

SAFETY GUIDE LINES/RULES FOR CONTRACTORS & OTHER WORKERS

In case of various maintenance & modification activities numbers of hazards are involved. The following are some of the hazards that may be encountered:

Gas, Fumes	Corrosive hot & other liquid
Sludge	Gas or liquid under pressure
Trace Heating	Toxic material
Falling objects	Fire & Explosion
Noise	Steam/Condensate
Dust	Moving machinery
Hot metal	Under-ground services
Excavation	Hazards Electric shock/burns
Traffic Road/Rail	Lifting tackles/tools failure
Work at height	Work on fragile roof/ceiling
	Electricity mains/static electricity
	Over head hazards, moving cranes etc
	Radioactive substances/sources
	Confined space hazards entry
	Hand tools/portable tools hazards

As mentioned above all persons involved in job will have to look out for Hazard & to take necessary actions so that accident can be prevented.

The following are some general guidelines & check points that should be followed:

1. Unauthorized entry into any battery limit of plant is strictly prohibited.
2. It is forbidden to take children & under age workers in side the factory.
3. Smoking & carrying matchbox, cigarettes, lighter, bides etc. are prohibited.
4. Photography & carrying cameras is strictly prohibited in all areas.
5. Reckless driving or other non-observance of traffic safety rules shall result into withdrawal of permission to carry vehicles in side factory.
6. The maximum speed limit is 20 Kames. /hour. However, much slower speed is necessary in congested areas.
7. When you are given permission to enter in GNFC complex you are to go only to the location, which you have been authorized. Don't visit or loiter in any other plants/premises. When existing the plant, you have to leave through the gate you entered, unless otherwise directed, in case of emergency.
8. All necessary personal protective equipment (PPEs.), Safety equipment should be made available to use for persons employed by the contractors on the site & shall be maintained in condition suitable for immediate use. Protective equipment for head protection, body protection, eye protection, hand protection, hearing protection & respiratory protection shall be made available by the contractor.
9. Use of hoisting machines & tackle including their attachments, anchorage & supports shall conform to the following standards or conditions: -
 - a) These shall be good of mechanical construction, sound materials & adequate strength & free from patent defect & shall be kept in good condition & in good working order.
 - b) Every rope used in hoisting or lowering materials or as a means of suspension shall be of durable quality & adequate strength & free from patent defects.
 - c) Every crane driver or hoisting appliance operator shall be properly qualified and no person under the age of 21 years should be in charge of any hoisting machine including any scaffolding, watch or give signals to the operator.
 - d) In case of every hoisting machine & of every chain ring hook, shackle swivel & pulley block used in hoisting or lowering or as means of suspension, the safe working load shall be ascertained by adequate means. Every hoisting machine & all gear referred to above shall be plainly marked with the safe working load & the conditions under which it is applicable

- shall be clearly indicated. No part of any machine or any gear referred to above in this paragraph shall be loaded beyond the safe working load except for the purpose of testing.
- E)** In case departmental machine, the safe working load shall be notified by the Engineer-in-charge. As regards Contractor's machines, the contractor shall notify the safe working load of the machine to the Engineer-in-charge, whenever he brings any machinery to site of work & get verified by the Engineer-In-charge concerned.
- 10.** Motors, gearing, transmission, electrical wiring & other dangerous parts of hoisting appliances shall be provided with sufficient safe guard hoisting appliance should be provided with such means as will reduce to the minimum the risk of accidental descent of the load. Adequate precautions shall be taken to reduce to the minimum the risk of any part of a suspended load becoming accidentally displaced. When workers are employed on electrical installations, which are already energized, insulating mats, wearing apparel. Such as gloves & boots as may be necessary shall be provided. The workers shall not wear any rings, watches & carry keys or other materials, which are good conductors of electricity.
 - 11.** Don't check gas leaks with lighter, matches or other flame.
 - 12.** Don't tamper with any type of electric switches-equipment or any other appliances or moving machinery installed in factory area.
 - 13.** Don't operate any switch, valve etc., without permission.
 - 14.** No welding/grinding/cutting/soldering or open flare/fire etc. should be done without valid safety permit issued by the Engineer-In-charge. While welding/grinding/cutting make sure that sparks & molten slogs etc. don't fly or come into contact with combustible materials surrounding equipments, valves etc. i.e. make provision for collection of sparks.
 - 15.** Always keep gas cylinders away from direct rays of sun, hot place, and welding, grinding & cutting sparks.
 - 16.** Valves on cylinders should not be lubricated.
 - 17.** Gas cylinders should be kept away from work place & Acetylene cylinders should be kept vertical.
 - 18.** Cylinder should not be rolled on roads for transportation from stores or one place to another place, use suitable handcart for the purpose.
 - 19.** It is prohibited to carry gas cylinder up-stair in the plant or in-side the vessel or confined spaces for cutting-welding job.
 - 20.** Electrical equipment should be considered live unless it is ensured that they are isolated & made dead.
 - 21.** All the electrical equipments should be properly earthed as per Indian Electricity Rules.
 - 22.** Be careful to keep all aisles, passageways and stairways clean & unobstructed. All discarded metal & other scrap should be collected.
 - 23.** Storage area for keeping equipments, machines & other raw materials should be isolated & properly protected.
 - 24.** It is forbidden to remove guards from moving machinery or to clean/check moving parts of machines while in motion.
 - 25.** Before commencing repairs on a machine main power supply to it should be cut-off & locked. Display cautionary tags on starting switches. Before you start make sure that everything is in the clear. Guards/covers should be put in position.
 - 26.** Any person without obtaining prior permission from the concerned supervisor should undertake no works on any machinery/equipment/piping.
 - 27.** It is prohibited to work on or near moving machinery by wearing loose clothing.
 - 28.** Nobody should try to clean, lubricate any part of the machinery while the machine is in running.
 - 29.** Welding cables & connections should be in good condition & fix the earthing cables at the welding place only.
 - 30.** No electrical connection should be done without suitable fixtures such as plug pin, switchboard, ELCB, fuses etc.
 - 31.** Starting of any machines or power tools or turning on steam/power or gas should be done only after ensuring that nobody is in danger.

32. Sitting or walking on rail tracks, crossing between wagons, taking rest under stabled wagons, crossing the rail through the openings underneath the stationary wagons are strictly prohibited.
33. When work has to be done on elevated places, towers, roofs, pipe racks & other lofty positions where plat-forms & other fall guards are not there, use of SAFETY BELT is compulsory. Safety Nets will prove very helpful in case somebody slipped from height.
34. Safety helmet must be worn. Nobody shall enter into site without wearing safety helmet.
35. Standing under a suspended load is very dangerous. It may slip & fall-on you thereby causing serious injury & even death.
36. All the sewers or openings/cut-outs should be kept covered to avoid pit falls.
37. Use of SAFETY APPLIANCES like safety goggles, canvas hand gloves, welding helmet, chrome-leather hand gloves, safety shoes, etc. during welding / chipping / grinding should be enforced.
38. Combustible materials like wooden pieces, cotton waste, bags etc. should be immediately removed to safe places.
39. Use of 'Fire Blankets' in order to prevent flying of welding/cutting sparks & contacting with surrounding area should be ensured.
40. Welding cable should be examined & all open wires should be properly insulated.
41. Hands should be thoroughly washed before touching anything that goes in your mouth.
42. All concerned personnel at site should maintain a high standard of 'Cleanliness'.
43. The 'Safety Appliances' supplied to the personnel should be used while doing the job & be maintained in good working conditions. The misuse of safety appliances should be prevented.
44. Permission of a supervisor before any excavation is a must. Also the presence of underground electric cables or any pipelines must be taken care of during excavation.
45. Excavated earth must not be dumped within five feet. The further the better.
46. Passages/Bridges across trenches should be provided with hand rails & toe board.
47. Entry permit should be obtained while entering a pit with a depth of more than one meter.
48. No pit should be left unguarded / uncovered. Provide proper barriers around the pit when persons are not working in it. Red illuminated signal should be displayed so that nobody goes near the pit during dark hours.
49. Only limited person should be allowed to enter in pit for digging or dumping of excavated earth when digging is going on. Two works should not be carried out simultaneously. Also before starting digging or dumping proper tools should be used during digging & dumping operation.
50. Proper arrangement of ladder should be made to enter into the pit.
51. No work, however, small should be under taken/started without obtaining valid work permit from the concerned department.
52. Confined space entry should be done only by valid entry permit from the Engineer-in-charge.
53. Proper approaches/scaffoldings/ladders etc. must be provided to avoid falls.

POINTS TO BE OBSERVED FOR ELECTRICAL SAFETY.

- 1.0 Each machine shall have power supply isolation switch in IP-55 enclosure & minimum 30 meters lengths of 10 mm² Cu flex wire with PVC insulation.
- 2.0 Isolation switch shall have HRC fuses of suitable ratings (32A).
- 3.0 All switches, machine & regulators are to be earthed properly with earthing bus.
- 4.0 Outlets of welding machine (i.e. holder cable and return earth cable) are to be laid up to job and return cable should be connected firmly with job.
- 5.0 All power cable connections and joints are to be made through lugs, to avoid heating & fire.
- 6.0 Each electrically operated machine shall have earth leakage operated MCB to isolate the power in case of electric shock to human.
- 7.0 Regulator extensions are to be connected through 3-pin plug socket.

- 8.0** Contractor must get their machine examined from respective electrical group and insulation resistance value of machine & their associated accessories should be maintain more than 2 ohm.