage (Solid, Liquid, Hazardous chemicals))
1.	Limestone Stock Pile (open)	Crushed limestone
2.	Limestone Stock Pile (Covered)	Crushed limestone
3.	Additive Yard	AI Laterite
4.	Additive Yard	Iron Ore
5.	Additive Yard	Bauxite
6.	Coal Yard	Raw Coal/ Pet Coke
7.	Gypsum Yard	Chemical Gypsum
8.	Fly ash Yard	Dry Fly ash
9.	Alternate Fuel Shed	Rice Husk

2.8 BULK STORAGE TANKS / SILOS

Legends: AG = Above Ground, UG = Under Ground, H: Horizontal, V: Vertical
MOC= Material of construction

Sr. No.	NAME OF STORAGE TANKS/ SILOS	CAPACITY, KL/MT	H/V	Type of Installation AG/UG	MOC
	HAZARDOUS/ CORROSIVE CHEMICAL STORAGE TANKS				
1	Raw Meal Silo -1	5400 MT	V	UG	RCC
2	Raw Meal Silo -2	6500 MT	V	UG	RCC
3	Cement Mill Silo -1	6000 MT	V	UG	RCC

4	Cement Mill Silo -2	6000 MT	V	UG	RCC
5	Cement Mill Silo -3	6000 MT	V	UG	RCC

2.9 HAZARDOUS CHEMICALS STORAGE TANKS

H= Horizontal, V=Vertical, AG=Above Ground, UG= Underground, CR: Carboys MOC= Material of construction

Sr. No.	NAME OF CORROSSIVE HAZARDOUS CHEMICALS	CAPACITY, KL/KG	H/V	Type of Installation AG/UG	MOC
	HAZARDOUS/ CORROSIVE CHEMICAL STORAGE TANKS				
1	HSD	**40 KL**	H	UG	MS
2	Sulfuric Acid	**2500 KG**	V	CR	Plastic
3	Caustic	**600 KG**	V	CR	Plastic
4	Sodium Hypo	**2000 KG**	V	CR	Plastic

2.10 GAS CYLINDERS & STORAGE

	Gas Cylinders		
S. No.	Name of Gas Cylinders	Nos. of Gas Cylinders	Usage Area
1	Oxygen Cylinder	**25 Nos**	Fabrication and Cutting area
2	LPG Cylinder	**05 Nos**	Fabrication and Cutting area
3	Nitrogen	**01 Nos**	Mines
4	CO2	**12 Nos**	Coal Mill

2.11 FIRE PROTECTION FACILITIES

2.11.1 Fire Hydrant Tank & Pump House

3.0 OCCUPATIONAL HEALTH & SAFETY AUDIT OBJECTIVES & METHODOLOGY AND SCOPE

3.1 OBJECTIVES OF OCCUPATIONAL HEALTH & SAFETY AUDIT

Occupational Health & Safety audit was conducted with the following objectives:

a) To carry out a systematic, critical appraisal of all potential hazards involving personnel, plant, services and operation method; and

b) To ensure that Occupational Health & Safety System fully satisfies the legal requirements and those of the company's written safety policies, objectives and program.

3.2 METHODOLOGY FOR OCCUPATIONAL HEALTH & SAFETY AUDIT

The following Methodology was adopted for carrying out the external safety audit,

3.2.1 Site tour & inspection of the entire plant for identification of potential hazards

3.2.2 Scrutiny & verification of records for various manufacturing, storage and material handling processes; scrutiny of records, documents pertaining to hazard identification, SOPs, safety work permits, training, monitoring & measurements, emergency preparedness, medical examination, etc;

3.2.3 Discussions with employees, contractors and discussions with Sr. management team at site.

3.2.4 An initial opening meeting was held with the Plant Operations - Sri.M.S.N. Raju -V.P. (Works), Sri.V.L.Ganapthi Raju, A.G.M. (Mechanical), Sri.D.Nagaraju- A.M. (Safety) and Sri.G.Mallikarjuna Rao A.G.M (HR& Admin). The scope of the occupational health & safety audit was agreed upon by the site Management.

It was decided to make tour of the following hazardous areas/ facilities:

i. Warehouse-1
ii. Clinker area
iii. Liquid Drums Storage Room
iv. Silos area
v. Production Blocks
vi. Utility Blocks
vii. Fuel storage area
viii. Fire Pump House
ix. PCC Panel Room
x. Boiler
xi. Transformer Yard
xii. DG set Room
xiii. OHC
xiv. Mines area
xv. Crusher area

3.2.5 During walk round, interaction with shop floor staff, chemists, workmen, and casual workers was done about their understanding of safety procedures being used at shop floor.

3.2.6 Identification of potential Occupational Health & Safety Hazards was done during walk round of plant facilities.

3.2.7 Observations were made with respect to Physical Hazards, Material Handling Practices & Hazards, Machine guarding, electrical hazards, Hazardous Chemicals handling practices & associated hazards, existing fire protection measures, existing fire prevention methods/ measures, Industrial Hygiene practices , work place monitoring of hazardous chemicals, PPEs, medical

examination , Work Permit system, emergency preparedness, mock drill, safety inspections, safety awareness level of workmen & staff and prevailing unsafe conditions & unsafe acts at site.

3.2.8 During the audit, as reasonably as practical Occupational Health & Safety Systems and system ability to achieve desired safety objectives of the organization in general and site in particular were examined in the facility.

3.2.9 The details of safety assessment, recommendations for improvement are enumerated in this audit report highlights the organization efforts and best practices on-going and those aspects where further steps if taken would benefit moving forward with already well managed safety systems in the premises.

3.2.10 A draft report was submitted to the management to correct factual errors / discrepancies, if any

3.2.11 A final approved Safety Audit report was submitted to the Management

3.3 SCOPE OF OCCUPATIONAL HEALTH & SAFETY AUDIT

The Scope of the Occupational Health & Safety Audit is to review of the existing Occupational Health & Safety Management System & safety measures pertaining to various elements of safety audit system as per IS 14489:2018 Standard to the extent which was made available to the auditor by the Management/ Organisation during audit period was carried out as mentioned below:

- IMS Policy
- Safety Organisation
- Safety Committee Meeting
- Minutes of Safety committee meetings
- Safety Promotional activities
- SOPs- Safe operating procedures for various operations
- Onsite Emergency Plan
- Mock Drill Reports & Records
- Accident/Incident Investigation System
- Training records on Safety, Fire and First aid
- Training documents (such as internal and external; Internal: Periodical on all major hazards, External: Work at Height, Mobile Equipment, First Aid, Fire Training etc.)
- Work Permit System
- Record of safety work permits
- Safety Inspection systems & Record of Plant Safety Inspections
- HARA Reports
- On Site Emergency Plan
- Previous Safety Audit documents
- HAZOP documents
- Statutory licenses (such as Factory, PCB, Fire, Boiler, PESO, Building stability,)

- Records of tests and examinations of equipment and structures as per statutes (such as pressure vessels, lifting tackles, SRV's, etc.)
- Maintenance and testing records of fire detection and fire-fighting equipment
- Fire Protection measures & maintenance
- Records of monitoring of flammable and explosive substances at workplace
- Maintenance and testing records of fire detection and fire-fighting equipment
- Records of Industrial Hygiene survey (Noise, ventilation, illumination levels, airborne and toxic substances, explosive gases
- Details of Waste disposal methods
- Calibration and Testing records
- Medical Examination reports of employees

Safety Audit is limited to geographical areas of plant facilities only. The Scope of the Safety Audit is limited to the facility; hence the safety audit is facility oriented and not subjected to specific product/ process.

The elements of safety audit included the identification of possible loss-producing situations, unsafe conditions and recommendations to minimize the occurrence of such loss producing events.

Recommendations were made (engineering & administrative) to mitigate the identified Occupational Health Hazards & Safety Risks for enhancing the integrity and reliability of operations & site.

While every minute point cannot be observed by the auditor, every effort is made to identify safety related deficiencies with reference to the system approach as per IS 14489-2018. It is a sample Safety Audit. It was also agreed upon that the observations made in one area shall be viewed/observed for other areas also.

The audit report is to be read in conjunction with the existing and Previous Hazard Analysis and Risk Assessment studies, Safety Audit, HAZOP & Risk Assessment and Safety Audit conducted earlier by the Organization as well as external agencies, if any.

4.0 AUDITING AGENCY & SCHEDULE OF AUDIT

Sri. Balakrishnam Raju C- founder of J2 Industrial Solutions and

Sri. Raja-Safety auditor- Kadapa was assigned the work of carrying out Safety Audit as per IS14489-2018.

The plant was visited on 07th & 08th February, 2023.

The following Safety Auditors carried out the external safety audit:

4.1 The EHS & Safety consultant – Sri.Balakrishnam Raju C as Lead Auditor

Sri. Balakrishnam Raju C- founder of J2 Industrial Solutions (Graduate in Bachelor of Mechanical Engineering, & MBA in Safety Management with more than 16 + years of experience in various MNC as safety Officer to Asst. General Manager-Safety (Govt. Ratified Safety Officer), Chartered Engineer, AP Govt Empaneled Safety Auditor, Safety Trainer.

4.2 Sri. Raja- Associate Safety Auditor

Electrical Engineer- B'Tech. and perusing as Auditor. Having 4 years of experience in the field.

The safety auditors made tour of all areas as mentioned above & discussed with concerned In-Charge along with Sri. M.S.N.Raju – V.P. (Works) and Sri. D.NagaRaju- A.M. (Safety). This external safety audit report is prepared based on the information provided by the company regarding the existing storage practices, manufacturing process, existing safety practices, Occupational Health & Safety Management System and Fire Safety measures etc.

During the Plant Visit and studies, Top Management, respective Functional Heads, Employees and Safety Executive have evinced good interest and cooperated in the best efforts.

5.0 EXECUTIVE SUMMARY

The External Safety Audit was carried on 07th & 08th February, 2023 as per the contents of IS 14489: 2018 Audit Check List. The main objectives of audit were to particularly examine occupational Health & Safety (OH&S) systems prevalent in the factory, identify potential hazards and suggest corrective actions wherever necessary.

The information presented in the report is based on inspection of the factory premises, discussions held with employees and management representatives and perusal of various documents & records. The recommendations made in this report are based on the conditions and systems prevalent in the premises of **M/s PARASAKTI CEMENT INDUSTRIES LIMITED** is located at Jettipalem Village, Rentachintala Mandal, Palnadu Dist. A.P.-522421.

Apart from general observations at each Production and storage areas , major emphasis was given on scrutiny of hazardous & heavy materials handling, Process safety elements, working at heights, working at moving machinery , storage of flammable materials, waste management etc., regarding the administrative controls like welfare amenities, standard operating procedures, existing training and implementation pattern of safety precautions , incident investigations , management controls in force, emergency mitigation plan on board, firefighting capability etc.; how these are institutionalized in the factory to achieve sustainable performance.

Recommendations are made as may be useful for further improvement. The audit organization sincerely thanks for the co-operation received from one and all contacted during the factory visit and evaluation of systems.

The audit was conducted to the best of experience gained in the field of process safety evaluation & regulatory compliance verification. The statement of facts was made based on the objective evidences captured during the audit, Omissions and misinterpretations expressed in this report, if any are purely inadvertent and un-intentional.

The success of the audit exercise lies in implementation of the recommendations made in the report. Due care has been exercised while framing the recommendations to make them simple, practicable, feasible and thereby workable. It is the responsibility of the top management to make available the necessary resources to implement the recommendations of the report.

6.0 REVIEW OF OCCUPATIONAL HEALTH & SAFETY MANAGEMENT SYSTEM AND FACILITIES DURING WALK ROUND AS PER IS 14489:2018 STANDARD PROTOCALS

The Status of Safety Management System & Safety measures were reviewed as per IS14489-2018 Standard check list. The observations made during "Walk –Round" of the site were incorporated for each element of IS14489-2018 Standard check list wherever applicable.

S. No.	Gaps identified during review of Safety existing Management System & Hazards Identified during "Walk –Round"	Recommendations- (Rn) "R" denotes Recommendations & "n" denotes Recommendation Serial Number
C 1: OH & S MANAGEMENT		
C-1.1	**Occupational Health & Safety Policy**	
a.	The organization has established its IMS Policy dated 01.04.2020.	**R1:** Safety Policy to be revised every year
b.	The IMS Policy is signed by the Executive Director (Operations) of the Organization.	
c.	The IMS Policy has been made known to all employees by displaying at main gate and also at strategic locations of the plant as mentioned below: 1.Main Gate 2. Admin 3. Production Blocks & Safety 4. QC & QA	
d.	IMS policy is available in local language and made known to all by imparting training.	
C-2	**OH & S ORGANIZATIONAL SET UP**	
C-2.1	**Safety Department**	

a.	Company has a full- fledged Safety department. Safety department is headed by Sri. D.Nagaraju - A.M. Safety. He is responsible for overall safety function at site including Fire Safety Measures, Emergency Preparedness, Hazard identification & Risk Assessment to prevent workplace incidents	_____
b.	The Site safety In-Charge is guided by Plant Head	_____
c.	The strength of Safety department: 01. One Safety person is available in each shift. The Shift safety persons are responsible for monitoring unsafe acts & conditions, issuing safety work permits, Imparting training to staff & contract workmen etc.	_____
d.	Sri. D.NagaRaju –A.M. Safety reports to the Plant Head.	_____
C-2.2	**Safety Committee**	
a.	The Factory has well defined Safety Committee.	_____
b.	Safety Committee (SC) has been constituted by the Management. Safety Committee is constituted with members from each department. The tenure of the Safety Committee is for Two Year.	----------
c.	The Safety Committee is constituted as per the Statue- 13 members representing Management and 13 members representing workmen & non-management. In addition to 03 regular members of Safety Committee, Chairman, Co-Ordinator & Secretary of Safety Committee are also part of Safety Committee for facilitating the meeting	_____
d.	The Plant Head is the Chairman of the Safety Committee & A.M-Safety is the Secretary of the Safety Committee.	_____
e.	The management members are selected by the Plant Head in consultation with respective Head of departments. Worker's representatives are selected on rotation basis from all departments. The selection is done by the respective Department In-Charge and Assistant Manager-Safety.	_____

f.	The Safety Committee Meeting is held once in two months. a)Circular for Safety Committee was sent to all members of Safety Committee on 26.12.2022 b)The last SCM was held on 29.12.2022.	_____
g.	Discussions are held as per the Agenda of the Safety Committee Meeting. The agenda included the following: i. Review of the Minutes of the previous Safety Committee Meeting ii. Safety Observations of the Internal Audit iii. External Audit Reports iv. Status of the Safety Objectives & Targets and SMPs v. Review of implementation of safe methods of chemicals handling, causes of recent incidents and near-misses vi. Changes in the statutory requirements such as National, International & Industry safety standards etc. vii. Review of resources such as trained personnel, requirements of equipment and appropriate training and retraining methods, viii. Review of usages of PPE ix. Review of first aid cases and list of patients visited to OHC x. Any other points related to safety requirements	_____
h.	The status of compliances of last meeting is also found being reviewed. The names of the persons raising new points, Responsibility, target date and status are part of Minutes of the Safety Committee Meeting.	_____
i.	Minutes of Safety Committee Meeting dated 29.12.2022 was found prepared.	_____
j.	Tracking for the compliance of recommendations of safety committee is done through a single CAPA tracking excel sheet by the Assistant Manager-Safety.	_____
k.	MOM of safety committee meeting is forwarded to	_____

	all HODs.	
l.	There is active participation by the workers by way of giving new suggestions	_____
C-2.3	**Safety Budget**	
a.	Need based safety budget approval is being given by the Plant Head in consultation with the Corporate Safety Head.	_____
b.	Safety Budget is arrived at based on external safety audit recommendations, customers safety audit recommendations, activities, and proposed safety improvement projects being undertaken by the Management.	_____
c.	The safety budget for 2021-22 was Rs.30.0 Lakhs & for 2022-23 is Rs.35.0 Lakhs	_____
C-3	**SAFETY MANUAL**	
a.	An elaborated written doc such as "Safety Procedure Manual Version PCIL/PM/14, Rev:01/02 is found prepared for ensuring safety in manufacturing blocks & other activities being carried out in the site.	_____
b.	The major sections of the Safety Manual include the following: i. IMS Policy ii. Objectives and Programmes of the safety department iii. Legal and Other Requirements iv. General safety practices v. General safety guidelines vi. Workplace Safety a) General Work Permit b) Work at Height Permit c) Confined Space work permit d) Hot Work permit e) LOTO- Lock Out Tag Out f) Excavation Work permit vii. Contractors Safety viii. Transporters Safety ix. Equipment Safety x. Safety system in Stores	_____

	xi. Emergency handling guidelines xii. Plant risk evaluation xiii. Hazop Study xiv. Training xv. Handling and Maintenance of Fire Extinguishers and Fire Hydrant System xvi. Maintaining of Personal Protective Equipment (PPE)	
c.	Moreover, individual Safety SOP for various safety aspects has been found prepared & being implemented for ensuring safety of personnel, plant & machineries.	
C-4	**STANDARD OPERATING PROCEDURES**	
a.	40 Numbers written Safety SOPs are prepared in English language for the site & relevant SOPs are made available with each department. Monitoring of safety activities is being done as per SOP.	_____
b.	A copy of relevant safety SOP is issued to each production block, warehouse & other departments. Training on SOP is being given to staff as per the Yearly Training Schedule & Calendar.	_____
c.	Safety SOPs are prepared by Asst. Manager- Safety, & Approved by In-Charge- HR&A & Safety Coordinator.	_____
d.	SOPs are being updated as per IMS procedure – once in every 03 years.	_____
C-5	**PLANT MODIFICATION PROCEDURES**	
a.	A system for effecting any change in the existing plant, equipment or process that may be caused by any major modification in process or equipment etc. and for up-dating P & I diagram and other related documents is in place.	_____
b.	The P & I diagram and other related documents are being updated accordingly as per Change Control SOP.	_____
c.	Hazard assessment shall be done before implementation of modification, if mentioned in the Impact Assessment of change proposal	_____

C-6	WORK PERMIT SYSTEM	
a.	The following types of work permits are being used for the site: • Confined Space Entry • Hot Work Permit • Working at Heights • General Work Permit • Excavation Work Permit • Cold Work Permit • LOTO / Line clearance work permit	_____
b.	A written Procedure SOP No. PCIL/HSOP/87-OF-02, Effective Date: 01.04.2020 for "Procedure for Hot Work Permit" is prepared and is implemented for ensuring safety during hot works.	_____
c.	A written Procedure SOP No. PCIL/HSOP/87-OF-03, Effective Date: 01.04.2020 for "Procedure for Confined Space Work Permit" is prepared and is implemented for ensuring safety during Confined space entry works.	_____
d.	A written Procedure SOP No. PCIL/HSOP/87-OF-01, Effective Date: 01.04.2020 for "Procedure for Cold Work Permit" is prepared and is implemented for ensuring safety during cold works such as breakdown, preventive maintenance and civil works.	_____
e.	A written Procedure SOP No. PCIL/HSOP/87-OF-07, Effective Date: 01.04.2020 for "Procedure for Excavation Work Permit" is prepared and is implemented for ensuring safety during excavation works.	_____
f.	A written Procedure SOP No. PCIL/HSOP/87-OF-04, Effective Date: 01.04.2020 for "Procedure for Working at Heights" is prepared and is implemented for ensuring safety during excavation works.	_____
g.	A written Procedure SOP No. PCIL/HSOP/63, Effective Date: 01.04.2020 for "SOP for Unloading of Raw Material" is prepared and is implemented for ensuring safety during unloading of raw materials from road tankers/tempos/trucks.	_____
h.	A written Procedure SOP No. PCIL/HSOP/87-OF-09,	_____

	Effective Date: 01.04.2020 for "Procedure for first line break permit" is prepared and is implemented for ensuring safety during pipe line breaking	
i.	A written Procedure for "Authorized Sign" is not prepared and is implemented for ensuring that only Authorized Signatory can sign on any safety work permit in order to ensure safety involving any safety work permit	**R2:** Prepare a list of "Authorized Sign" for ensuring that only Authorized Signatory can sign on any safety work permit in order to ensure safety involving any safety work permit works. The responsibility shall be assigned to authorized persons as per SOP for each permit for issuing of safety work permit
j.	Structured Check list is being used for each type of permit as per the Procedure for ensuring safety of personnel & safety of work place	_____
k.	The copy of safe work permit is sent to safety officer before execution of the job. The safety officer also inspects the area & signs on the Permits.	_____
l.	The validity period is specified in each type safety work permit	_____
m.	The records of work permit are available and maintained in proper order by the Safety Department.	_____
n.	Training program is being conducted on Work Permit System. Department names are found incorporated in the Training Attendance Form No. PCIL/SAF/R-11.	**R3:** Conduct training program on Work Permit System" for Authorized signatories once in every 6 months. **R4:** Conduct training program at-least twice in a year for persons involved or engaged for Hot Work Permit, Confined Space Entry Permit & Height Work permit in view of potential hazard having very high consequences.
o.	Filled Safety Work Permits were reviewed and found in order.	_____
C-6.1	**Working at Height**	
a.	A written Procedure SOP No. PCIL/HSOP/87-OF-04, Effective Date: 01.04.2020 for "Procedure for Working at Heights" is prepared and is implemented for ensuring safety during excavation works.	_____

b.	The check list points in the Height Work Permit include the following: i. Scaffolding/Ladder/working platform arrangement ii. Approval of Scaffolding by project iii. Proper support & anchoring of ladder iv. Condition of Full Body Harness with double lanyard v. Anchoring point for Safety harness vi. The workers deputed for height works are physically fit vii. Workers are informed about the possible hazards viii. Safety Nets to arrest falls when climbing up/down or moving at heights An adequate safe access is provided to all places where workers need to work as per the Height Work Permit.	**R5:** Consider to include "Clearance of work at height area clear & safe from overhead electrical lines/other protruding structures" in the Format No.PCIL/HSOP/73- Permit to work at height. **R6:** Workers Training Card or ID card being issued to contract workers /workmen should incorporate "Medically Fit to work at Height" and "Trained for work at height"
C-6.2	**Work in Confined Space**	
a.	A written Procedure SOP No. PCIL/HSOP/87-OF-03, Effective Date: 01.04.2020 for "Procedure for Confined Space Work Permit" is prepared and is implemented for ensuring safety during Confined space entry works.	_____
b.	"Vessel Entry Permit" Format No. PCIL/HSOP/87-OF-03, Rev.01 for filling the check list points by user/ initiator, electrical & maintenance department and Safety department.	_____
c.	The monitoring of the oxygen atmosphere inside the confined space is being carried out by using Hand Held Oxygen meter.	_____
d.	Oxygen Monitoring in the confined space is not being done every two hours and this requirement is also incorporated in the CS entry permit check list points (1 to 16 Points) in the Format No. SOP for Flue gas O2 Analyzer.	**R7:** Revise the SOP No. PCIL/HSOP/87-OF-03for "Procedure for Confined Space Work Permit" and Format No. SOP for Flue gas O2 Analyzer. by incorporating the requirements of carrying out Oxygen Monitoring, Toxic gas monitoring by using Toxic gas meter & LEL monitoring by using LEL meter in the confined space at every two hours.

e.	The suitable personal protective equipment (PPE) is specified in the CS Permit for the person entering the confined space and is ensured by the permit issuing person.	_____
C-7	**CONTRACTORS' SAFETY SYSTEM**	
a.	A written procedure SOP No. PCIL/HSOP-61, Effective Date: 01.04.2020 for "SOP for engaging Contract Labour" is prepared and is implemented by HR&A department.	_____
b.	Training programs are being conducted for contract workers at site.	_____
c.	Contractors & its Employees Trade wise Trainings & HSE Induction Training covering below topic are conducted: i} PPE ii} Fire Prevention & fire fighting iii} Working at Height iv} Safety with Gas cylinders	_____
C-8	**PLANT DESIGN AND LAYOUT**	
a.	Adequate space is provided between the equipment, vessels for working, for carrying out maintenance etc. in Production Blocks 4 & 7 etc.	_____
b.	The space for storage tanks is enough having adequate clearance between them.	_____
c.	Emergency exits have been provided for all production blocks and other areas	_____
d.	The width of internal road inside the factory is about 06 meters. Width of approach road to the site is about 06 meters.	_____
C-9	**MEDICAL MANAGEMENT OF ACCIDENTS**	
a.	OHC is available in the colony. Two sets of Medical Oxygen Cylinder & two stretcher are provided in the OHC. One number Full spare Medical Oxygen Cylinder is also provided in OHC. Anti-Venom Kit for Snake Bite (06 Number) is provided in OHC.	
b.	Ambulance is available in the site -Ambulance No.	**R8:** Suggested to obtain Medical Badge

	AP39 TY 2292. Ambulance driver is available 24x7 at site for shifting injured person to the nearby hospital.	for Ambulance Drivers from the District Medical Officer.
c.	50 Numbers trained First aiders are available at site as per OSEP and about 05-10 to trained First aiders are available in shift for medical treatment for injuries of first aid nature types.	_____
d.	Mutual aid scheme is made available with the nearest hospitals located at about 15 to 25 KM from the site as per OSEP to manage and treat major injuries during emergency.	_____
C-10	**MANAGEMENT OF EMERGENCIES (NATURAL / MAN-MADE)**	
a.	Natural calamities with action plans are found outlined in the existing "Onsite Emergency Plan".	_____
b.	Man-made emergencies have been incorporated in the existing "Onsite Emergency Plan".	_____
c.	Training on emergency preparedness is being given at a predetermined frequency to employees to make them aware of the measures to be taken during emergencies	_____
d.	A training program on "Fire Safety Awareness and Fire Fighting Drill and Emergency Preparedness" was found conducted on 13.09.2022 for 16 participants from Store, Mechanical, Electrical, Process, QC, WHRP, Civil, P&A, Mines, Garage & Security departments etc. It was clear from this training attendance form this training was conducted to ERT members.	----------
C-11	**EMPLOYEES SELECTION AND PLACEMENT**	
a.	A written procedure SOP No. PCIL/P&A/SOP 01, for "Recruitment/ Selection / Confirmation" is in place for the site and is being implemented by HR	_____
b.	HR&A norms are available for selection of different category of employees. Head of the respective department is responsible for preparation & approval of department person's job description.	_____
c.	Pre-employment medical examination is being conducted for new employees as per SOP No.	_____

	PCIL/HSOP-82 for "SOP for Medical check-up"	
C-12	**SAFETY CULTURE**	
C-12.1	**Attitudes of Managers**	
a.	The managers are also given training to follow the plant safety rules always	**R09:** Safety communication percolation down the line is poor in main production area. Looks less priority to safety communication in the area by line manager. Needs strong commitment by the line managers to set by example. i.e., when interviewed with a housekeeping supervisor about recent safety communication, he could not able to tell.
b.	There was a positive & transparent participation during external safety audit. Managers took a positive part in safety audit during safety reviews and audits	_____
c.	The respective manager is responsible for ensuring safety in his areas. The management staff has been trained to investigate any safety violation and take necessary actions to prevent recurrence of safety violation.	_____
d.	Counseling is being done by the line management & Safety team for giving Instructions in case no usage of PPE given by the Management takes place.	_____
C-12.2	**Attitudes of Workers**	
a.	During PEP talk & safety training, it is made aware to workers about the consequences of their wrong actions & also consequences of not following SOP & OCP and site safety rules.	_____
b.	Workmen & contract workers were found wearing PPE during safety walk round of the plant.	_____
C-13	**STATUTORY LICENSES, APPROVALS AND RECORDS**	
a.	A written procedure SOP No. PCIL/PR10 – F01 for "SOP for Legal Compliance" is in place for the site and is being implemented by Safety and relevant department Heads such as Mines, HR, Maintenance etc.	_____

b.	Licenses, NOC, Permits were examined during the external safety audit. These documents are conforming to the legal requirements with respect to renewal & testing.	----------
c.	Factory License No. 15496 with Maximum 36621.95 HP and for Maximum numbers of workers 500 workers application for amendment was verified & found in Order. The Occupier is Mr. **P. Yaswanth Krishna-PARASAKTI CEMENT INDUSTRIES LIMITED**.	_____
d.	Public Liability Insurance Policy with issuance date 26.08.2022 with period of Insurance from 26.08.2022 to 25.08.2023 was found available and is in order.	_____
e.	Renewal of PESO License No. P/SC/AP/14/4355 (P153919) dated 29.11.2018 for Storage of Petroleum Class A (0.00 KL) & Class B (40.00 KL) in Storage Tanks was verified and found in Order. The Storage License is valid up-to 31.12.2023.	**R11:** Display PESO License No. P/SC/AP/14/4355 (P153919) for Class A (0.00 KL) & Class B (40.00 KL) in Storage Tanks near Packing Tank Yard with Permitted quantity for storage.
h.	Certificate for use of Boiler in Form-VI of boiler No. AP-6724 of boiler rating of 1392m2 dated 14.12.2022 is found available and the permission to use boiler is from 02.12.2022 to 01.12.2023.	_____
i.	Certificate for use of Boiler in Form-VI of boiler No. AP-6725 of boiler rating of 1161m2 dated 14.12.2022 is found available and the permission to use boiler is from 02.12.2022 to 01.12.2023.	_____
j.	Certificate for use of Boiler in Form-VI of boiler No. AP-6726 of boiler rating of 4884m2 is found available and the permission to use boiler is from 02.12.2022 to 01.12.2023.	_____
k.	Certificate for use of Boiler in Form-VI of boiler No. AP-6727 of boiler rating of 7036m2 is found available and the permission to use boiler is from 02.12.2022 to 01.12.2023.	

l.	Renewal of Consent & Authorization Order vide Consent Order No. APPCB-11022/125/2018-TEC-CFO-APPCB Dated 28.07.2020 was found received from the Andhra Pradesh Pollution Control Board and the Combined Order of Consent & Hazardous Waste Authorization is valid till 31.10.2025.	_____
m.	CEIG Certificate vide Orde No. Lr. No. 402/2023. Dated 17.03.2023 was found available for HV electrical installations (132KV/33KV/11KV), Installations load at site.	_____
C-14	**MOTIVATIONAL AND PROMOTIONAL MEASURES FOR OH & S**	
a.	Occupational health and safety contests are being organized in the factory during National safety week celebrations. Competitions such as slogans, essay writing, safety drawing, safety quiz etc. are organized.	_____
b.	The last National Safety Day celebration was made on 04.03.2022. The following competition's / consents were organized: 1.Safety Slogans & Posters - Maximum three from each participant 2. Safety Quiz & Essay writing and Safety Suggestions 3. SCBA Donning test & Identification of Unsafe act and unsafe condition from displayed poster/picture 4.Mock drill Awareness 5.Department wise 5S Competitions on Good Housekeeping	_____
c.	Safety Signages Boards in Telugu & English have been displayed at various locations of the plant.	_____
d.	The occupational health and safety information including accident statistics are disseminated in the factory in Safety Committee Meetings	_____
e.	Safety Posters, PPE signages etc. are found displayed in production blocks. For example: The following safety signages in Telugu & English were found displayed in production blocks & warehouse: i. Do's & Don'ts of Gas Cylinders handling	_____

	ii. Electrical hazards iii. Fire Safety iv. Welding, Gas Leaks hazard v. Hot works hazards vi. Fire Extinguisher handling etc.	
C-15	**HAZARD IDENTIFICATION AND JOB SAFETY ANALYSIS**	
a.	A written procedure SOP No. PCIL-PR03, Effective Date: 01.04.2020 for "SOP for Hazard Identification, Risk Assessment and Determining engineering controls" is prepared and is implemented by Safety department. A written procedure SOP No. PCIL-PR03-F01, Effective Date: 01.04.2020 for "SOP for Hazard and Operability Study {HAZOP}" is prepared and is implemented by Safety department.	_____
b.	Hazard and Operability Study (HAZOP) and Risk Assessment has been carried out for process related hazards from Products being manufactured at site with internal team.	_____
c.	Tracking of compliance for recommendations in HAZOP Report is being done by the Safety department.	_____
d.	Preventive & protective safety measures have been taken by the Management to prevent hazards as per HAZOP documents. Engineering control measures are taken by the Organization such as: f. Alternate fuels, Waste heat Recovery & hot water circulation system, ii. Explosion venting to all Trat Dryers, iii. SRV/RD for vessels iv. Flame arresters to vents of flammable storage tanks	_____
e.	Following preventive safety measures against identified hazards are also taken: • Safety Permit System • Acoustic enclosures for DG Sets • Earthing to all vessels & Bonding to flange joints • Interlocking and other engineering controls,	_____

	wherever needed	
f.	HAZOP & Risk Assessment for Boiler was not found carried out.	**R12:** Consider to conduct HAZOP & Risk Assessment for Boiler for identification of hazards during boiler operations.
C-16	**PRODUCT SAFETY**	
a.	Hazards arising from use of the products are identified during HAZOP & HIRA studies.	_____
b.	Material safety data sheets have been prepared for the products & raw chemicals.	_____
c.	Risk Labels are affixed on containers of products and raw chemicals.	_____
C-17	**SAFETY TRAINING**	
a.	A written procedure SOP No. PCIL-PR-15, Effective Date: 01.04.2020 for "SOP for Safety Training" is prepared and is implemented by Safety department.	_____
b.	Training Needs Identification (TNI) with respect to occupational health & safety for all functions & levels for all departments have been carried out by the respective Head of Departments & HR Head.	_____
c.	Induction training program for all new employees (Chemists, Executives & above) is in place as per SOP.	_____
d.	Induction training program for all new employees (workmen) is in place SOP	_____
e.	The duration of Induction Training for new employees is for 01 hours.	_____
f.	Monthly training calendar is prepared for giving "Refresher Training" The duration of "Refresher Training" is from minimum 30 minutes to maximum 01 hours based on training topics.	_____
g.	"Refresher Training" is being imparted by executive safety & above.	_____
h.	Training evaluation is being done for each safety training topic at the end of training by the Safety department. Oral Evaluation & evaluation by questionnaire of training is being done by the trainer on the spot. The qualifying marks are 80%	_____

i.	The following infrastructure facilities are available for imparting training: a. Training Hall equipped with Audio /Video facility - Two numbers b. Training Hall-Seating capacity: 30 persons per training hall c. Overhead Projector-01 numbers d. White Screen-01 numbers e. Paper Board-01 numbers	_____
j.	Training is conducted by qualified person only. Subject matter Experts are engaged for giving safety training.	_____
k.	Training Plan for 2022 (April- March) has been found prepared by SAFETY.	_____
l.	Following documentation system has been established to maintain the safety training records: i. Training Plan ii. Training Attendance Form as per Format No.PCIL/P&A/F 03. iii. Employee Training Record iv. Induction Training Format The Safety Training Attendance Log is being maintained by HR&A/Safety. Individual Training card of each employee is also maintained by HR.	_____
m.	All the employees are periodically trained / retrained once in a year.	_____
n.	Training man-hours for chemists & above: per employee per annum is 4 Hours.	_____
o.	Training man-hours for workmen: per employee per annum is 04 Hours.	_____
C-18	**CHANGE MANAGEMENT**	
C-18.1	**Management of Change**	
a.	A system for effecting any change in the existing plant, equipment or process that may be caused by any major modification in process or equipment etc. and for up-dating P & I diagram and other related documents is in place. A written procedure is in place.	_____

b.	The P & I diagram and other related documents are being updated accordingly as per Change Control SOP.	_____
c.	Hazard assessment shall be done before implementation of modification, if mentioned in the Impact Assessment of change proposal	_____
C-18.2	**Mechanical Integrity**	
a.	A written procedure for "Mechanical Integrity" of equipment that are critical to safety aspects is not found prepared by Safety department & Engineering department together.	----------
b.	Preventive maintenance SOPs for various equipment are found prepared & are being implemented for ensuring healthiness & good performance of equipment. Refer to **Annexure-A1 for Preventive Maintenance schedule** of various equipment that are critical to safety.	_____
c.	Inspections and tests of safety devices are being performed as per the predetermined frequency. For example: i. Safety relief valves on vessels- Once in a year by a competent person ii. Safety relief valves for Boilers- Once in a year by a competent person iii. Earth pit resistance monitoring- Once in a month by inhouse electrical department team iv. Ultrasonic Thickness for reactor-Once in 12 months by competent external agency v. Ultrasonic Thickness for Air Receivers & Nitrogen Receivers-Once in 06 months by competent external agency vi. Transformer oil testing- Once in a year by an external agency	_____
e.	Records of testing are being maintained in FORM 8 for pressure vessel & in FORM No. 38 for lifting tools & tackles by engineering & utility department	_____
f.	Refer to **Annexure-A2 for Statutory Testing schedule** of various equipment that are critical to	_____

	safety.	
g.	Calibration of instruments & safety related equipment is being carried out at a predetermined frequency. Refer to **Annexure-A3 for Calibration schedule** of various equipment that are critical to safety.	_____
C-19	**PHYSICAL HAZARDS**	
C-19.1	**House Keeping**	
a.	A written procedure SOP No. PCIL/HSOP/12, Effective Date: 01.04.2020 for "SOP for Housekeeping" is prepared and is implemented by HR department. Frequency: Floor: Once in a day or more frequently as required Toilet: Three times in a day or more frequently as required Roads and Lawns: Once in a day or more frequently as required	_____
b.	All the passages, floors and stairways in Production Blocks were found in good condition. General Housekeeping inside the Blocks & roads etc. are found to be good during safety audit walk round.	_____
c.	Spill containment Dykes have been provided for pumps, storage tanks in the plant.	_____
d.	Approach Roads are kept clean and no obstacles were found during audit. Walkways were found free from any obstructions.	_____
e	Housekeeping is not up to the mark in Main production area, Boiler area, Kiln, Clinker, Work Shop, DG set room, loading etc.,	R13: Improve the standard of Housekeeping in main production area, Boiler area, Work shop, DG set room by removing unwanted materials & by properly keeping materials in order to avoid accident.
C-19.2	**Machine and General Area Guarding**	
a.	Moving parts and point of operation of machinery have been provided with guards. For Example: i. Guards have been provided to Agitators of vessels, except for few vessels	_____

	ii. Vertical drive motors have been provided to Glass Lined vessels & SS vessels in Production Blocks, wherever possible, thereby eliminating the rotating Belt drives or couplings to motors iii. Guards have been provided to motor fans of all pumps iv. Guards have been provided to couplings of pumps, except for few couplings	
b.	Guards have been provided to belt drives of compressors, couplings for pumps, agitators of vessels, belt drives for agitators of vessels. However, these guards do not ensure "Zero Access" to body parts from the rotating couplings, belt drives, agitators of vessels etc.	----------
c.	Fire Pumps are getting operated in "Auto Mode". "Caution Signages" are not found provided for alerting personnel (specially housekeeping personnel) to be away from Auto Mode Operation pump.	**R14:** Display "Caution Signages & Caution" in regional language & English Fire Pump House for alerting personnel (specially housekeeping personnel) to be away from Auto Mode Operation pump
d.	A written procedure is found made for machine guarding methods for various types of rotating & moving parts of equipment, Pumps, machines etc. and also for inspection of machine guarding	----------
C-19.3	**Material Handling**	
a.	Adequate equipment for handling materials is provided for usages at site. The material handling equipment included	_____
b.	Safety inspection check list is found prepared for inspection of Drum Trolleys, Four-wheel trolleys, etc. at a predetermined frequency for ensuring these materials handling equipment are always in good working condition	--------
c.	Workers have been trained for manual handling. Two persons are engaged for handling 50 Kgs weight bags.	_____
d.	The workers are made to know hazards associated with manual material handling since they get	_____

	refresher training on material handling. A training program was found conducted on 13.08.2022 for two hours duration where 100 participants from Production department were trained.	
e.	Lifting equipment such as D shackles tested by external Competent Person on 4-1-2022 and certificate issued in form -38 of Rule 55 of AP Factories Rules	**R15:** Lifting equipment test Certificates must be issued in form -38 of Rule 55A of AP Factories Rules
g.	Trained & Authorized Drivers for stacker have not been identified for safe operations of Fork Lift & Stackers in Warehouse. The names of Authorized Stacker Drivers were not found displayed on Stacker for ensuring that unauthorized & untrained persons are not operating the Stacker	**R16:** Organize safety training for operation of Fork Lift, Loaders Cranes, through an external agency. **R17:** Display the names of Authorized drivers on Fork Lifts for ensuring that authorized & trained persons are operating the Fork Lifts **R18:** Display details of testing of Fork Lift and due date on each Fork Lift & Loader.
h.	The date of Preventive maintenance of Fork Lift was not found displayed on Fork Lift.	----------
i.	SWL (Safe Working Load) was not found displayed on Stacker & Fork Lift being used in Warehouse.	**R19:** Display the SWL (Safe Working Load) on Loader &Fork Lift being used in all over the plant.
j.	Passenger Lift of 1200 KG capacity, Sr. No. H-327, Location - Preheater-II was found tested on 14.03.2023 vide report no. PCCL/PL/01	_____
k.	SWL for all Goods Lifts in Production Blocks was not found posted. The details of test date & due date are also not found displayed near each Goods Lift in Production Blocks	-------
l.	Dock Leveler being used in warehouse-1 was not found tested as per the statutory requirements	----------
m.	Test certificates of hydra crane is being used by vendors/ contractors are found available with vehicle operator.	----------

n.	Safety Belts are being used around drums/containers kept on pallet to avoid falling of containers during lifting & lowering by the Stacker	_____
o.	Stacker operators /person employed to operate are being medically examined for eyesight and color vision during annual medical examination.	_____
C-19.4	**Electrical Safeguarding**	
a.	Licensed electrical-wiremen (01Number) & Licensed electrical supervisor (10 Numbers) are available at site for carrying out electrical works.	_____
b.	The Permit No. 1-1686 of Wireman Mr. CH. Koteswara Rao was found renewed from 31.08.2022 to 30.08.2027 by the Secretary, A.P. Electrical Licensing Board, Guntur.	_____
c.	The Permit numbers of all 08 Licensed Supervisors & 01 Wireman are found available. For example: 1. The Permit No. 1-1524 of Supervisor Mr. A. Venkata Rao was found renewed from 17.12.2018 to 16.12.2023 by the Secretary, A.P. Electrical Licensing Board, Guntur. 2. The Permit No. 1-1696 of Supervisor Mr. Apparao was found renewed from 31.08.2022 to 30.08.2027 by the Secretary, A.P. Electrical Licensing Board, Guntur. 3. The Permit No. 2-4200 of Supervisor Mr. A. Vijay Kumar was found renewed from 04.09.2019 to 11.09.2024 by the Secretary, A.P. Electrical Licensing Board, Guntur. 4. The Permit No. 1-1738 of Supervisor Mr. V. Vasram Naik was found renewed from 25.07.2019 to 24.07.2024 by the Secretary, A.P. Electrical Licensing Board, Guntur. 5. The Permit No. 1-1739 of Supervisor Mr. S.K.G. Sharief was found renewed from 25.07.2019 to 24.07.2024 by the Secretary, A.P. Electrical Licensing Board, Guntur.	_____

	6. The Permit No. 1-1641 of Supervisor Mr. S. Ravi Prakash was found renewed from 18.04.2022 to 17.04.2027 by the Secretary, A.P. Electrical Licensing Board, Guntur. 7. The Permit No. 3-5890 of Supervisor Mr. B. Praveen Kumar was found renewed from 23.04.2019 to 22.04.2024 by the Secretary, A.P. Electrical Licensing Board, Guntur. 8. The Permit No. 3-5889 of Supervisor Mr. S. Raveendra Reddy was found renewed from 23.04.2019 to 22.04.2024 by the Secretary, A.P. Electrical Licensing Board, Guntur. 9. The Permit No. 0-306403 of Wireman Mr. N. Nageswara Rao was found renewed from 20.11.2022 to 19.11.2027 by the Secretary, A.P. Electrical Licensing Board, Guntur.	
d.	However, licensed electrical-wiremen certificates and Licensed electrical-supervisor certificates are not found displayed near MCC & PCC panels room	**R20:** Display Licensed electrical-wiremen certificates and Licensed electrical-supervisor certificates near MCC & PCC panels room.
e.	Hazard area classification for electrical equipment has not been carried for ascertaining the types of electrical equipment, fixtures, lighting etc. for flammable & non- flammable areas in the site in order to avoid fire hazards.	**R21:** Carry out a detailed study for Hazard area classification for electrical equipment for ascertaining the types of electrical equipment, fixtures, lighting etc. for flammable & non-flammable areas in the site in order to avoid fire hazards. **R22:** Display "Hazard Zone" for each working area based on the Hazard Area Classification" lay out drawing and also display plant lay out drawing with hazardous area classification at appropriate places.
f.	Flame proof electrical fittings have been provided in all production blocks, warehouse (except at few places), PESO packing storage tanks.	_____
g.	All electrical lighting fixtures are flame proof in	_____

	warehouse. Weighing balance is flame proof in warehouse	
h.	11 KV electrical resistant hand gloves (Two pairs are being used for working at HT & Transformers and PCC panels.	_____
i.	Test certificate for 11 KVA hand gloves is not available. However, 11 KVA hand gloves is being replaced every year as a practice only by the electrical department.	**R23:** Obtain Test certificate for 11 KV/33 KV hand gloves from the vendor for ensuring that correct rating HT electrical resistant hand gloves are being used at site.
j.	CO2 & DCP type Fire extinguisher is found provided near Transformer Yard. Sand buckets (08 Numbers) are found provided near Transformer Yard & HT Yard.	_____
k.	Transformer Oil testing for di-electric strength & protection relay is being done once in a year by Government approved external agency. Transformer Oil testing was carried out on 08.08.2022 for Transformer Sl.No. ET-546 of 2000 KVA and Transformer Sl.No. ET-545 of 2000 KVA.	_____
l.	An electrical cable (may be live wire) with insulating tape to the end terminal is found provided. Probability of electrical shock if the insulating tape becomes loose due to weathering	----------
m.	"Danger Board" and "Unauthorized Entry Restricted" Board are not found displayed near Transformer areas.	R24: Display "Danger Board" and "Unauthorized Entry Restricted" Board near Transformer areas.
n.	The colour of the silica gel was found Blue for silica gel breather valve of the transformer. The condition of silica gel is healthy.	_____
o.	Winding temperature & oil temperature meter is provided for Transformer.	_____
p.	Earthing is provided to fencing & door for Transformer yard & HT yard	----------
q.	Permanent Identification of each panel in PCC & MCC panel rooms is being done by affixing stickers	_____

	on panels.	
r.	LOTO work permit issued for working in confined space & is part of CS Permit & Hot work Permit	_____
s.	LOTO Compliant MCC/PCC panels have been provided for ensuring Locking during any electrical maintenance works.	_____
t.	Preventive maintenance of PCC panels & MCC panels is being carried once in six months by electrical team of the company.	_____
u.	Smoke detectors are provided to MCC/PCC Panel Rooms for an early detection of fire. MCP and local hooter is provided for PCC panel room.	_____
w.	Rubber mats are provided for PCC & MCC panels in PCC/MCC Rooms.	_____
x.	Electrical shock treatment board in English Telugu & Hindi language is found displayed in PCC Panel Room & MCC panel rooms.	_____
y.	Emergency Lighting is provided in PCC & all MCC Panel rooms for attending to an emergency situation such as switching off power supply of endangered block from PCC or MCC Panels.	----------
z.	Statutory Electrical Inspection by electrical inspector is being done once in a year.	_____
a-i	LT cable markers are not provided for underground LT cables	R25: Provide &"LT Cable" markers for underground LT cables across the site in order to avoid any accident during excavation works.
a-ii	04 Numbers Lightening arrester are found provided covering the entire site (Locations: Preheater-1, Preheater-2, AQC Boiler & Cement Mill Silo-1).	_____
a-iii	"Single Line Diagram" is found prepared for PCC. However, it was not found displayed in PCC Panel Room	----------
a-iv	Arch Flash study was not found carried for PCC	------

	Panels & MCC Panels for identifying hazard & determining the safe distance while carrying out maintenance works in the last 12 months.	
a-v	Thermography study of PCC Panels & MCC Panels is being carried out for finding out the potential hot spots in PCC/MCC Panels as a part of predictive maintenance for electrical panels.	_____
a-vi.	Cleaning of lighting fixtures is being carried out once in six months by the electrical team as a practice & this practice is not part of any electrical SOP.	_____
a-vii	Electrical safety audit is not found conducted for the entire site. i.e., conducted in 09.03.2022	---------
a-viii	MCBs are provided to all DBs as trip system to act as electrical safety measures	_____
a-ix	MPCB & Contact Relays are provided as trip devices for all MCC Panels.	_____
a-x	ACBS are provided as trip devices for all PCC Panels.	_____
C-19.5	**Safety in Storage**	
I.	**Stores**	
I-i	Material Safety Data Sheet for all chemicals is available with respective departments such as Warehouse, , QC, WTP etc.	_____
I-ii	A written procedure SOP No. PCIL/STR/GEN/SOP 03 & 04, for "SOP for Receipt & storage of materials" is prepared and is being implemented by the Stores department	_____
I-iii	A written procedure SOP No. PCIL/STR/EOCP 05&06 for "SOP for Receipt, Unloading, storage and issue of raw materials" is prepared and is being implemented by the Store/Warehouse department for ensuring safety during receipt of hazardous materials in warehouse from vendors. As per this procedure, the condition of container is checked & labeling is also checked. Safety requirements such as type of PPE	**R26:** Revise the SOP No. PCIL/STR/EOCP 05&06 for "SOP for Receipt, Unloading, storage and issue of liquid raw materials" by incorporating the instructions to prepare Incompatibility chart for chemicals actually being stored in respective warehouse in order to ensure proper & safe storage against incompatible hazardous chemicals.

	requirement, spill procedure & first aid for exposure are also incorporated during handling of hazardous chemicals.	
I-iv	Incompatibility chart for storage of hazardous chemicals was found prepared & displayed in stores	----------
I-v	A written procedure SOP No. PCIL/STR/RM/SOP 02 for "SOP for Issue & dispensing of raw materials & packing materials" has been prepared & is being implemented by Warehouse department for ensuring safety during handling of hazardous chemicals in warehouse-I	_____
I-vi	Safety Training was found provided on 18.07.2022 by Mr. K.Durga Rao on "Hazardous Materials Handling" where 07 employees from production, were trained.	----------
II	**HSD Drum Storage for DG sets**	
III	**Fuels Storage in Open Area**	
III-i	A large inventory of alternate fuels are found stored in open without a shed. Fire extinguishers & fire suppression system is not provided for. High consequences that may be caused by a fire.	**R29:** Consider to carry out a study for Fire Load calculation and methods to reduce Fire Load for storage of combustible fuels at site.
C-19.6	**Hazard Assessment for New Equipment**	
a.	SOP for "SOP for Change Control" ensures the following: i.To assure that the technical basis for the proposed change is addressed prior to any change up-dating P & I diagram and other related documents. ii.To ensure assure that the impact of the change on safety and health is addressed prior to any change by preparing a compliance report	**R30:** Suggested to review "SOP for Change Control" by incorporating Occupational health & safety aspects as mentioned below: i. To ensure assure that the impact of the change on operational safety and process safety is addressed prior to any change by preparing a compliance report. ii. To ensure that the impact of the proposed change with respect to Emergency Preparedness such as

		emergency exits, any additional emergency equipment, changes in the existing, Safety SOPs & OSEP etc. iii. To ensure that modifications to safe operating procedures are addressed prior to any change since training is being imparted to affected persons & departments iv. The change control procedure should address statutory compliances, if any, due to proposed changes.
C-19.7	**Hazards from Radiation Sources**	
a.	The site is not using radioactive material in the plant.	_____
C-20	**CHEMICAL HAZARD**	
C-20.1	**Transportation of Hazardous Substances**	
a.	Blasting explosives and Hazardous chemicals are transported to the site.	_____
b.	Road tankers & tempos/trucks are being used for road transport of Blasting explosives and Hazardous chemicals to site	_____
c.	**Road**	
i.	Licensed transporters are engaged for transportation of Explosives in road tankers	_____
ii.	Approved transporters are engaged for transportation of Explosives & raw materials by designated vehicles.	_____
iii.	Dedicated place is designated near Warehouse-I for parking of road tankers inside the factory premises	_____
iv.	Loading / unloading procedure from road tankers into storage tanks is in place.	_____
v.	Finished Goods are transported by road using containers etc.	_____
vi.	A written procedure SOP No. PCIL/HSOP/34 for "SOP for Authorized transporters used to dispatch of Finished products" is in place in warehouse	_____

	department and is being implemented during dispatch of Finished products from the site.	
vii.	Hazardous wastes such as Spent carbon, Organic residue, etc. are transported in govt. approved hazardous waste trucks to authorized waste disposal site by using Manifest system having safety instructions during transportation	_____
viii.	Vehicle Safety inspection check list is not being used by the security at gate for checking the condition of road tankers transporting flammable, toxic & hazardous chemicals.	----------
d.	**Pipelines**	
i.	No liquid materials are transported by pipe lines from the site to outside by pipelines and from outside to the site by pipelines.	_____
ii.	Aboveground Pipe lines are provided for transportation of packing & hazardous liquid chemicals from storage tanks to production blocks	_____
iii.	Bonding/jumpers are found provided to flange joints on flammable packing transfer line form storage tanks to production blocks	_____
C-20.2	**Handling of Hazardous Substances**	
a.	A written procedure SOP No. PCIL/STR/EOCP 05&06 for "SOP for receipts, unloading, storage and issue of raw materials" is in place & is being implemented by warehouse	_____
b.	A written procedure SOP No. SOP/ST/009/D for "SOP for handling of gas Cylinders" is in place and is being implemented by warehouse & Safety department for ensuring safe handling of gas cylinders.	_____
C-20.3	**Material Safety Data Sheets (MSDS)**	
a.	Material safety data sheets are available with all production blocks, warehouse, QC for all chemicals being stored, handled used in the site.	_____
b.	A written procedure SOP No. PCIL/HSOP/94 for "SOP for displaying of safety information/MSDS for and NFPA ratings nearer to the raw materials" is prepared and is being implemented by the Safety	_____

	department	
C-20.4	**Spill Control Measures**	
a.	A written procedure SOP No. PCIL/HSOP/93 for "Spill Control" is in place for management of spills. Refer to specific recommendations in respective sections of the report as mentioned above.	_____
b.	Spill Kit is provided in all production blocks & warehouse areas. Refer to specific recommendations in respective sections of the report as mentioned above.	_____
c.	Spill control procedure for small spills & major spills are not found displayed in production blocks, warehouse etc.	----------
C-20.5	**Storage of Hazardous Substances**	
C-20.6	**Gas Cylinders**	
a.	Hydrogen gas cylinders are stored properly where being used.	_____
b.	A written procedure SOP No. PCIL/STR/EOCP 07 for "SOP for handling of gas cylinders" is in place for safe handling of gas cylinders and is being implemented by Maintenance/Safety/Production	_____
c.	A written procedure SOP No. PCIL/HSOP/ 66 for "SOP for handling, Storage & transportation of gas cylinders" is in place for safe handling of gas cylinders and is being implemented by safety department at site.	_____
C-20.7	**Labeling and Color Coding**	
a.	A written procedure SOP No. PCIL/HSOP/92 for "SOP for Colour coding for pipe lines and utility services" is in place and is being implemented by the engineering & maintenance department. However, board for colour coding for pipe lines and utility services is not found displayed in production blocks.	**R31**: Display "colour coding for pipe lines and utility services in production blocks
b.	Vessels, vessels, Receiving Tanks, Charge tanks and storage tanks are labeled for its content and capacity	_____
C-20.8	**Hazardous Waste Management**	
a.	A written procedure SOP No. PCIL/STR/EOCP 01 for	_____

	"SOP for collection, storage and disposal of hazardous waste" is in place and is being implemented by Environment department at site.	
b.	Identification done for various types of hazardous wastes has been carried out by the Environment department of the Company.	_____
C-21	**FIRE AND EXPLOSION HAZARD**	
C-21.1	**Organizational Set-up for Fire Fighting**	
a.	Total 43 numbers ERT members are available for the plant	_____
b.	The names of ERT member are not found displayed near main security gate.	----------
c.	50 Numbers Trained First aid members & 36 Numbers Trained Fire Fighters are available. In a shift, 05 to 10 trained first aider is available & 8 to 9 trained fire fighters are available which may not be adequate for controlling a major fire emergency at site.	_____
d.	The names of Trained First aid members & Trained Fire Fighters are found displayed near main security gate.	----------
e.	Intercoms, Landline phones & Mobiles are used for external communication. Electrical siren is provided in security office for communication of emergency. Battery Operated Megaphone & hand operated manual siren are not provided in security & near ECC.	----------
f.	Fire safety inspections are carried out for fire safety critical equipment by the Security & Safety department	_____
C-21.2	**Built in Safety in Civil Design and Construction**	
a.	Safe means of escape from separate directions are available for all production blocks, except at few places. Refer to respective section in this report for recommendations for Emergency Exits.	_____
b.	Emergency exits have been provided to all production blocks, warehouses, & other buildings	_____

	handling flammable materials, except at few places. Refer to respective section in this report for recommendations for Emergency Exits.	
c.	Fire hydrants are provided near buildings	_____
d.	Adequate separation distance between two buildings, are provided.	_____
e.	Certificate of stability (prescribed under Rule-112, of the AP Factories Rules-1950) for all buildings & blocks was obtained as per the Plans approved by the Director of Factories. As per the Certificate of stability report no. T.C.: Lr. No. D. Dis. B1/NRPT/10508/2017 dated 13.12.2017, all building structures are found "Structurally Sound". The report was submitted by competent person Registered by Director of Factories, AP vide approval No. Dis. LAE05-12021(68)/27/2022-B-SEC DOF (Valid from 07.05.2022 to 06.05.2023). The next renewal is due on 28.04.2023.	_____
C-21.3	**Built in Safety in Electric Circuits and Equipment**	
a.	Ground fault current interrupter system such as MCB is provided for all DBs and Panel for portable equipment	_____
b.	MCBs are provided to all DBs as trip system to act as electrical safety measures	_____
c.	MPCB & Contact Relays are provided as trip devices for all MCC Panels.	_____
d.	ACBS are provided as trip devices for all PCC Panels.	_____
e.	RCCB (Residual Current Circuit Breaker) is provided as safety protection to all lighting DBs	_____
f.	The electrical resistance for earthing circuits is being checked Quarterly once by electrical team.	_____
g.	The last testing of earth resistance in earth pits was carried out on 12.11.2022. The earth resistance values are found below 1.0 Ohms as against standard value of 5 Ohms.	_____
h.	142 numbers earth pits have been provided for the entire site. Each earth Pit has been given a unique identification	_____

	number. The value of earth resistance, testing date of earth pit & due date on each earth pit is found displayed on each earth pit.	
i.	Flame proof electrical equipment are provided for areas such as all Production Blocks, Packing Storage, WHRPP area, 132 KV Substation, CCR-1 & CCR-2, Line-2 Bag House area, Raw Mill-1 &2, Lc-2 area, Lc-4 & Lc-7, Line-1 & 2 ESp's.	_____
j.	Adequate bonding and grounding of electrical equipment and packing pipelines are provided	_____
k.	Earth Resistance monitoring for each earth pit is being done Quarterly by electrical team only records are available with the electrical team.	_____
C-21.4	**Explosive Substances**	
a.	Explosive substances are being used at Mines and having all necessary permits, procedures, using practices etc., Having dedicated explosive issuing licensed person in the plant for the full time.	_____
C-21.5	**Fire Safety in Handling Flammable and Explosive materials**	
a.	Having safety mechanism to handle the explosives materials	_____
b.	Procedure for usage explosives materials is in place	_____
c.	Dedicated vehicle and operators are allotted	_____
d.	Extreme care is being taken during usage of explosives. i.e., controlled blasting is in place after the drilling on the rocky areas	_____
e.	Emergency alerts are being practiced prior to usage	_____
f.	Emergency clear off is included in Mines/ Plant onsite emergency plan	_____
C-21.6	**Fire Detection and Alarm System**	
a.	Smoke detectors are provided in production blocks, warehouses, MCC Panel rooms, PCC panel room, DG set room, etc. in order to take immediate emergency actions before escalation of an emergency.	_____
b.	All fire prone areas of the plant are covered with MCP & Fire Alarm System for effective & immediate communication of any type of emergency in the plant	_____

c.	Identification labeling is not done for Local Hooters for Detectors & MCP.	R32: Consider to provide Identification labeling for Local Hooters for Detectors & MCP.
d.	Atmospheric monitoring is carried out by Fixed VOC stations which are installed at various places in the plant for monitoring of explosive mixture of gases or vapours.	_____
e.	Heat/Smoke detectors are provided where applicable	----------
C-21.7	**Passive and Active Fire Protection System**	
a.	A written procedure SOP No. PCIL/HSOP/91 for "SOP for Fire Hydrant System" is in place & is being implemented by safety department	_____
b.	Regular inspection / maintenance / testing of fire protection system carried out in order to maintain fire protection equipment in good working condition and records maintained as mentioned below: i.Fire Pumps- Daily inspection by safety ii.Hose Boxes-Monthly inspection on rotation basis by safety iii. Hydrant valves- Monthly inspection on rotation basis by safety and Engineering & maintenance iv. Hose Reels- Monthly inspection on rotation basis by safety v. Water spray system- Monthly inspection by safety vi. Water/ Fire Monitors- Monthly inspection by safety vii.Fire Alarm system- Monthly inspection by safety	_____
c.	Safety Inspection of above fire protection system is carried out by using a structured check list	_____
d.	Instructions for operations of fire pumps in English are found displayed in Fire Pump House	_____
e.	Fire Hydrant system comprising fire pumps, hydrant valves, fire hose boxes, Hose reels, Fire monitors & water storage tank is provided at site for use in emergency.	_____
f.	Emergency Lighting is provided where applicable	----------
C-21.8	**Fixed Fire Extinguishing System**	
a.	Dedicated water tank (underground) of 1,10,000 Ltrs	_____

	capacity & Terrace Tank 70,000Ltr capacity is available for firefighting purpose only.	
b.	The existing capacity of dedicated water reservoir is adequate to supply to hydrants for more than 2 hours.	_____
c.	Fire Pumps are provided as mentioned below: i. Jockey Pumps: 01 Number ii. Electrical Pump: 01 Number iii. Diesel Pumps: 01 Number	_____
d.	Discharge capacity of Pumps: In fire pump house i. Jockey Pump: 180 LPM ii. Electrical Pump: 2850 LPM iii. Diesel Pump: 2850 LPM Refer **Annexure-4 for Summary of Fire Hydrant System**	_____
e.	Power supply to all fire pumps is from a dedicated feeder	_____
g.	Fire hydrants layout drawing is found displayed near security gate & near Fire Pump Houses	----------
h.	80 Numbers Hose reels drums with 15-meter length are provided to all production blocks, RM Stores-II, Packing Plant, WHRPP, Coal Yard area etc.	_____
i.	The hydrants lines are kept pressurized on auto mode by jockey pump.	_____
j.	Numbers Ceiling Mounted Automatic ABC Type (10.0 Kgs) fire extinguishers have been provided.	_____
k.	Auto Operated Fire sprinkler system is provided for overhead tanks for packing located at terrace Tank at top of Packing Plant.	_____
l.	Manually operated Water sprinkler system is provided for Warehouse-I, Production Blocks, & Furnace area (Total Sprinklers). One isolation valve is provided on water sprinkler line to operate the valve by a person in case of a fire emergency.	----------
m.	Suitable type auto operated fire suppression system is not provided for PCC & MCC panel rooms.	----------
n.	Details of all fire pumps with start & stop pressure are found displayed in Fire Pump House.	_____

o.	Water level monitoring of fire water storage tank is being done on daily basis.	_____
C-21.9	**Portable Fire Extinguishing System**	
a.	139 Numbers Portable Fire extinguisher of varying capacities & types are provided at strategic locations such as near Electrical Installations like MCC/PCC, Panels, Production blocks, QC/QA, packing storage tanks yard areas, Office Rooms etc. as per **Annexure-6 for Summary of Fire Extinguishers.**	_____
b.	Fire extinguishers are located at conspicuous position and easily accessible. The placement is identifiable by zebra markings.	_____
c.	Fire extinguishers periodically inspected once in a month by the safety team and records are maintained by the safety department.	_____
d.	Refilling of all fire extinguisher is being done once in year by an external agency	_____
e.	A written procedure SOP No. PCIL/HSOP/90 for "SOP for Fire Extinguishers" is in place & is being implemented by safety department.	_____
C-21.10	**Fire Fighting Equipment and Facilities**	
a.	The Fire Fighting system and equipment are approved & tested and being maintained as per the relevant standards.	_____
b.	02 Numbers SCBA sets are provided at site for emergency usages. One set of SCBA set is kept in Emergency Control Centre.	_____
C-21.11	**Fire Drill**	
a.	Mock drills are being conducted once in every month as per plan.	_____
b.	Announced Mock Drills are being conducted.	_____
c.	The last mock drill was conducted on 24th January, 2022"	_____
d.	A detailed Mock Drill Report was found prepared and observations & short comings were found noted down by the observers in the Mock Drill Report. Action required with responsibility and target date is mentioned in the Mock Drill Report	_____

	In-charge- Safety is ensuring compliances by taking the corrective action. Status of actions on observations made is also incorporated in the Mock Drill Report itself. This mock drill report is worth mentioning as strength for OSEP management system	
e.	A written procedure SOP No. PCIL-PR-17 for "Mock Drill & Fire Drill" is in place & is being implemented by safety department	_____
C-21.12	**Fire Fighting Training**	
a.	Fire Fighting Training was found organized by the safety department as mentioned below: For example: i. **Topic: Fire Fighting** **Date: 18.04.2022** **Duration: One hours** Participants-30 (Employees & contract workers) **ii.Topic: Fire Safety awareness, Fire Fighting drill & Emeregncy preparedness** **Date: 27.12.2021** **Duration: One Hour** Participants-27 (Employees & contract workers)	_____
C-21.13	**Static Electricity and Lightning**	
a.	Double static earthing is provided to each equipment by connecting to earth strip.	_____
e.	04 numbers Lightening arresters are provided in the plant areas. **1.Preheater-1** **2. Preheater-2** **3.AQC Boiler** **4. Cement Mill Silo-1**	_____
f.	The process (s) and equipment generating and accumulating static charge have been identified. Such equipment has been properly earthed & bonded.	_____
g.	Earth dip rod or Crocodile earth clamps are being used to containers (HDPE or MS) during unloading from storage tanks or during transferring from drums to receivers or vessels	_____

h.	Various Anti-Static Devices/ system/methods for static discharge have been provided by the Management as mentioned below: • Earth Dip Rod in all Blocks • Static Discharge Touch Pads in all Production blocks • Crocodile earth clamps with flexible earth wires • Flange to flange Bonding/ jumpers • Conductive Hoses • Double static earthing to all equipment handling flammable packings	_____
i.	Adequate bonding and grounding of electrical equipment & flammable packing pipelines are found provided	_____
j.	A written procedure SOP No. PCIL/ELE/SOP 02 for "SOP for providing earthing to pipelines/flow lines" is in place & is being implemented by safety department	_____
C-21.14	**Pressure Relief System**	
a.	Listing of all 'pressure plants' [as defined under Factories Act] has been done. For example: Air receivers, Boiler, Air compressors, Hydrogenators etc.	_____
b.	RD & SRV are provided from an independent nozzle on all vessels in Production Blocks.	_____
c.	SRV of 3.0 Kg/cm2 rating are provided to all applicable equipment in Production blocks.	_____
d.	Emergency vent sizing calculation for vessels of different capacities, for Vessels processing exothermic reaction etc. was found available.	----------
e.	Reactor jackets have been provided with SRV.	----------
f.	SRV of suitable pressure rating have been provided to all identified pressure vessels at site. For Example, only: For example: i. All vessels in Production Blocks ii. Boiler iii. Air receivers	_____

g.	Pressure gauges are provided to all Pressure vessels as mentioned above.	_____
h.	Frequency of testing of all SRVs is once in a year by an external agency.	_____
i.	UT testing (Thickness gauge testing) of pressure vessels is being done once in a year by a competent person as mentioned below. Hydrostatic Pressure testing was also found carried by a competent person as mentioned below. The Report of examination of pressure vessel is being maintained in FORM NO. 8.	_____
C-22	**INDUSTRIAL HYGIENE / OCCUPATIONAL HEALTH**	
C-22.1	**Ventilation, Illumination, Noise, Vibration, Heat stress and Non-ionizing Radiations**	
C22.1.1	**Ventilation**	
a.	The Cement loading areas have been provided with sufficient ventilation, once through type based on the GMP requirements	_____
b.	Natural ventilation is provided in all over the plant, Utility blocks, office rooms & admin Block and is found to be adequate. Room air conditioners are also provided to QC Block, Office areas & remaining areas where applicable.	_____
c.	Scrubbers are provided in production blocks for vessels wherever needed.	_____
d.	Periodic / preventive maintenance of ventilation system carried out by the maintenance department and record is maintained	_____
C22.1.2	**Illumination**	
a.	Illumination monitoring of work places is being done for day time & night time once in a quarterly by maintenance team and the values are within limits. The last date of illumination monitoring is 10.11.2022. The Illumination level is found to be adequate for all areas.	_____
b.	Employees are subjected to Vision Test & Colour blindness test on yearly basis during annual medical examination.	_____
C22.1.3	**Noise**	

a.	The High Noise areas identified are Compressor area, Boiler, DG set & ETP area etc.	_____
b.	Acoustic Enclosures found provided to DG sets. Ear Plug & Ear Muff are found provided to Employees.	_____
c.	Caution Signages for High Noise Areas have been posted.	----------
d.	Periodical Audiometric testing is being conducted for all employees who are exposed to high Noise level during yearly medical examination.	_____
e.	Ambient Noise Levels Monitoring is being conducted once in a month by an external agency.	_____
g.	Ambient Noise Levels Monitoring was carried out on 23.01.2023 at the following locations: Near Security Gate, Near ETP, Near Admin Office & Near Molasses tank The Noise levels were found below the CPCB Standards.	_____
C22.1.4	**Vibration**	
C22.1.5	**Heat Stress / Cold stress (Extremes of Temperature)**	
a.	Boiler area is identified for increasing the heat load in work place	_____
b.	Natural ventilation is provided. Fans are provided.	_____
c.	Drinking water facility is made in Boiler area	_____
d.	Thermal insulations are provided to DG set exhaust pipes, Boiler, Vapour columns at high temperatures in production Blocks etc.	_____
C22.1.6	**Non-ionizing Radiations**	
a.	Non-ionizing Radiations is not available at site	_____
C-22.2	**Workplace Monitoring for Hazardous Chemicals**	
a.	Ambient Air quality monitoring is being done as per the Pollution control norms. The last date of Ambient Air Quality monitoring was 21.01.2023.	_____
b.	Ambient Air Quality monitoring was carried out at the following locations: Near main gate, Near Preheater, Near Admin Office. The Ambient Air Quality monitoring was carried out for parameters such as Particulate matter -PM10,	_____

	Particulate matter -PM2.5, Sulphur Dioxide, Oxides of Nitrogen for all the above locations. All parameters were found below NAAQ /NABL Standard.	
C-22.3	**First Aid Facilities and Occupational Health Centre (OHC)**	
a.	15 numbers First aid boxes provided -covering all Packing Plant, Cement Mill-2 Office, Electrical substation, Instrumentation, Security main gate, Engineering services department, Workshop, Mines, production, QA & QC etc.	_____
b.	First Aid procedures for various types of injuries have been outlined in the OSEP.	_____
c.	50 Numbers qualified & trained first aiders available 05-10 members trained First Aid member are available in each shift.	_____
d.	Training on first aid was found conducted on 10.01.2022 for eight hours duration. 50 members received training on first aid.	_____
C-22.4	**Periodical Examination**	
a.	The periodical medical examination of employees & contract workmen is being carried out once in six months.	_____
b.	A written Procedure SOP No. PCIL/HSOP/94 for "SOP for Medical Checkup" is in place and is being implemented by HR department.	_____
c.	The last medical examination for employees was done in the month of March 25th to 28th March 2022.	_____
d.	The annual medical examination included the following tests: i. CBP ii. ESR, iii.CUE iv. Serum Creatinine, v.FBS vi. Lipid Profile vii. Lung Function Test, viii. Audiometry Test ix. Vision Screening eye test, x. Chest X-Ray & xi. ECG	_____
e.	Prescriptions were found incorporated in the Medical Examination report. For example: High BP.	R33: Suggested to incorporate fitness status post medication for those

	However, fitness status is not being incorporated after completion of medicine course.	employees whose medical examination reports have prescribed medications and make separate annual medical status report for each employee.
f.	Fork lift operators & Ambulance drivers are being examined for eye test (colour blindness, vision related problems etc.) once in six months.	_____
C-22.5	**Personal Protective Equipment and Emergency Equipment**	
a.	The requirement of PPE is based on hazardous activities, operations & hazardous chemicals nature.	_____
b.	A written procedure SOP No. PCIL/HSOP/89 for "SOP for Personal Protective Equipment" is in place & is being implemented by the safety department	_____
c.	All types of PPE & Description of PPE with respect to purpose of usages & location of usages have been outlined in an elaborate manner in the SOP.	_____
d.	Department heads are responsible for ensuring usages of PPEs by employees, contract workers and visitors within their area of responsibility	_____
e.	Block In-charges/area in-charges are responsible for ensuring the cleaning & maintaining PPE in hygiene condition. Inspections of PPE is done by the concerned shift in-charge of block & other areas before usages.	_____
f.	Availability of PPE is ensured by the safety department and adequate stock of PPE shall be maintained by the Head-Stores as per the PPE SOP.	_____
g.	Full body harness be used during work at height. Refer the SOP for the recommendations with respect to PPE requirements in the respective section of this activity	_____
h.	Block In-Charges are responsible for inspection & availability of PPEs for usages. Replacement /issue of the PPE in the plant are being done as per SOP only.	_____
i.	Emergency PPEs are also provided at site as per **Annexure-7 for List of Emergency PPE**	_____
j.	The contractor workers are also provided the	_____

	required PPE such as Safety Shoes, Safety Goggles, Nose Masks, etc. It is the responsibility of contractor for ensuring PPE to their workers.	
k.	PPE conforming to BIS/IS standard being used at site.	_____
l.	13 Numbers eye wash fountain & body showers available at site for almost all areas of the plants as per **mentioned below:** All Production Blocks, Packing Plant, Kiln & all Maintenance office rooms.	_____
m.	A written procedure SOP No. PCIL/HSOP/88 for "SOP for Emergency Eye Wash & Shower "is in place & is being implemented by the safety department	_____
n.	A regular training is being given to all the workers have in proper usage of Respiratory PPE.	_____
o.	Training on PPE was found provided on Every Gate Meeting to all the employees.	_____
C-22.6	**Occupational Diseases**	
a.	Pre-employment medical check-up data is available with HR department.	_____
b.	Occupational disease is not identified for any workmen & staff as per the records being maintained by the HR department	_____
C-23	**ACCIDENT / INCIDENT REPORTING, INVESTIGATION AND ANALYSIS**	
C-23.1	**Accident Reporting and Database Management**	
a.	A written procedure SOP No. PCIL-PR-12 for "SOP for Incident/ Near Miss Reporting and Investigation" is in place & is being implemented by the safety department.	_____
b.	The accident data for the last five years for reportable and non-reportable accidents are available with the safety department.	_____
C-23.2	**Accident Investigation**	
a.	All types of incidents, Accidents, first aid cases, Near-miss & Reportable accident are investigated.	_____
b.	Accident Investigation is governed by procedure SOP No. PCIL-PR-12-F02 for "SOP for Incident/ Near Miss Reporting and Investigation".	_____

	The format "Investigation Report Format" No. PCIL/SAF/R-02 is being used to carry out a detailed investigation.	
c.	Reportable accidents are immediately reported to the top management by the Plant Head	_____
d.	Investigation of accident/ incident/ near-miss is being carried out by a functional team constituted by the location head. The cross functional team carry out a detailed investigation of reportable injury to find out the root cause and to advise remedial measures to avoid its recurrence and to submit the investigation report within 06 working days to the Unit Head.	**R34:** Near miss reporting looks good but number of reports per section per month are very less while compare to the manpower. Increase the number of reports. At least 1 per head across all the designations/month
e.	All Incidents and Near Miss are being investigated by using Format No. PCIL/SAF/R-04 by utilizing 5-WHY or Fishbone technique.	_____
f.	Based on the severity of accident, Safety-In-Charge may give instruction to carry out a thorough investigation of accident by any institute/ third party.	_____
g.	Findings from accident investigation reports are communicated to workers in Safety committee meeting	_____
C-23.3	**Analysis of Accidents**	
a.	Root cause Analysis of accidents is being done by a functional team constituted by the Unit head	_____
C-23.4	**Implementation of Recommendations**	
a.	Recommendations are tracked till completion and closure by the plant safety head and plant safety head will also communicate the status of compliance to the Unit head.	_____
b.	On receipt of the Investigation report, the Safety In-Charge shall make the action plan (CAPA) with target date and person responsible for compliance of recommendations in consultation with the respective HOD.	_____
C-23.5	**Reporting and Investigation of Near-miss Incidents**	
a.	Reporting and Investigation of Near-miss Incidents is governed by procedure SOP No. PCIL-PR-12-F01 for	_____

	"SOP for Incident/ Near Miss Reporting and Investigation".	
b.	The Reporting of incident/ near-miss is being done in the Occurrence document "Incident First Information Format" namely- PCIL/SAF/R-01& Near-miss Report format PCIL/SAF/R-03.	_____
c.	Reporting of accident/incident/near-miss is being done immediately for the events in general shift and within 12 hours for the events in non-general shift & next working day for the events on Sundays & Holidays from the time of occurrence in the Occurrence Format by the concerned department HOD /In-charges to the Safety in-charge as per the procedure.	_____
C-24	**EMERGENCY PREPAREDNESS**	
C-24.1	**Site Specific Details**	
a.	Site layout with site specific details and location of emergency equipment is available in "On Site Emergency Plan" and is found displayed near security main gate.	_____
b.	A written procedure for "On Site Emergency Action Plan" dated 2020 is in place and being implemented by the safety department.	_____
C-24.2	**Duties and Responsibilities of Key Personnel**	
a.	Flow of responsibilities have been described in procedure "On Site Emergency Action Plan" dated 01.04.2020.	----------
b.	A detailed written procedure "Onsite Emergency Plan (OSEP)" dated 01.04.2020 is in place.	_____
c.	Duties and responsibilities have been assigned to the designated officials during emergency, both during and outside normal working hours clearly identified in OSEP. Training has been given to key personnel & all ERT members.	_____
C-24.3	**Identification of Emergencies and Accident Scenario**	
a.	The possible accident scenarios leading to emergency have been identified in OSEP. Training is being given to employees on OSEP.	_____

C-24.4	**Declaration and Termination of Emergency**	
a.	The list of Key personnel who are to be communicated about declaration and termination of emergency available in security.	_____
b.	The siren codes for Emergency declaration & termination of an emergency are not found displayed at strategic locations as per OSEP.	**R35:** Display siren codes for Emergency declaration & termination of an emergency at strategic locations as per OSEP.
C-24.5	**Resources-evacuation / Transport**	
a.	The following resources-equipment, personnel and procedures- required to handle emergency are available	_____
1)	Electrical siren located in Coal Mill-1 is provided for communication of an emergency & evacuation.	_____
2)	Total 03 Numbers Wind socks have been installed at the following locations of the site for monitoring wind direction during toxic emission emergency & also for evacuation in the opposite direction of wind: Coal Mill-2: One number CCR-1: One number Cement Mill-2 Silo: One number	_____
3)	Emergency exits have been provided for all production blocks (not provided at few areas), warehouse and other buildings). Refer to the recommendations of Emergency requirements in the respective section of this report.	_____
4)	Direction for emergency exit & escape route has been marked	_____
5)	Security Officer & security guards have been deputed & trained to control traffic and to maintain law & order	_____
6)	Evacuation /Escape Route direction boards are not found displayed in all production blocks & warehouse etc.	----------
C-24.6	**Communication Facilities**	
a.	Intercoms Instrument are provided in all production block for communication of an emergency.	_____
C-24.7	**Medical Care**	
a.	Assistance from the nearby hospital located at about	_____

	1.0 KM from the site shall be taken for medical care.	
b.	Anti-snake venom is provided in OHC	_____
C-24.8	**Updating of Emergency Plan**	
a.	OSEP shall be updated upon occurrence of a major emergency or major accident or based on the feedback during Mock drill or yearly once.	_____
C-24.9	**Periodic Drills / Exercises**	
a.	Mock drill & Fire drills are being conducted as per the Procedure of "On Site Emergency Plan (OSEP)"	_____
C-24.10	**Training of Plant Personnel**	
a.	ERT members (43 numbers) have been trained in handling emergency equipment	_____
b.	Training to ERT members & employees were found provided as mentioned below: **i. Topic: Fire Safety Awareness, Fire Fighting Drill & Emergency Preparedness** **Date: 05.04.2022 to 27.04 2022.** **Duration: 01 Hrs/ day** Participants-All PCIL (Employees)	_____
C-24.11	**Public Awareness Programs**	
a.	Help of civic administration shall be taken in case of an "Offsite emergency" as mentioned in OSEP	_____
C-24.12	**Mutual-aid Program**	
a.	List of external agencies with contact numbers for taking help in case of an emergency has been outlined in OSEP	_____
b.	List of external agencies with contact numbers is displayed in security.	_____
C-24.13	**Emergency Control Centre**	
a.	ECC is provided in Security Office Room near Main Gate.	_____
b.	The infrastructures provided in the Emergency Control Center are: i. Copy of OSEP ii. MSDS of chemicals and Products iii. List of Important telephone Numbers iv. List of both ERT, Fire squad and trained first aiders. v. Battery operated megaphone-One number	_____

	vi. Barricading tape vii. Traffic cones	
C-25	**SAFETY INSPECTION**	
C-25.1	**Inspection Program**	
a.	Structured check lists for the safety inspection of various safety equipment have been prepared and the inspection is being carried out as ongoing process.	_____
b.	A written procedure SOP No. PCIL-PR-21-F01 for "safety Audit" is in place & is being implemented by safety department.	_____
C-25.2	**Safety Related Deficiency (SRD) Report**	
a.	Safety Related Deficiency (SRD) Report is governed by the written procedure SOP No. PCIL-PR-21-F05 for "safety Audit"	_____
b.	Safety Related Deficiency (SRD) Report-Any defect observed is corrected immediately and recorded in the Inspection check list & safety audit report	_____
c.	Follow up with engineering department is being done by the team for rectification	_____
C-25.3	**Safety Inspection Records**	
a.	Records of all safety inspections are being maintained by the safety department.	_____
C-25.4	**Methodology and Inspection Team**	
a.	The safety inspection is carried out at a pre-determined frequency by the safety department & the respective departmental In -charge.	_____
b.	An inspection report is prepared for all the safety inspections as per the SOP.	_____
C-25.5	**Compliance of Recommendations**	
a.	The recommendations for compliance are submitted to Maintenance Head, Electrical in-Charge, respective Department Head by the Site Safety Head.	_____
b.	Tracking for compliance of recommendations of safety inspections is being done by the Site safety Head till closure of recommendation.	_____
c.	A copy of the inspection report is also sent to the Plant Head.	_____

7.0. OTHER RECOMMENDATIONS

7.1 Signages to be considered at different areas of the plant with “HOT SURFACE”- Under Progress.
7.2 Validity stamping for 33KV hand gloves to renewed every year.
7.3 Emergency contact numbers to be displayed at all prominent places preferably with photo-
7.4 33KV license holder’s license to be displayed in main Electrical station.
7.5 Annual trailing calendar’s achievement is improper -to be effective along with targeted dept and employees without fail.
7.6 Near miss case recording is poor. Advised to record on a monthly basis with at least 2-3/ employee with a sense of responsibility and root cause identification to be planned adequately.
7.7 Ratification may be advised for safety officer as per Sec 40 B Factories Act
7.8 As per emergency norms, 10% of total lights to be connected with batter/UPS during electrical power cut-off.

8.0 CONCLUSIONS

8.1 The Management has taken adequate “In built safety measures”
8.2 Monitoring of already existing “In built safety measures” shall be done from time to time by Safety & Engineering team.
8.3 A robust Safety inspection & safety audit system with respect to Occupational Health & Safety System has been established by the Management for ensuring safety of plant & personnel.
8.4 Suitable Fire protection measures have been taken by the Management and as & when needed, expansion of the existing fire hydrant system is being undertaken under CAPEX.
8.5 The house keeping standard is good for the entire site
8.6 The various elements of Process Safety Management System shall be reviewed and implemented as & when needed.
8.7 The existing Safety measures, Practices & procedures shall be periodically reviewed with reference to best available technology and safety practices.
8.8 All the observations mentioned in Section-6 will be complied at the earliest possible time

9.0 DISCLAIMER

Sri.Balakrishnam Raju C- founder of J2 Industrial Solutions & the Safety & Fire Safety Consultant Dr.Shiva Prasad, Kadapa, based upon professional experience and training, will offer recommendations to abate unsafe conditions & unsafe acts and violations identified during the walk-through safety audit, but does not guarantee that all (and every), safety issues will be identified.

The Safety Audit of the Plant Premises and Operations are carried out based on generally accepted Guidelines, Codes, Standards and /or practices in the field of Occupation Health & Safety Management.

The recommendations are based upon the field observations along with respective Block In-Charges and information furnished/ provided by the Organization with respect to the existing safety measures, Practices & Safe Operating Procedures.

M/s PARASAKTI CEMENT INDUSTRIES LIMITED is located at Jettipalem Village, Rentachintala Mandal, Palnadu Dist.-522421, will hold the safety auditors, harmless for violations identified but not cured, violations not identified, or any claim, dispute or other form of controversy arising from or out of an actual or purported safety violation.

M/s PARASAKTI CEMENT INDUSTRIES LIMITED is located at Jettipalem Village, Rentachintala Mandal, Palnadu Dist.-522421, is required complying with Factories' Acts & Rules, and all applicable Standards under State and Central Codes. Consider other consultancy services that may be available from Director of Factories, DGFASLI, your insurance carrier, and other safety consultants.

08th February, 2023

Balakrishnam Raju -- Lead Safety Auditor & AP Govt Empaneled Safety Auditor, Chartered Engineer, Safety Trainer, Competent Person

10.0 ANNEXURES

10.1 Annexure-1: Preventive Maintenance Schedule

Annexure-1: Preventive Maintenance Schedule			
Sr. No.	**Description Of Equipment & Area**	**Frequency**	**Performed By**
1.0	Vessels	6 Months	ESD
2.0	Sparkler Filters	6 Months	ESD
3.0	Air Compressors	6 Months	ESD
4.0	Dryers	6 Months	ESD
5.0	Fire Pumps	6 Months	ESD
6.0	Centrifuges	6 Months	ESD
7.0	Nitrogen Plant	6 Months	ESD
8.0	Kiln plant	6 Months	ESD
9.0	**Chilling plant**	6 Months	ESD
10.0	Boiler	6 Months	ESD
11.0	DG sets	6 Months	ESD
12.0	Transformer	12 Months	ESD
13.0	VTD & TD	6 Months	ESD
14.0	Blender	6 Months	ESD
15.0	Fire Hydrant system	12 Months	Safety
16.0	Water Sprinkler System	12 Months	Safety
17.0	Fire Alarm System	12 Months	Safety
18.0	PAS System	12 Months	Safety

10.2 Annexure-2: Statutory Testing Schedule

Annexure-2: Statutory Testing Schedule			
Sr. No.	**Description Of Equipment & Area**	**Frequency**	**By Whom**
1.0	Earth Pit Resistance monitoring	12 Months	ESD
2.0	Hydro test for Vessels/Air Receiver tank	24 Months	ESD
3.0	Ultrasonic Thickness Testing for Air Receiver	06 Months	ESD
4.0	Ultrasonic Thickness Testing for N2 Receiver	06 Months	ESD
5.0	Transformer Oil Testing	12 Months	ESD
6.0	Material or Goods Lift	06 Months	ESD
7.0	Safety Belt	06 Months	ESD
8.0	Cage Lift	06 Months	ESD

9.0	Dock leveler		

10.3 Annexure-3: Calibration Schedule

Annexure-3: Calibration Schedule			
Sr. No.	**Description Of Equipment & Area**	**Frequency**	**By Whom**
1.0	Sensors for Hydrogen gas	6 Months	ESD
2.0	Pressure Transmitter	6 Months	ESD
3.0	Flow Transmitter	6 Months	ESD
4.0	Flow Meter	6 Months	ESD
5.0	Level Transmitter	6 Months	ESD
6.0	Magnetic Level Indicator	6 Months	ESD
7.0	Glass Tube type Level Indicator	6 Months	ESD
8.0	Digital Temperature Indicator	6 Months	ESD
9.0	Temperature Dial Gauge	12 Months	ESD
10.0	Pressure dial Gauge	6 & 12 Months	ESD
11.0	Vacuum dial gauge	6 & 12 Months	ESD
12.0	Temperature controller	6 Months	ESD
13.0	Earth Tester	12 Months	ESD
14.0	Digital Multi Meter	12 Months	ESD
15.0	LEL meter	6 Months	ESD
16.0	Oxygen Meter	6 Months	ESD
17.0	Noise Meter	6 Months	ESD
18.0	Lux Meter	6 Months	ESD
19.0	RTD Or Temp transmitter	6 Months	ESD
20.0	VOC Meter	6 Months	ESD
21.0	Multi-gas meter	6 Months	ESD
22.0	LEL or Hydrocarbon leak sensor	6 Months	ESD

10.4 Annexure-4: Summary of Fire Hydrant System

Annexure-4: Summary of Fire Hydrant System				
S. No	**Description**	**Location**	**Numbers**	**Remarks**
01	Jockey pump 180 LPM	Fire Hydrant Pump House Room	01	Pressure Set point: Start: 6 kg/cm2 Stops:8.5kg/cm2
02	Electrical driven fire Pump 2850 LPM	Fire Hydrant Pump House Room	01	Pressure Set point: Start: 5 kg/cm2

03	Diesel Pump 2850 LPM	Fire Hydrant Pump House Room	01	Pressure Set point: Start:3 kg/cm2
04	No. of Single Hydrant Points:		0	
05	No. of Double Hydrant Points:		45	
06	No. of Single door Fire Hose boxes:		0	
07	No. of Double door Fire Hose boxes:		40	
08	Total No. of Hose pipes in Single door Fire Hose boxes		0	
09	Total No. of Hose pipes in Double door Fire Hose boxes		80	
10	Total Nos. of Branch nozzles		30	
11	No. of water monitor		02	
12	No. of Fire Monitor		0	
13	Qty. of Fire compound		0	
14	No. of Fire making trolley		0	
15	Hose Reels-15 meter		80	
16	Hose Reels-30 meters		0	
17	Water storage tank:	Underground-1,10000 Ltr and Terrace Tank-70,000 Ltr	01	
18	Source of water supply	Bore Wells, Krishna water & Mines Sump	01	

10.5 Annexure-5: Summary of Fixed Fire Suppression System

Annexure-5: Summary of Fixed Fire Suppression System				
Sr. No.	**Equipment Description**	**Locations**	**Qty./Nos.**	**Capacity**
	Aerosol Fire Extinguishers for Centrifuges			
1.	Water cum Fire Monitor		02	2850 LTPM
2.	Auto Modular ABC Type Fire Extinguishers	Ground floor	18	2-3 Meters Radius
3.	Auto Modular DCP Type Fire Extinguishers		0	

10.6 Annexure-6: Summery of Fire Extinguishers

Annexure-6: Summery of Fire Extinguishers		
Fire Extinguisher	**Capacity**	**No of Extinguishers**
ABC	4.5 KG	05
	6.0 KG	07
DCP	5.0 KG	35
	50 KGS	01
Mechanical Fire	9 Liters	15
	45 Liters	06
CO_2	3.0 Kgs	11
	9.0Kgs	15
	4.5 Kgs	40
	22.5 Kgs	04
TOTAL		**139**

10.7 Annexure-7: List of Emergency PPE & Equipment

Annexure-7: List of Emergency PPE & Equipment			
S. No	**Name of PPE**	**Qty./ Numbers**	**Location**
1	Organic vapour respirators	05	ECC
2	Acid vapour respirators	05	ECC
3	PVC suits	05	ECC
4	Rubber hand gloves	10	ECC
5	Nitrile hand gloves,	10	ECC
6	Electrical hand gloves-33 KV	01	LC-1 Substation
7	Neoprene hand gloves	05	ECC
8	Hear resistance hand gloves	10	ECC
9	Safety Helmets	10	ECC
10	Chemical splash goggles	10	ECC
11	Face shields	10	ECC
12	Full Body PVC air suit	05	ECC
13	Fire Retardant suit with air line	01	ECC
14	Air Breathing Mask (ABM)	04	ECC
15	Fire Proximity Suits	04	ECC
16	Fire Blankets	05	ECC
17	SCBA	02	ECC
18	Gum boots	03	ECC
19.	Spare Breathing Air Cylinders	02	OHC

20.	Self-Contained Breathing Apparatus (SCBA) Sets	02	ECC
21.	Explosion poof tools		