


| | | |
|---|--|---------------------------|
|  PSSR | MONTHLY PLAN & REVIEW WITH CONTRACTOR | Page 2 of 6 |
| Name of Project | Contract No. | |
| Name of Work | Name of Contractor | |

PART- A: Contd.....

Note 1: In addition to the work planned as per Col. 'A', Contractor shall also make full efforts to minimize the 'Cumulative shortfall attributable to contractor upto the month' as mentioned in Col. 'B' by enhancing its resources, so as to achieve the completion of activities as per agreed schedule. In case contractor is not able to execute the entire shortfall, then BHEL 'Engineer in-charge', shall decide the priority of work to be executed and it shall be binding on the contractor.


Note 2: Percentage Shortfall attributable to contractor w.r.t. "Plan - Shortfall attributable to BHEL" for the month = $[(\Sigma E - \Sigma B) / (\Sigma A - \Sigma D)] \times 100$
 In case, $(\Sigma E - \Sigma B)$ is negative, then it shall be treated as zero percent."

Note 3: Form 14 should include all items being planned in the current month, and all items against which shortfall was attributable to contractor till previous month. However, for practical reason, if it is not possible to mention some of the items in Form-14 being planned to be executed in this month, then also value of such items shall necessarily be included in calculation of Total Value.

Note 4: In case reason for shortfall attributable to contractor is w.r.t. T&P and Manpower, it should be in conformity with Part B1 and B2.

BHEL
 (Sign with name, designation and date)

CONTRACTOR
 (Sign with name, designation and date)

| | | | | |
|---|--|--------------------|--|--------------------|
|  PSSR | MONTHLY PLAN & REVIEW WITH CONTRACTOR | | | Page 4 of 6 |
| Name of Project | | Contract No. | | |
| Name of Work | | Name of Contractor | | |

PART – B-2: PLAN/ REVIEW OF DEPLOYMENT OF MANPOWER FOR THE MONTH OF

Date of Plan/ Review.....

CONTRACTOR'S SCOPE: -

| SN. | Area of Work | Category of Labour | No. of Labour required as per category | Deployment Period (in days) | No. of Labour actually deployed | Actual Deployment Period (in days) | REMARKS (Works affected due to non-availability of labour) |
|-----|--------------|--------------------|--|-----------------------------|---------------------------------|------------------------------------|---|
| | | | A | B | C | D | |
| | | | | | | | |

Percentage of Manpower Deployed = $100 \times \Sigma(C \times D) / \Sigma(A \times B)$

BHEL
(Sign with name, designation and date)

CONTRACTOR
(Sign with name, designation and date)

| | | | |
|-----------------|--|--------------------|--|
| Name of Project | | Contract No. | |
| Name of Work | | Name of Contractor | |

Date of Plan

[illegible]

Note 2: “Original Planned Quantity” shall be as per latest jointly agreed programme between BHEL and Contractor before commencement of work or at the time of latest Time Extension, as the case may be.

CONTRACTOR
(Sign with name, designation and date)

| | | | |
|---|--|--|---------------------------|
|  PSSR | MONTHLY PLAN & REVIEW WITH CONTRACTOR | | Page 6 of 6 |
| | | | |

| | | | |
|-----------------|--|--------------------|--|
| Name of Project | | Contract No. | |
| Name of Work | | Name of Contractor | |

PART – D: REASONS FOR SHORTFALL ATTRIBUTABLE TO BHEL IN RESPECT OF PLAN FOR THE MONTH.....

| SN. | Description of Work (from Part-A) | Quantities Affected | | Reasons for Shortfall attributable to BHEL | Agency responsible for reasons for Shortfall | Remarks (Supporting Documents in respect of agency responsible) |
|-----|--------------------------------------|------------------------|-----------------------------|---|---|--|
| | | (Physical Quantity) | Unit of Measu- rement | | | |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 |
| | | | | | | |

Note1: Reasons for shortfall shall include non-availability of fronts/ drawings/ materials/ T&P (BHEL Scope)/ clearances etc. and other hindrances for which contractor is not responsible.

Note2: Agency responsible may be BHEL Site/ MUs/ Design Centre/ BHEL Customer/ other Contractors etc.

BHEL
(Sign with name, designation and date)

MONTHLY PERFORMANCE EVALUATION OF CONTRACTOR

Form No.: F-15 (Rev 02)

Page 1 of 6

| Project | Vendor | Score Obtained | Package/Unit | Supporting Documents |
|---------|--|----------------|--|---|
| Sl. No. | Parameter for Measurement | Max Score | Measurement Key/Scheduled date | |
| #1.01 | Cumulative number of days in the month, the nominated Quality Officer or his authorised nominee was not available | 1.5 | Quality Officer or his authorised nominee should be available for all the days of working at site | Daily Log Book entry/Incident Registers/letter references |
| #1.02 | Number of instances of non-compliance wrt FQP, Standard Drawings, Specifications, E&C Manuals etc. | 1.5 | No deviation from FQP, Standard Drawings, Specifications, E&C Manuals etc. is allowed without BHEL Engineer's approval. | Daily Log Book entry/Incident Registers/letter references |
| #1.03 | Percentage submission of test certificates for batches of welding electrodes, cement, sand, aggregate, consumable, Paints etc. as applicable for this month OR In case of MM & MH package, monthly checks for Storage/Preservation of material. | 1 | Submission of 100% Test certificates for materials as per FQP is mandatory. MM & MH package: Storage/Preservation as per manual/procedure. | Daily Log Book entry/Incident Registers/letter references |
| #1.04 | Number of incidences of improper storage & preservation (not in accordance to the guidelines of BHEL MUs or approved FQP) of materials, consumables (viz. gases, welding electrodes & fluxes, fuel etc.) & bought-out items (paints, fasteners etc.) under the custody of the contractor | 1 | Total number of non-compliances | Daily Log Book entry/Incident Registers/letter references |
| #1.05 | Rework/ Rejection instances in a month necessitated due to deviation from Standard Drawings /Specifications /Manuals /E&C procedures /FQPs or due to Poor Workmanship by contractor | 2 | Reworks/ Rejection should be as minimum as possible. Total number of reworks/ rejections due to reasons attributable to contractor. | Daily Log Book entry/Incident Registers/letter references |
| #1.06 | Delay in preparation & submission of signed protocols / log sheets / site register / NDT test reports as per approved FQP/ Qualified Welder List along with photocopies of Welder ID cards / Welder Performance Evaluation records etc. in the month OR in case of MM / MH package reconciliation statement / verification report. | 1 | Within 2 days of measurements taken or within first 3 working days of next month, as advised by BHEL Engineer | Daily Log Book entry/Incident Registers/letter references |
| #1.07 | Number of instances for Major equipment/product failure due to negligence/improper work/poor workmanship by contractor | 1 | No such event should happen | Daily Log Book entry/Incident Registers/letter references |
| #1.08 | Total number of complaints received in the month on the quality of finish / aesthetics | 1 | Total number of non-compliances | Daily Log Book entry/Incident Registers/letter references |

Name and Signature of BHEL Package In-charge

Name and Signature of Contractor

MONTHLY PERFORMANCE EVALUATION OF CONTRACTOR

Form No.: F-15 (Rev 02)
Page 2 of 6

| Project | Si. No. | Parameter for Measurement | Vendor | | Package/Unit | | Supporting Documents |
|---------|---------|---|----------------|-----------|----------------|--|---|
| | | | Classification | Max Score | Score Obtained | Measurement Key/Scheduled date | |
| | #2.01 | Cumulative number of days of delay in submission of Plan FOR THE MONTH supported by deployment plan of Major T&Ps and Manpower (as per Form F-14) and relevant construction/layout drawings - like A4 plan / elevation views of plan status for structures / pressure parts/Civil Works, Piping isometrics for piping, Layout / PID / System reference sketch, Unloading / storage plans etc.as applicable. | PERFORMANCE | 5 | | Number of days delayed from second working day of the month | Daily Log Book entry/Incident Registers/letter references |
| | #2.02 | Percentage of timely submission of Daily Reports for Progress of work, Resources, Consumables etc. | PERFORMANCE | 1.5 | | Percentage of timely submission of daily reports/ Scheduled date is successive next day for each day | Daily Log Book entry/Incident Registers/letter references |
| | #2.03 | Number of days delayed for submission of FQP log sheets / protocols / Monthly Progress Reports for the work executed during the month under measurement | PERFORMANCE | 1.5 | | Number of days delayed/Scheduled date is first 2 working days of next month | Daily Log Book entry/Incident Registers/letter references |
| | #2.04 | Percentage Shortfall attributable to contractor w.r.t. "Plan - Shortfall attributable to BHEL" for the month as per Form-14 | PERFORMANCE | 35 | | As per Part-A of Form-14 | Progress review formats |
| | #2.05 | Number of days delayed in submission of Running bills with complete supporting documents (including updated reconciliation statement of BHEL issued material) for the month | PERFORMANCE | 2 | | Number of days delayed / Scheduled date is 7th day of next month | Daily Log Book entry/Incident Registers/letter references |
| | #2.06 | Number of times the Top Management of contractor did not respond to critical issues of site, for the month | PERFORMANCE | 1 | | Total number of instances | Daily Log Book entry/Incident Registers/letter references |
| | #2.07 | Cumulative number of days in the month the works were stopped / refused on interpretation of contract clauses/scope due to tendency of taking undue advantage by interpreting contract clauses in their favour | PERFORMANCE | 2 | | Cumulative number of days lost | Daily Log Book entry/Incident Registers/letter references |
| | #2.08 | Number of times rework was refused by contractor | PERFORMANCE | 1 | | Total number of non-compliances | Daily Log Book entry/Incident Registers/letter references |

Name and Signature of BHEL Package In-charge

Name and Signature of Contractor

MONTHLY PERFORMANCE EVALUATION OF CONTRACTOR

Form No.: F-15 (Rev 02)
Page 3 of 6

| Project | Sl. No. | Parameter for Measurement | Vendor | | Score Obtained | Package/Unit | |
|---------|---------|---|-------------------------------|-----------|----------------|---|---|
| | | | Classification | Max Score | | Measurement Key/Scheduled date | Supporting Documents |
| | #2.09 | Cumulative number of days in the month recording / logging was not done in daily log / history register / hindrance register / soft form in a PC maintained at BHEL Site Office | PERFORMANCE | 1 | | Cumulative number of days recording or logging was not done / all days of the month | Daily Log Book entry/Incident Registers/letter references |
| | #3.01 | Percentage of Manpower Deployed w.r.t. Plan for the month as per Form-14. | RESOURCES | 7 | | As per Part-B2 of Form-14 | Daily Log Book entry/Incident Registers/letter references |
| | #3.02 | Percentage of T&P Deployed w.r.t. Plan for the month as per Form-14. | RESOURCES | 7 | | As per Part-B1 of Form-14 | Daily Log Book entry/Incident Registers/letter references |
| | #3.03 | Cumulative number of major instances in the month hampering / affecting progress of work due to breakdown or non-availability of major T&P and MME for the work, under the scope of Contractor | RESOURCES | 3 | | Cumulative number of instances | Daily Log Book entry/Incident Registers/letter references |
| | #3.04 | Cumulative number of major instances in the month hampering / affecting progress of work due to non-availability of Consumables/ use of improper consumables under the scope of contractor | RESOURCES | 3 | | Cumulative number of instances | Daily Log Book entry/Incident Registers/letter references |
| | #4.01 | Number of non-compliances during the month for Statutory requirements like validity of Labour Licence, Insurance Policy, Labour Insurance, PF, BOCW Compliance etc. and any other applicable laws/ Regulation, Electrical Licence, T&P fitness certificate, Contractors' All Risk Policy etc. as applicable | SITE INFRASTRUCTURE & SERVICE | 1 | | Total number of non-compliances | Daily Log Book entry/Incident Registers/letter references |
| | #4.02 | Cumulative number of days in a month poor illumination is reported at storage area, erection area, pre-assembly area and other designated areas by BHEL site. | SITE INFRASTRUCTURE & SERVICE | 0.5 | | Total number of non-compliances/random checks | Daily Log Book entry/Incident Registers/letter references |
| | #4.03 | Cumulative number of days of non-availability of well-maintained toilets facilities for workers (separate for men and women) and non-availability of potable drinking water stations for workers in specified areas. | SITE INFRASTRUCTURE & SERVICE | 1 | | Total number of non-compliances/random checks | Daily Log Book entry/Incident Registers/letter references |

Sumit

Name and Signature of BHEL Package In-charge

Name and Signature of Contractor

MONTHLY PERFORMANCE EVALUATION OF CONTRACTOR

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| Project | Vendor | Score Obtained | Max Score | Package/Unit | Supporting Documents |
|---------|---|-------------------------------|-----------|--|--|
| Sl. No. | Parameter for Measurement | Classification | Max Score | Measurement Key/Scheduled date | Supporting Documents |
| #4.04 | Total number of instances in the month, Housekeeping NOT attended to in spite of instructions by BHEL -i.e. removal / disposal of surplus earth / debris / scrap / unused / surplus cable drums / other electrical items / surplus steel items / packing materials, thrown out scrap like weld butts, cotton waste etc. from the working area to identified locations | SITE INFRASTRUCTURE & SERVICE | 2 | Total number of non-compliances/random checks | Daily Log Book entry/Incident Registers/letter references |
| #4.05 | Total number of instances in a month, Site Office with reasonably good facilities including enough nos. of computers and printers etc. for use by office and supporting staff was not made available/maintained. | SITE INFRASTRUCTURE & SERVICE | 0.5 | No discrepancy during regular or surprise visits | Photograph and report of the Engineer |
| #5.01 | Number of days delayed in making labour payments for the last month | SITE FINANCE | 2 | Number of days delayed / Scheduled date is 7th day of next month | Daily Log Book entry/Incident Registers/letter references |
| #5.02 | Number of complaints from labour/ sub supplier/ sub-contractor for non-receipt of payments from contractor | SITE FINANCE | 1.5 | Total number of complaints or reporting | Daily Log Book entry/Incident Registers/letter references |
| #5.03 | Number of times the site operations were hampered for want of funds at the disposal of site-in-charge. | SITE FINANCE | 1.5 | Total number of non-compliances | Daily Log Book entry/Incident Registers/letter references |
| #6.01 | Cumulative number of days in a month the nominated Safety Officer was not available | HSE & SA | 1 | Safety Officer should be available for all the days | Daily Log Book entry/Incident Registers/letter references |
| #6.02 | Shortfall in number of weekly safety meetings in the month conducted or attended by the Safety Officer | HSE & SA | 0.5 | Safety meetings to be held every week | Copy of Minutes of meeting |
| #6.03 | Level of compliance w.r.t decisions taken in previous Safety meetings | HSE & SA | 0.5 | Number of consolidated issues discussed in Safety meetings | Copy of Minutes of meeting, Non-compliance intimation documents from BHEL site |
| #6.04 | Delay in submission of monthly report on safety (including electrical safety for equipment & personnel etc.) in the prescribed form | HSE & SA | 1 | Number of days delayed/Scheduled date is third working day of next month | Daily Log Book entry/Incident Registers/letter references |
| #6.05 | Number of days taken for lodging FIRs from date of occurrence/notice of incident of theft / accident etc. | HSE & SA | 0.5 | Number of days delayed/Scheduled date is within 24 Hrs of occurrence/notice of incidence | Copy of FIR lodged by Contractor |

Name and Signature of BHEL Package In-charge

Name and Signature of Contractor

MONTHLY PERFORMANCE EVALUATION OF CONTRACTOR

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| Project | Vendor | Max Score | Score Obtained | Package/Unit | Supporting Documents |
|--------------|--|----------------|----------------|--|---|
| Sl. No. | Parameter for Measurement | Classification | Max Score | Measurement Key/Scheduled date | Supporting Documents |
| #6.06 | Number of times written (email, letters etc.) warning issued for non-availability/ use of improper Fall protection and rescue arrangement as lifeline, fall arrestors, safety net, hand-railings, covered floors, man-basket, rescue basket & kit etc. by the contractor | HSE & SA | 2 | Total number of non-compliances | Daily Log Book entry/Incident Registers/letter references |
| #6.07 | Number of times punitive fines imposed for unsafe practices as per contract like non-availability/use of PPEs as safety shoes, helmets, goggles, gloves, lifeline, safety belts etc. | HSE & SA | 1 | Total number of non-compliances | Non-compliance intimation documents from BHEL site |
| #6.08 | Percentage compliance to Emergency preparedness and response plan: Portable Fire-extinguishers, Buckets, Fire-wardens, display of emergency numbers, mock-drills, Hazard Identification and Risk Assessment(HIRA) etc. | HSE & SA | 1 | Compliance should be 100% as per HSE Plan or as finalized in Safety Meetings | Non-compliance intimation documents from BHEL site |
| #6.09 | Number of times the agency has defaulted on display of safety posters / safety slogans / safety barriers/emergency numbers etc. in identified areas | HSE & SA | 0.5 | Total number of instances | Non-compliance intimation documents from BHEL site |
| #6.10 | Non compliances observed during HSE and Safety Audit | HSE & SA | 0.5 | Total number of non-compliances | Non-compliance intimation documents from BHEL site, Audit Reports |
| #6.11 | Cumulative number of days in the month, non-availability of First Aid Kit, First Aider & Emergency Vehicles/Ambulance. | HSE & SA | 0.5 | Cumulative number of days | Non-compliance intimation documents from BHEL site |
| #6.12 | Number of days taken for submission of Root Cause analysis (RCA) for the accident from the cut-off date intimated by BHEL for submission of RCA | HSE & SA | 0.5 | Number of days delayed/Scheduled date is cut-off date intimated by BHEL | Daily Log Book entry/Incident Registers/letter references |
| #6.13 | Non conductance of training (induction, job specific, height work etc.), tool box meeting and health check-up as per Contract requirements | HSE & SA | 0.5 | Number of incidences of non-conductance during the month | Daily Log Book entry/Incident Registers/letter references |
| Total | | | 100 | | |

Name and Signature of BHEL Package In-charge

Name and Signature of Contractor

MONTHLY PERFORMANCE EVALUATION OF CONTRACTOR

Form No.: F-15 (Rev 02)

Page 6 of 6

| Project | Vendor | Score Obtained | Package/Unit | Supporting Documents |
|---------|--|--------------------|--------------------------------|----------------------|
| Sl. No. | Parameter for Measurement | Classification | Measurement Key/Scheduled date | |
| | Less Deduction in Score Due to Major Accidents (Fatal, Permanent Disability or bodily injury by which person injured is prevented to resume to work within 48 hours or more after accident., Major Damage to Equipment etc.) attributable to the contractor @ 3 points/ accident | | | |
| | Less Deduction in Score Due to Minor Accidents attributable to the contractor @ 1 point/ accident | | | |
| | Less Deduction in Score Due to not Maintaining of Labour Colony (if applicable) as per BHEL HSE policy @2 points in a month on verification any day | | | |
| | | Final Score | | |

| Performance Score Summary for the Month | | Total Score | Score Obtained |
|---|--|-------------|----------------|
| QUALITY | | 10 | |
| PERFORMANCE | | 50 | |
| RESOURCES | | 20 | |
| SITE INFRASTRUCTURE & SERVICE | | 5 | |
| SITE FINANCE | | 5 | |
| HSE & SA | | 10 | |
| OTHERS (deductions if any) | | 0 | |
| TOTAL | | 100 | |

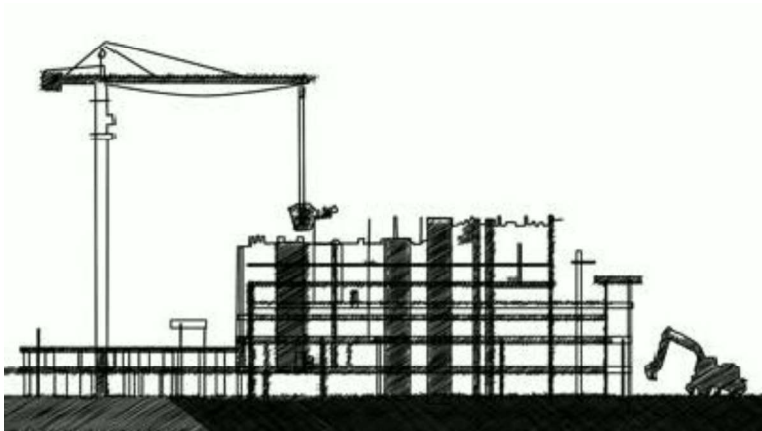
Note:

- 1) It is only indicative and shall be as per the online format issued by BHEL time to time.
- 2) No request will be entertained after specified date of current month w.r.t. changes requested in the scores of immediate previous month.



Name and Signature of BHEL Package In-charge

Name and Signature of Contractor



HEALTH, SAFETY and ENVIRONMENT PLAN

for

**SITE
OPERATIONS**

by

**SUB-
CONTRACTORS**

POWER SECTOR

HSE PLAN FOR SITE OPERATIONS BY BHEL'S SUBCONTRACTORS

AT A GLANCE

| | | |
|--------------|--|---|
| BEFORE START | SIGNING OF MOU | |
| | Agree to comply to HSE requirement- Statutory and BHEL's | Agree to accept BHEL's decision on release of 1.5% (as specified in the contract) of Gross bill amount or part thereof or otherwise(non-release), based on our HSE performance as evaluated by BHEL during the execution period |
| PLAN | HSE ORGANISATION | |
| | Manpower <ul style="list-style-type: none"> 1 (one) safety officer for every 500 workers or part thereof 1(one) safety-steward/ supervisor for every 100 workers Qualification As per Cl. 7.1 | HSE Roles and responsibilities <ul style="list-style-type: none"> Site In-charge- As per clause 7.2.1 Safety officer- As per clause 7.2.2 |
| | HSE Planning for Man, Machinery/Equipment/Tools & Tackles | |
| PROVIDE | HSE INFRASTRUCTURE | |
| | <ul style="list-style-type: none"> PPEs Drinking Water Washing Facilities Latrines and Urinals Provision of shelter for rest Medical facilities | <ul style="list-style-type: none"> Canteen facilities Labour Colony Emergency Vehicle Pest Control Scrapyard Illumination |
| TRAIN | HSE TRAINING , AWARENESS & PROMOTION | |
| | Training <ul style="list-style-type: none"> Induction training Height work and other critical areas Tool Box talk & Pep Talk | Awareness & Promotion <ul style="list-style-type: none"> Signage Poster Banner Competition Awards |
| COMMUNICATE | HSE COMMUNICATION | |
| | Incident Reporting <ul style="list-style-type: none"> Accident- Fatal & Major Property damage Near Miss | Event Reporting <ul style="list-style-type: none"> Celebrations Training Medical camp |

EXECUTE SAFELY

OPERATIONAL CONTROL PROCEDURES

PERMIT TO WORK

Height work (above 2 metres), Hot Work, Heavy Lifting, Confined Space, Radiography, excavation (More than 4 metres)

SAFETY DURING WORK EXECUTION

- | | |
|--|---|
| <ul style="list-style-type: none"> • Welding • Rigging • Cylinder- storage & Movement • Demolition work • T&Ps • Chemical Handling • Electrical works | <ul style="list-style-type: none"> • Fire • Scaffolding • Height work • Working Platform • Excavation • Ladder • Lifting • Hoisting appliance |
|--|---|

HOUSE KEEPING

WASTE MANGEMENT

TRAFFIC MANAGEMENT

ENVIRONMENTAL CONTROL

EMERGENCY PREPAREDNESS AND RESPONSE PLAN

CHECKS

HSE AUDITS & INSPECTION

- | | |
|---|--|
| <ul style="list-style-type: none"> • Daily Checks • Inspection of PPEs • Inspection of T& Ps • Inspection of Cranes & Winches | <ul style="list-style-type: none"> • Inspection of Height work • Inspection of Welding and Gas cutting • Inspection of elevators etc. |
|---|--|

HSE PERFORMANCE EVALUATION PARAMETERS

NON CONFORMANCE

PENALTY for NON CONFORMANCE

Refer Clause 16

Incremental penalty

For repeated violation by the same person, the penalty would be double of the previous penalty

For repeated fatal incident in the same Unit incremental penalty to be imposed. The subcontractor will pay 2 times the penalty compared to previously paid in case there are repeated cases of fatal incidents under the same subcontractor for the same package in the same unit.



**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

Doc no.: HSEP: 14

REV: 01

Date: 17.01.2020

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**HEALTH, SAFETY AND ENVIRONMENT
PLAN FOR
SITE OPERATION by SUBCONTRACTORS**

POWER SECTOR

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1.0 PURPOSE

- 1.1** The purpose of this HSE Plan is to provide for the systematic identification, evaluation, prevention and control of general workplace hazards, specific job hazards, potential hazards and environmental impacts that may arise from foreseeable conditions during installation and servicing of industrial projects and power plants.
- 1.2** This document shall be followed by BHEL's subcontractors at all installation and servicing sites. In case customer specific documents are to be implemented, this document will be followed in conjunction with customer specific documents.
- 1.3** Although every effort has been made to make the procedures and guidelines in line with statutory requirements, in case of any discrepancy relevant statutory guidelines must be followed.
- 1.4** In case the customer has any specific requirement, the same is to be fulfilled.

2.0 SCOPE

The document is applicable for BHEL's Subcontractors at all installation / servicing activities of BHEL Power Sector as per the relevant contractual obligations.

3.0 OBJECTIVES AND TARGETS

The HSE Plan reflects that BHEL places high priority upon the Occupational Health, Safety and Environment at workplaces.

- Ensure the Health and Safety of all persons at work site is not adversely affected by the work.
- Ensure protection of environment of the work site.
- Comply at all times with the relevant statutory and contractual HSE requirements.
- Provide trained, experienced and competent personnel. Ensure medically fit personnel only are engaged at work.
- Provide and maintain plant, places and systems of work that are safe and without risk to health and the environment.
- Provide all personnel with adequate information, instruction, training and supervision on the safety aspect of their work.
- Effectively control, co-ordinate and monitor the activities of all personnel on the Project sites including subcontractors in respects of HSE.
- Establish effective communication on HSE matters with all relevant parties involved in the Project works.
- Ensure that all work planning takes into account all persons that may be affected by the work.
- Ensure fitness testing of all T&Ps/Lifting appliances like cranes, chain pulley blocks etc. are to be certified by competent person.
- Ensure timely provision of resources to facilitate effective implementation of HSE requirements.
- Ensure continual improvements in HSE performance
- Ensure conservation of resources and reduction of wastage.
- Capture the data of all incidents including near misses, process deviation etc. Investigate and analyze the same to find out the root cause.
- Ensure timely implementation of correction, corrective action and preventive action.



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HSE TARGETS

| | |
|-------------------------|------|
| EXPLOSION | ZERO |
| FATALITY | ZERO |
| LOST TIME INJURY | ZERO |
| FIRE | ZERO |
| VEHICLE INCIDENTS | ZERO |
| ENVIRONMENTAL INCIDENTS | ZERO |

4.0 BHEL POWER SECTOR HEALTH, SAFETY & ENVIRONMENT POLICY

Power Sector HSE Policy

We, at BHEL Power Sector, reaffirm our belief that the Health and Safety of our stakeholders and conservation of Environment is of utmost importance and takes precedence in all our business decisions. In pursuit of this belief and commitment, we strive to:

- ✓ Ensure total compliance with applicable legislation, regulations and other requirements concerning Occupational Health, Safety and Environment.
- ✓ Ensure continual improvement in the Occupational Health, Safety and Environment Management System performance.
- ✓ Enhance Occupational Health, Safety and Environment awareness amongst employees, customers and suppliers by proactive communication and training.
- ✓ Review periodically and improve Occupational Health, Safety and Environment Management System to ensure its continuing suitability, adequacy and effectiveness in a continuously changing business environment.
- ✓ Develop a culture of safety through active leadership and provide appropriate training at all levels to enable employees to fulfill their Health, Safety and Environmental obligations.
- ✓ Incorporate appropriate Occupational Health, Safety and Environmental criteria into business decisions for selection of plant, technology and services as well as appointment of key personnel.
- ✓ Ensure availability at all times of appropriate resources to fully implement the Occupational Health, Safety and Environmental policy of the company.

This policy will be communicated to all employees and made available to interested parties.

Sd/-

Date: 01.05.2013

Director (Power)



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5.0 MEMORANDUM OF UNDERSTANDING:

After award of work, subcontractors are required to enter into a memorandum of understanding as given below:

Memorandum of Understanding

BHEL, Power Sector _____ Region is committed to Health, Safety and Environment Policy (HSE Policy).

M/s _____ do hereby also commit to comply with the same HSE Policy while executing the Contract Number _____

M/s _____ shall ensure that safe work practices as per the HSE plan. Spirit and content therein shall be reached to all workers and supervisors for compliance.

In addition to this, M/S _____ shall comply to all applicable statutory and regulatory requirements which are in force in the place of project and any special requirement specified in the contract document of the principal customer.

M/s _____ shall co-operate in HSE audits/inspections conducted by BHEL /customer/ third party and ensure to close any non-conformity observed/reported within prescribed time limit.

Signed by authorized representative of M/s _____

Name :

Place & Date:



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6.0 TERMS AND DEFINITIONS

6.1 DEFINITIONS

6.1.1 INCIDENT

Work- related or natural event(s) in which an injury, or ill health (regardless of severity), damage to property or fatality occurred, or could have occurred.

6.1.2 NEAR MISS

An incident where no ill health, injury, damage or other loss occurs, but it had a potential to cause, is referred to as "Near-Miss".

6.1.3 MAN-HOURS WORKED

The total number of man hours worked by all employees including subcontractors working in the premises. It includes managerial, supervisory, professional, technical, clerical and other workers including contract labours. Man-hours worked shall be calculated from the payroll or time clock recorded including overtime. When this is not feasible, the same shall be estimated by multiplying the total man-days worked for the period covered by the number of hours worked per day. The total number of workdays for a period is the sum of the number of men at work on each day of period. If the daily hours vary from department to department separate estimate shall be made for each department and the result added together.

6.1.4 FIRST AID CASES

First aids are not essentially all reportable cases, where the injured person is given medical treatment and discharged immediately for reporting on duty, without counting any lost time.

6.1.5 LOST TIME INJURY

Any work injury which renders the injured person unable to perform his regular job or an alternative restricted work assignment on the next scheduled work day after the day on which the injury occurred.

6.1.6 MEDICAL CASES

Medical cases come under non-reportable cases, where owing to illness or other reason the employee was absent from work and seeks Medical treatment.

6.1.7 TYPE OF INCIDENTS & THEIR REPORTING:

The three categories of Incident are as follows:

Non-Reportable Cases:

An incident, where the injured person is given medical help and discharged for work without counting any lost time.



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Reportable Cases:

In this case the injured person is disable for 48 hours or more and is not able to perform his duty.

Injury Cases:

These are covered under the heading of non-reportable cases. In these cases the incident caused injury to the person, but he still continues his duty.

6.1.8 TOTAL REPORTABLE FREQUENCY RATE

Frequency rate is the number of Reportable Lost Time Injury (LTI) per one Million Man hours worked. Mathematically, the formula read as:

$$\frac{\text{Number of Reportable LTI} \times 1,000,000}{\text{Total Man Hours Worked}}$$

6.1.9 SEVERITY RATE

Severity rate is the Number of days lost due to Lost Time Injury (LTI) per one Million Man hours worked. Mathematically, the formula reads as:

$$\frac{\text{Days lost due to LTI} \times 1,000,000}{\text{Total Man Hours Worked}}$$

6.1.10 INCIDENCE RATE

Incidence Rate is the Number of LTI per one thousand manpower deployed. Mathematically, the formula reads as:

$$\frac{\text{Number of LTI} \times 1000}{\text{Average number of manpower deployed}}$$

7.0 HSE ORGANISATION

Number of safety officers:

The subcontractor must deploy one safety officer for every 500 workers or part thereof in each package. In addition, there must be one safety-steward/safety-supervisor for every 100 workers.

Deployment: The subcontractor should deploy sufficient safety officers and safety-steward/Safety-supervisor, as per requirement given above, since initial stage and add more in proportion to the added strength in work force. Any delay in deployment will attract a penalty of Rs.30,000/- per man month for the delayed period.

7.1 QUALIFICATION FOR HSE PERSONNEL

| Sl.no | Designation | Qualification | Experience |
|-------|---|--|---|
| 1 | Safety officer (Construction Agency) | Degree or Diploma in Engineering with full time diploma in Industrial Safety with construction safety as one of the subjects | Minimum two years for degree holder and five years for diploma holder in the field of Construction of power plant/ major industries |



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| | | | |
|---|-----------------------------------|---|-------------------|
| 2 | Safety-Steward/ Safety-Supervisor | Degree or diploma in any discipline with full time diploma in Industrial Safety with construction safety as one of the subjects | Minimum two years |
|---|-----------------------------------|---|-------------------|

7.2 RESPONSIBILITIES

7.2.1 SITE IN -CHARGE OF SUBCONTRACTOR

- ☐ Shall sign Memorandum of Understanding (MoU) for compliance to BHEL's HSE Plan for Site Operations as per clause 5.0
- Shall engage qualified safety officer(s) and steward (s) as per clause 7.0
- Shall adhere to the rules and regulations mentioned in this code, practice very strictly in his area of work in consultation with his concerned engineer and the safety coordinator.
- Shall screen all workmen for health and competence requirement before engaging for the job and periodically thereafter as required.
- Shall not engage any employee below 18 years.
- Shall arrange for all necessary PPEs like safety helmets, belts, full body harness, shoes, face shield, hand gloves etc. before starting the job. Shall ensure that no working men/women carry excessive weight more than stipulated in Factory Rule Regulation R57.
- Shall ensure that all T&Ps engaged are tested for fitness and have valid certificates from competent person.
- Shall ensure that provisions stipulated in contract Labour Regulation Act 1970, Chapter V C.9, canteen, rest rooms/washing facilities to contracted employees at site.
- Shall adhere to the instructions laid down in Operation Control Procedures (OCPs) available with the site management.
- Shall ensure that person working above 2.0 meter should use Safety Harness tied to a life line/stable structure.
- Shall ensure that materials are not thrown from height. Cautions to be exercised to prevent fall of material from height.
- Shall report all incidents (Fatal/Major/Minor/Near Miss) to the Site engineer /HSE officer of BHEL.
- Shall ensure that Horseplay is strictly forbidden.
- Shall ensure that adequate illumination is arranged during night work.
- Shall ensure that all personnel working under subcontractor are working safely and do not create any Hazard to self and to others.
- Shall ensure display of adequate signage/posters on HSE.
- Shall ensure that mobile phone is not used by workers while working.
- Shall ensure conductance of HSE audit, mockdrill, medical camps, induction training and training on HSE at site.
- Shall ensure full co-operation during HQ/External /Customer HSE audits.



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- ☐ Shall ensure submission of look-ahead plan for procurement of HSE equipment's and PPEs as per work schedule.
- Shall ensure good housekeeping.
- Shall ensure adequate valid fire extinguishers are provided at the work site.
- Shall ensure availability of sufficient number of toilets /restrooms and adequate drinking water at work site and labour colony.
- Shall ensure adequate emergency preparedness.
- Shall be member of site HSE committee and attend all meetings of the committee
- Power source for hand lamps shall be maximum of 24 v.
- ☐ Temporary fencing should be done for open edges if Hand – railings and Toe-guards are not available.

7.2.2 HEALTH, SAFETY AND ENVIRONMENT OFFICER OF SUBCONTRACTOR

- Carry out safety inspection of Work Area, Work Method, Men, Machine & Material, P&M and other tools and tackles.
- Facilitate inclusion of safety elements into Work Method Statement.
- Highlight the requirements of safety through Tool-box / other meetings.
- Help concerned HOS to prepare Job Specific instructions for critical jobs.
- Conduct investigation of all incident/dangerous occurrences & recommend appropriate safety measures.
- Advice & co-ordinate for implementation of HSE permit systems, OCPs & MPs.
- Convene HSE meeting & minute the proceeding for circulation & follow-up action.
- Plan procurement of PPE & Safety devices and inspect their healthiness.
- Report to PS Region/HQ on all matters pertaining to status of safety and promotional program at site level.
- Facilitate administration of First Aid
- Facilitate screening of workmen and safety induction.
- Conduct fire Drill and facilitate emergency preparedness
- Design campaigns, competitions & other special emphasis programs to promote safety in the workplace.
- ☐ Apprise PS– Region on safety related problems.
- Notify site personnel non-conformance to safety norms observed during site visits / site inspections.
- Recommend to Site In charge, immediate discontinuance of work until rectification, of such situations warranting immediate action in view of imminent danger to life or property or environment.
- To decline acceptance of such PPE / safety equipment that do not conform to specified requirements.
- Encourage raising Near Miss Report on safety along with, improvement initiatives on safety.
- Shall work as interface between various agencies such customer, package-in-charges, subcontractors on HSE matters



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8.0 PLANNING BY SUBCONTRACTOR

Monthly planning and review of HSE activities shall be carried out by subcontractor as per format No. HSEP:14-F30 jointly along with BHEL.

8.1 MOBILISATION OF MACHINERY/EQUIPMENT/TOOLS BY SUBCONTRACTOR

- As a measure to ensure that machinery, equipment and tools being mobilized to the construction site are fit for purpose and are maintained in safe operating condition and complies with legislative and owner requirement, inspection shall be arranged by in-house competent authority for acceptance as applicable.
- The machinery and equipment to be embraced for this purpose shall include but not limited to the following:
 - Mobile cranes.
 - Side Booms.
 - Forklifts.
 - Grinding machine.
 - Drilling machine.
 - Air compressors.
 - Welding machine.
 - Generator sets.
 - Dump Trucks.
 - Excavators.
 - Dozers
 - Grit Blasting Equipment.
 - Hand tools.
- Subcontractor shall notify the engineer, of his intention to bring on to site any equipment or any container, with liquid or gaseous fuel or other substance which may create a hazard. The Engineer shall have the right to prescribe the condition under which such equipment or container may be handled and used during the performance of the works and the subcontractor shall strictly adhere to such instructions. The Engineer shall have the right to inspect any construction tool and to forbid its use, if in his opinion it is unsafe. No claim due to such prohibition will be entertained.

8.2 MOBILISATION OF MANPOWER BY SUBCONTRACTOR

- The subcontractor shall arrange induction and regular health check of their employees as per schedule VII of BOCW rules by a registered medical practitioner.
- The subcontractor shall take special care of the employees affected with occupational diseases under rule 230 and schedule II of BOCW Rules. The employees not meeting the fitness requirement should not be engaged for such job.
- Ensure that the regulatory requirements of excessive weight limit (to carry/lift/ move weights beyond prescribed limits) for male and female workers are complied with.
- Appropriate accommodation to be arranged for all workmen in hygienic condition.



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8.3 PROVISION OF PPEs

- Personnel Protective Equipment (PPEs), in adequate numbers, will be made available at site & their regular use by all concerned will be ensured
- The following matrix recommends usage of minimum PPEs against the respective job.

| Sl. No | Type of work | PPEs |
|--------|-------------------------------|--|
| 1 | Concrete and asphalt mixing | Nose mask, hand glove, apron and gum boot |
| 2 | Welders/Grinders/ Gas cutters | Welding/face screen, apron, hand gloves, nose mask and ear muffs if noise level exceeds 90dB. Helmet fitted with welding shield is preferred for welders |
| 3 | Stone/ concrete breakers | Ear muffs, safety goggles, hand gloves |
| 4 | Electrical Work | Rubber hand glove, Electrical Resistance shoes |
| 5 | Insulation Work | Respiratory mask, Hand gloves, safety goggles |
| 6 | Work at height | Double lanyard full body harness, Fall arrestor (specific cases) |
| 7 | Grit/Sand blasting | Blast suit, blast helmet, respirator, leather gloves |
| 8 | Painting | Plastic gloves, Respirators (particularly for spray painting) |
| 9 | Radiography | As per BARC guidelines |

- The PPEs shall conform to the relevant standards as below and bear ISI mark.

Relevant is-codes for personal protection

| | |
|---------------------------------------|--|
| IS: 2925 – 1984 | Industrial Safety Helmets. |
| IS: 4770 – 1968 | Rubber gloves for electrical purposes. |
| IS: 6994 – 1973 (Part-I) | Industrial Safety Gloves (Leather & Cotton Gloves). |
| IS: 1989 – 1986 (Part-I-II) | Leather safety boots and shoes. |
| IS: 5557 – 1969 | Industrial and Safety rubber knee boots. |
| IS: 6519 – 1971 | Code of practice for selection, care and repair of Safety footwear. |
| IS: 11226 – 1985 | Leather Safety footwear having direct molding sole. |
| IS: 5983 – 1978 | Eye protectors. |
| IS: 9167 – 1979 | Ear protectors. |
| IS: 1179-1967 | Eye & Face protection during welding |
| IS: 3521 – 1983 | Industrial Safety Belts and Harness |
| IS: 8519 -1977 | Guide for selection of industrial Safety equipment for body protection |
| IS: 9473-2002, 14166-1994, 14746-1999 | Respiratory Protective Devices |

The list is not exhaustive. The safety officer may demand additional PPEs based on specific requirement.



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- Where workers are employed in sewers and manholes, which are in use, the subcontractor shall ensure that the manhole covers are opened and ventilated at least for an hour before the workers are allowed to get into manhole, and the manholes so opened shall be cordoned off with suitable railing and provided with warning signals or boards to prevent incident to the public
- Besides the PPEs mentioned above, the persons shall use helmet and safety shoe. The visitors shall use Helmet and any other PPEs as deemed appropriate for the area of work.

Colour scheme for Helmets:

1. Workmen: Yellow
 2. Safety staff: Green or white with green band
 3. Electrician: Red
 4. Others including visitors: White
- All the PPEs shall be checked for its quality before issue and the same shall be periodically checked. The users shall be advised to check the PPEs themselves for any defect before putting on. The defective ones shall be repaired/ replaced.
 - The issuing agency shall maintain register for issue and receipt of PPEs.
 - The Helmets shall have logo or name (abbreviation of agency name permitted) affixed or printed on the front.
 - The body harnesses shall be serial numbered.

8.4 ARRANGEMENT OF INFRASTRUCTURE

8.4.1 DRINKING WATER

- Drinking water shall be provided and maintained at suitable places at different elevations.
- Container should be labeled as " Drinking Water"
- Cleaning of the storage tank shall be ensured atleast once in 3 months indicating date of cleaning and next due date.
- Potability of water should be tested as per IS10500 at least once in a year.

8.4.2 WASHING FACILITIES

- In every workplace, adequate and suitable facilities for washing shall be provided and maintained.
- Separate and adequate cleaning facilities shall be provided for the use of male and female workers. Such facilities shall be conveniently accessible and shall be kept in clean and hygienic condition and dully illuminated for night use.
- Overalls shall be supplied by the subcontractor to the workmen and adequate facilities shall be provided to enable the painters and other workers to wash during the cessation of work.

8.4.3 LATRINES AND URINALS

- Latrines and urinals shall be provided in every work place.
- Urinals shall also be provided at different elevations.
- They shall be adequately lighted and shall be maintained in a clean and sanitary condition at all times, by appointing designated person.
- Separate facilities shall be provided for the use of male and female worker if any.



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8.4.4 PROVISION OF SHELTER DURING REST

Proper Shed & Shelter shall be provided for rest during break

8.4.5 MEDICAL FACILITIES

8.4.5.1 MEDICAL CENTRE (As per Schedule V, X and XI of BOCW central Rules, 1998)

- A medical centre shall be ensured/identified at site with basic facilities for handling medical emergencies. The medical center can be jointly developed on proportionate sharing basis with permission from BHEL
- A qualified medical professional, not less than MBBS, shall be deployed at the medical centre
- The medical centre shall be equipped with one ambulance, with trained driver and oxygen cylinder.
- Medical waste shall be disposed as per prevailing legislation (Bio-Medical Waste –Management and Handling Rules, 1998)

8.4.5.2 FIRST AIDER

- Ensure availability of Qualified First-aider throughout the working hours.
- Every injury shall be treated, recorded and reported.
- Refresher course on first aid shall be conducted as necessary.
- List of Qualified first aiders and their contact numbers should be displayed at conspicuous places.

8.4.5.3 FIRST AID BOX (as per schedule III of BOCW)

- The subcontractor shall provide necessary first aid facilities as per schedule III of BOCW. At every work place first aid facilities shall be provided and maintained.
- The first aid box shall be kept by first aider who shall always be readily available during the working hours of the work place. His name and contact no to be displayed on the box.
- The first aid boxes should be placed at various elevations so as to make them available within the reach and at the quickest possible time.
- The first aid box shall be distinctly marked with a Green Cross on white background.
- Details of contents of first aid box is given in Annexure No. 01
- Monthly inspection of First Aid Box shall be carried out by the owner as per format no. HSEP:14-F01
- The subcontractor should conduct periodical first –aid classes to keep his supervisor and Engineers properly trained for attending to any emergency.

8.4.5.4 HEALTH CHECK UP (As per schedule VII and Form XI)

The persons engaged at the site shall undergo health checkup as per the format no. HSEP:14-F02 before induction. The persons engaged in the following works shall undergo health checkup at least once in a year:

- a. Height workers
- b. Drivers/crane operators/riggers



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- c. Confined space workers
- d. Shot/sand blaster
- e. Welding and NDE personnel

8.4.6 PROVISION OF CANTEEN FACILITY

- Canteen facilities shall be provided for the workmen of the project inside the project site.
- Proper cleaning and hygienic condition shall be maintained.
- Proper care should be taken to prevent biological contamination.
- Adequate drinking water should be available at canteen.
- Fire extinguisher shall be provided inside canteen.
- Regular health check-up and medication to the canteen workers shall be ensured.

8.4.7 PROVISION OF ACCOMODATION/LABOUR COLONY

- ☐ The subcontractor shall arrange for the accommodation of workmen at nearby localities or by making a labour colony.
- ☐ Regular housekeeping of the labour colony shall be ensured.
- ☐ Proper sanitation and hygienic conditions to be maintained.
- ☐ Drinking water and electricity to be provided at the labour colony.
- ☐ Bathing/ washing bay
- ☐ Room ventilation and electrification.

8.4.8 PROVISION OF EMERGENCY VEHICLE

- Dedicated emergency vehicle shall be made available at workplace by each subcontractor to handle any emergency

8.4.9 PEST CONTROL

Regular pest control should be carried out at all offices, mainly laboratories, canteen, labour colony and stores.

8.4.10 SCRAPYARD

- In consultation with customer, scrapyard shall be developed to store metal scrap, wooden scrap, waste, hazardous waste.
- Scrap/Waste shall be segregated as Bio-degradable and non-bio-degradable and stored separately.

8.4.11 ILLUMINATION

- The subcontractor shall arrange at his cost adequate lighting facilities e.g. flood lighting, hand lamps, area lighting etc. at various levels for safe and proper working operations at dark places and during night hours at the work spot as well as at the pre-assembly area.
- Adequate and suitable light shall be provided at all work places & their approaches including passage ways as per IS: 3646 (Part-II). Some recommended values are given below:



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| S. No. | Location | Illumination (Lux) |
|-----------|--|-----------------------|
| A. | Construction Area | |
| 1. | Outdoor areas like store yards, entrance and exit roads | 20 |
| 2. | Platforms | 50 |
| 3. | Entrances, corridors and stairs | 100 |
| 4. | General illumination of work area | 150 |
| 5. | Rough work like fabrication, assembly of major items | 150 |
| 6. | Medium work like assembly of small machined parts rough measurements etc. | 300 |
| 7. | Fine work like precision assembly, precision measurements etc. | 700 |
| 8. | Sheet metal works | 200 |
| 9. | Electrical and instrument labs | 450 |
| B. | Office | |
| 1. | Outdoor area like entrance and exit roads | 20 |
| 2. | Entrance halls | 150 |
| 3. | Corridors and lift cars | 70 |
| 4. | Lift landing | 150 |
| 5. | Stairs | 100 |
| 6. | Office rooms, conference rooms, library reading tables | 300 |
| 7. | Drawing table | 450 |
| 8. | Manual telephone exchange | 200 |

- Lamp (hand held) shall not be powered by mains supply but either by 24V or dry cells.
- Lamps shall be protected by suitable guards where necessary to prevent danger, in case of breakage of lamp.
- Emergency lighting provision for night work shall be made to minimise danger in case of main supply failure.

If the subcontractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instructions issued by the authorized BHEL official, BHEL shall have the right to take corrective steps at the risk and cost of the subcontractor

9.0 HSE TRAINING& AWARENESS

9.1 HSE INDUCTION TRAINING

All persons entering into project site shall be given HSE induction training by the HSE officer of BHEL /subcontractor before being assigned to work.

In-house induction training subjects shall include but not limited to:

- Briefing of the Project details.
- Safety objectives and targets.
- Site HSE rules.
- Site HSE hazards and aspects.
- First aid facility.
- Emergency Contact No.
- Incident reporting.
- Fire prevention and emergency response.
- Rules to be followed in the labour colony (if applicable)



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- Proper safety wear & gear must be issued to all the workers being registered for the induction (i.e., Shoes/Helmets/Goggles/Leg guard/Apron etc.)
- They must arrive fully dressed in safety wear & gear to attend the induction.
- Any one failing to conform to this safety wear& gear requirement shall not qualify to attend.
- On completing attending subcontractor's in-house HSE induction, each employee shall sign an induction training form (format no. HSEP:14-F03) to declare that he had understood the content and shall abide to follow and comply with safe work practices. They may only then be qualified to be issued with a personal I.D. card, for access to the work site.

9.2 HSE TOOLBOX TALK

- HSE tool Box talk shall be conducted by frontline foreman/supervisor of subcontractor to specific work groups prior to the start of work. The agenda shall consist of the followings:
 - Details of the job being intended for immediate execution.
 - The relevant hazards and risks involved in executing the job and their control and mitigating measures.
 - Specific site condition to be considered while executing the job like high temperature, humidity, unfavorable weather etc.
 - Recent non-compliances observed.
 - Appreciation of good work done by any person.
 - Any doubt clearing session at the end.
- Record of Tool box talk shall be maintained as per format no. HSEP:14-F04
- Tool box talk to be conducted at least once a week for the specific work.

9.3 TRAINING ON HEIGHT WORK

Training on height work shall be imparted to all workers working at height by in-house/external faculty at least twice in a year. The training shall include following topics:

- Use of PPEs
- Use of fall arrester, retractable fall arrester, life line, safety nets etc.
- Safe climbing through monkey ladders.
- Inspection of PPEs.
- Medical fitness requirements.
- Mock drill on rescue at height.
- Dos & Don'ts during height work.

9.4 HSE TRAINING DURING PROJECT EXECUTION

- Other HSE training shall be arranged by BHEL/ subcontractor as per the need of the project execution and recommendation of HSE committee of site.
- The topics of the HSE training shall be as follows but not limited to:
 - Hazards identification and risk analysis (HIRA)
 - Work Permit System
 - Incident investigation and reporting
 - Fire fighting
 - First aid
 - Fire-warden training
 - EMS and OHSMS
 - T & Ps fitness and operation



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- Electrical safety
- Welding, NDE & Radiological safety
- Storage, preservation & material handling.
- A matrix shall be maintained to keep an up-to-date record of attendance of training sessions carried out.

9.5 HSE PROMOTION-SIGNAGE, POSTERS, COMPETITION, AWARDS ETC

9.5.1 Display of HSE posters and banners

- Site shall arrange appropriate posters, banners, slogans in local/Hindi/English languages at work place

9.5.2 Display of HSE signage

- Appropriate HSE signage shall be displayed at the work area to aware workmen and passersby about the work going on and do's and don'ts to be followed

9.5.3 Competition on HSE and award

- Site will arrange different competition (slogan, poster, essay etc.) on HSE time to time (Safety day, BHEL day, World Environment Day etc.) and winners will be suitably awarded.

9.5.4 HSE awareness programme

- Subcontractor shall arrange HSE awareness programme periodically on different topics including medical awareness for all personnel working at site

10.0 HSE COMMUNICATION

10.1 INCIDENT REPORTING

- The subcontractor shall submit report of all incidents, fires and property damage etc to the Engineer immediately after such occurrence, but in any case not later than 24 hours of the occurrence. Such reports shall be furnished in the manner prescribed by BHEL. (Refer HSE procedure for incident investigation, analysis and reporting for details)
- In addition, periodic reports on safety shall also be submitted by the subcontractor to BHEL from time to time as prescribed by the Engineer. Compiled monthly reports of all kinds of incidents, fire and property damage to be submitted to BHEL safety officer as per prescribed formats.
- HSE incidents of site shall be reported to BHEL site Management as per Procedure for Incident Investigation and Reporting in format no. HSEP:14-F15. Corrective action shall be immediately implemented at the work place and compliance shall be verified by BHEL HSE officer and until then, work shall be put on hold by Construction Manager.

10.2 HSE EVENT REPORTING

- Important HSE events like HSE training, Medical camp etc. organized at site shall be reported to BHEL site management in detail with photographs for publication in different in-house magazines
- Celebration of important days like National Safety Day, World Environment Day etc. shall also be reported as mentioned above.

10.3 DAILY HSE ACTIVITY REPORTING

Daily HSE activities shall be reported by subcontractor to BHEL as per Format No. HSEP:14-F31A



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11.0 OPERATIONAL CONTROL

All applicable OCPs (Operational control procedures) will be followed by subcontractor as per BHEL instructions. This will be done as part of normal scope of work. List of such OCPs is given below. In case any other OCP is found to be applicable during the execution of work at site, then subcontractor will follow this as well, within quoted rate. These OCPs (applicable ones) will be made available to subcontractor during work execution at site. However for reference purpose, these are kept with Safety Officer of BHEL at the Power Sector Regional HQ, or available in downloadable format in the website, which may be refereed by subcontractor, if they so desire.

LIST OF OCPs

| | | |
|---|---|-------------------------------------|
| Safe handling of chemicals | Safety in use of cranes | Hydraulic test |
| Electrical safety | Storage and handling of gas cylinders | Spray insulation |
| Energy conservation | Manual arc welding | Trial run of rotary equipment |
| Safe welding and gas cutting operation | Safe use of helmets | Stress relieving |
| Fire safety | Good house keeping | Material preservation |
| Safety in use of hand tools | Working at height | Cable laying/tray work |
| First aid | Safe excavation | Transformer charging |
| Food safety at canteen | Safe filling of hydrogen in cylinder | Electrical maintenance |
| Illumination | Vehicle maintenance | Safe handling of battery system |
| Handling and erection of heavy metals | Safe radiography | Computer operation |
| Safe acid cleaning | Waste disposal | Storage in open yard |
| Safe alkali boil out | Working at night | For sanitary maintenance |
| Safe oil flushing | Blasting | Batching |
| Steam blowing | DG set | Piling rig operation |
| Safe working in confined area | Handling & storage of mineral wool | Gas distribution test |
| Safe operation of passenger lift, material hoists & cages | Drilling, reaming and grinding(machining) | Cleaning of hotwell / deaerator |
| Electro-resistance heating | Compressor operation | O&M of control of AC plant & system |
| Air compressor | Passivation | Safe Loading of Unit |
| Safe EDTA Cleaning | Safe Chemical cleaning of Pre boiler system | Safe Boiler Light up |
| Safe Rolling and Synchronization | | |

11.1 HSE ACTIVITIES

HSE activities shall be conducted at site based on the HSEMSM developed by Power Sector and issued to site by Regions.

While planning for any activity the following documents shall be referred for infrastructural requirements to establish control measures:

- 1) HSE Procedure for Register of OHS Hazards and Risks
- 2) HSE Procedure for Register of Environmental Aspects and Impacts
- 3) HSE Procedure for Register of Regulations



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- 4) Operational Control Procedures
- 5) HSE Procedure for Emergency Preparedness and Response Plan
- 6) Contract documents

11.2 WORK PERMIT SYSTEM

- ☐ The following activities shall come under Work Permit System
 - a. Height working above 2 metres
 - b. Hot working at height
 - c. Confined space
 - d. Radiography
 - e. Excavation more than 4 meter depth
 - f. Heavy lifting above 50 tonRefer Annexure 05 for Work permit formats.
- "HSE Procedure for Work Permit System" shall be followed while implementing permit system. Where customer is having separate Work Permit System the same shall be followed.
- ☐ Permit applicant shall apply for work permit of particular work activity at particular location before starting of the work with Job Hazard Analysis.
- ☐ Permit signatory shall check that all the control measures necessary for the activity are in place and issue the permit to the permit holder.
- ☐ Permit holder shall implement and maintain all control measures during the period of permit .He will close the permit after completion of the work. The closed permit shall be archived in HSE Department of site.

11.3 SAFETY DURING WORK EXECUTION

Respective OCPS are to be followed and adherence to the same would be contractually binding

11.3.1 WELDING SAFETY

All safety precautions shall be taken for welding and cutting operations as per IS-818. All safety precautions shall be taken for foundation and other excavation marks as per IS-3764.

11.3.2 RIGGING

Rigging equipment shall not be loaded in excess of its recommended safe working load. Rigging equipment, when not in use, shall be removed from the original work area so as not to present a hazard to employees.

11.3.3 CYLINDERS STORAGE AND MOVEMENT

All gas cylinders shall be stored in upright position. Suitable trolley shall be used. There shall be flash-back arrestors conforming to IS-11006 at both cylinder and burner ends. Damaged tube and regulators must be immediately replaced. No of cylinders shall not exceed the specified quantity as per OCP

Cylinders shall be moved by tilting and rolling them on their bottom edges. They shall not be intentionally dragged, struck or permitted to strike each other violently.



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When cylinders are transported by powered vehicle they shall be secured in a vertical position.

11.3.4 DEMOLITION WORK

Before any demolition work is commenced and also during the process of the work the following shall be ensured:

- All roads and open areas adjacent to the work site shall either be closed or suitably protected.
- No electric cable or apparatus which is liable to be a source of danger nor a cable or an apparatus used by the operator shall remain electrically charged.
- All practical steps shall be taken to prevent danger to persons employed from the risks of fire or explosion or flooding. No floor, roof or other part of the building shall be so overloaded with debris or materials as to render them unsafe.

11.3.5 T&Ps

All T&Ps/ MMEs should be of reputed brand/appropriate quality & must have valid test/calibration certificates bearing endorsement from competent authority of BHEL..Subcontractor to also submit monthly reports of T&Ps deployed and validity test certificates to BHEL safety Officer as per the format/procedure of BHEL.

11.3.6 CHEMICAL HANDLING

Displaying safe handling procedures for all chemicals such as lube oil, acid, alkali, sealing compounds etc , at work place. Where it is necessary to provide and/or store petroleum products or petroleum mixture & explosives, the subcontractor shall be responsible for carrying out such provision / storage in accordance with the rules & regulations laid down in the relevant petroleum act, explosive act and petroleum and carbide of calcium manual, published by the chief inspector of explosives of India. All such storage shall have prior approval if necessary from the chief inspector of explosives or any other statutory authority. The subcontractor shall be responsible for obtaining the same.

11.3.7 ELECTRICAL SAFETY

- Providing adequate no. of 24 V sources and ensure that no hand lamps are operating at voltage level above 24 Volts.
- Fulfilling safety requirements at all power tapping points.
- High/ Low pressure welders to be identified with separate colour clothings. No welders will be deployed without passing appropriate tests and holding valid welding certificates. Approved welding procedure should be displayed at work place.
- The subcontractor shall not use any hand lamp energized by Electric power with supply voltage of more than 24 volts in confined spaces like inside water boxes, turbine casings, condensers etc.
- All portable electric tools used by the subcontractor shall have safe plugging system to source of power and be appropriately earthed. Only electricians licensed by appropriate statutory authority shall be employed by the subcontractor to carry out all types of electrical works. Details of earth resource and their test date to be given to BHEL safety officer as per the prescribed formats of BHEL.
- The subcontractor shall use only properly insulated and armored cables which conform to the requirement of Indian Electricity Act and Rules for all wiring, electrical applications at site.



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- BHEL reserves the right to replace any unsafe electrical installations, wiring, cabling etc. at the cost of the subcontractor.
- All electrical appliances used in the work shall be in good working condition and shall be properly earthed.
- No maintenance work shall be carried out on live equipment.
- The subcontractor shall maintain adequate number of qualified electricians to maintain his temporary electrical installations.
- Area wise Electrical safety inspection is to be carried out on monthly basis as per "Electrical Safety Inspection checklist" and the report is to be submitted to BHEL safety officer
- Adequate precautions shall be taken to prevent danger for electrical equipment. No materials on any of the sites of work shall be so stacked or placed as to cause danger or inconvenience to any person or the public
- The subcontractor shall carefully follow the safety requirement of BHEL/ the purchaser with the regard to voltages used in critical areas.

11.3.8 FIRE SAFETY

- Providing appropriate fire fighting equipment at designated work place and nominate a fire officer/warden adequately trained for his job.
- Subcontractor shall provide enough fire protecting equipment of the types and numbers at his office, stores, temporary structure in labor colony etc. Such fire protection equipment shall be easy and kept open at all times.
- The fire extinguishers shall be properly refilled and kept ready which should be certified at periodic intervals. The date of changing should be marked on the Cylinders.
- All other fire safety measures as laid down in the "codes for fire safety at construction site" issued by safety coordinator of BHEL shall be followed.
- Non-compliance of the above requirement under fire protection shall in no way relieve the subcontractor of any of his responsibility and liabilities to fire incident occurring either to his materials or equipment or those of others.
- Emergency contacts nos must be displayed at prominent locations
- Tarpaulin being inflammable should not be used (instead, only non-infusible covering materials shall be used) as protective cover while preheating, welding, stress relieving etc. at site.

11.3.9 SCAFFOLDING

- Suitable scaffolds shall be provided for workman for all works that cannot safely be done from the ground, or from solid construction except in the case of short duration of work which can be done safely from ladders.
- When a ladder is used, it shall be of rigid construction made of steel. The steps shall have a minimum width of 45 cm and a maximum rise of 30 cm. Suitable handholds of good quality wood or steel shall be provided and the ladder shall be given an inclination not steeper than $\frac{1}{4}$ horizontal and 1 vertical.
- Scaffolding or staging more than 3.6 m above the ground floor, swung or suspended from an overhead support or erected with stationery support shall have a guard rail properly bolted, braced or otherwise secured, at least 90 cm above the floor or platform of such scaffolding or staging and extending along the entire length of the outside and ends thereof with only such openings as may be necessary for the delivery of materials. Such scaffolding or staging shall be so fastened as to prevent it from savor, from swaying, from the building or structure.

11.3.10 WORK AT HEIGHT:

- Guardrails and toe-board/barricades and sound platform conforming to IS:4912-1978 should be provided.



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- Wherever necessary, life-line (pp or metallic) and fall arrestor along with Polyamide rope or Retractable lifeline should be provided.
- Safety Net as per IS:11057:1984 should be used extensively for prevention/ arrest of men and materials falling from height. The safety nets shall be fire resistant, duly tested and shall be of ISI marked and the nets shall be located as per site requirements to arrest or to reduce the consequences of a possible fall of persons working at different heights.
- Reaching beyond barricaded area without lifeline support, moving with support of bracings, walking on beams without support, jumping from one level to another, throwing objects and taking shortcut must be discouraged.
- Use of Rebar steel for making Jhoola and monkey-ladder (Rods welded to vertical or inclined structural members), temporary platform etc. must be avoided.
- Monkey Ladder should be properly made and fitted with cages.
- Jhoola should be made with angles and flats and tested like any lifting tools before use.
- Lanyard must be anchored always and in case of double lanyard, each should be anchored separately.
- In case of pipe-rack, persons should not walk on pipes and walk on platforms only.
- In case of roof work, walking ladder/ platform should be provided along with lifeline and/ or fall arrestor.
- Empty drums must not be used.
- For chimney or structure painting, both hanging platform and men should be anchored separately to a firm structure along with separate fall arrestor. Rope ladder should be discouraged.

11.3.11 WORKING PLATFORM

Working platforms, gangways and stairways shall be so constructed that they do not sag unduly or unequally and if the height of the platform gangways provided is more than 3.6 m above ground level or floor level, they shall be closely boarded and shall have adequate width which shall not be less than 750 mm and be suitably fenced as described above. Every opening in the floor or a building or in a working platform shall be provided with suitable means to prevent the fall of persons or materials by providing suitable fencing or railing whose minimum height shall be 90 cm.

11.3.12 EXCAVATION

Wherever there are open excavation in ground, they shall be fenced off by suitable railing and danger signals installed at night so as to prevent persons slipping into the excavations.

11.3.13 LADDER SAFETY

Safe means of access shall be provided to all working places. Every ladder shall be securely fixed. No portable single ladder shall be over 9 m in the length while the width between side rails in rung ladder shall in no case be less than app. 29.2 cm for ladder upto and including 3 m in length. For longer ladders this width shall be increased at least ¼" for each additional foot of length.

A sketch of the ladders and scaffolds proposed to be used shall be prepared and approval of the Engineer obtained prior to Construction.

11.3.14 LIFTING SAFETY

- It will be the responsibility of the subcontractor to ensure safe lifting of the equipment, taking due precaution to avoid any incident and damage to other equipment and personnel.



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- All requisite tests and inspection of handling equipment, tools & tackle shall be periodically done by the subcontractor by engaging only the Competent Persons as per law.
- Defective equipment or uncertified shall be removed from service.
- Any equipment shall not be loaded in excess of its recommended safe working load.

11.3.15 HOISTING APPLIANCE

- Motors, gearing, transmission, electric wiring and other dangerous parts of hoisting appliances should be provided with efficient safe guards.
- Hoisting appliance should be provided with such means as will reduce to the minimum the risk of any part of a suspended load becoming incidentally displaced.
- When workers employed on electrical installations which are already energized, insulating mats, wearing apparel, such as gloves, sleeves and boots as may be necessary should be provided.
- The worker should not wear any rings, watches and carry keys or other materials which are good conductor of electricity.

11.4 ENVIRONMENTAL CONTROL

Environment protection has always been given prime importance by BHEL. Environmental damage is a major concern of the principal subcontractor and every effort shall be made, to have effective control measures in place to avoid pollution of Air, Water and Land and associated life. Chlorofluorocarbons such as carbon tetrachloride and trichloroethylene shall not be used. Waste disposal shall be done in accordance with the guidelines laid down in the project specification.

Any chemical including solvents and paints, required for construction shall be stored in designated bonded areas around the site as per Material Safety Data Sheet (MSDS).

In the event of any spillage, the principle is to recover as much material as possible before it enters drainage system and to take all possible action to prevent spilled materials from running off the site. The subcontractor shall use appropriate MSDS for clean-up technique

All subcontractors shall be responsible for the cleanliness of their own areas.

The subcontractors shall ensure that noise levels generated by plant or machinery are as low as reasonably practicable. Where the subcontractor anticipates the generation of excessive noise levels from his operations the subcontractor shall inform to Construction Manager of BHEL accordingly so that reasonable & practicable precautions can be taken to protect other persons who may be affected.

It is imperative on the part of the subcontractor to join and effectively contribute in joint measures such as tree plantation, environment protection, contributing towards social upliftment, conversion of packing woods to school furniture, keeping good relation with local populace etc.

The subcontractor shall carry out periodic air and water quality check and illumination level checking in his area of work place and take suitable control measure.

11.5 HOUSEKEEPING

- Keeping the work area clean/ free from debris, removed scaffoldings, scraps, insulation/sheeting wastage /cut pieces, temporary structures, packing woods etc. will be in the scope of the subcontractor. Such cleanings has to be done by



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subcontractor within quoted rate, on daily basis by an identified group. If such activity is not carried out by subcontractor / BHEL is not satisfied, then BHEL may get it done by other agency and actual cost along with BHEL overheads will be deducted from contractor's bill. Such decisions of BHEL shall be binding on the subcontractor

- Proper housekeeping to be maintained at work place and the following are to be taken care of on daily basis.
- All surplus earth and debris are removed/disposed off from the working areas to identified locations.
- Unused/Surplus cables, steel items and steel scrap lying scattered at different places/elevation within the working areas are removed to identified locations.
- All wooden scrap, empty wooden cable drums and other combustible packing materials, shall be removed from workplace to identified locations. Sufficient waste bins shall be provided at
- Different work places for easy collection of scrap/waste. Scrap chute shall be installed to remove scrap from high location.
- Access and egress (stair case, gangways, ladders etc.) path should be free from all scrap and other hindrances.
- Workmen shall be educated through tool box talk about the importance of housekeeping and encourage not to litter.
- Labour camp area shall be kept clear and materials like pipes, steel, sand, concrete, chips and bricks, etc. shall not be allowed in the camp to obstruct free movement of men and machineries.
- Fabricated steel structures, pipes & piping materials shall be stacked properly.
- No parking of trucks/trolleys, cranes and trailers etc. shall be allowed in the camp, which may obstruct the traffic movement as well as below LT/HT power line.
- Utmost care shall be taken to ensure over all cleanliness and proper upkeep of the working areas

11.6 WASTE MANAGEMENT

Take suitable measures for waste management and environment related laws/legislation as a part of normal construction activities. Compliance with the legal requirements on storage/ disposal of paint drums (including the empty ones), Lubricant containers, Chemical Containers, and transportation and storage of hazardous chemicals will be strictly maintained.

11.6.1 BINS AT WORK PLACE

- Sufficient rubbish bins shall be provided close to workplaces.
- Bins should be painted yellow and numbered.
- Sufficient nos. of drip trays shall be provided to collect oil and grease.
- Sufficient qty. of broomsticks with handle shall be provided.
- Adequate strength of employees should be deployed to ensure daily monitoring and service for waste management.

11.6.2 STORAGE AND COLLECTION

- Different types of rubbish/waste should be collected and stored separately.
- Paper, oily rags, smoking material, flammable, metal pieces should be collected in separate bins with close fitting lids.
- Rubbish should not be left or allowed to accumulate on construction and other work places.
- Do not burn construction rubbish near working site.



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11.6.3 SEGREGATION

- Earmark the scrap area for different types of waste.
- Store wastes away from building.
- Oil spill absorbed by non-combustible absorbent should be kept in separate bin.
- Clinical and first aid waste stored and incinerated separately.

11.6.4 DISPOSAL

- Sufficient containers and scrap disposal area should be allocated.
- All scrap bin and containers should be conveniently located.
- Provide self-closing containers for flammable/spontaneously combustible material.
- Keep drainage channels free from choking.
- Make schedule for collection and disposal of waste.

11.6.5 WARNING AND SIGNS

- Appropriate sign to be displayed at scrap storage area
- No toxic, corrosive or flammable substance to be discarded into public sewage system.
- Waste disposal shall be in accordance with best practice.
- Comply with all the requirements of Pollution Control Board (PCB) for storage and disposal of hazardous waste.

11.7 TRAFFIC MANAGEMENT SYSTEM

11.7.1 SAFE WORKPLACE TRANSPORT SYSTEM

- Traffic routes in a work place shall be suitable for the persons or vehicles using them. This shall be sufficient in number and of sufficient size. This shall reflect the suitability of traffic routes for vehicles and pedestrians.
- Where vehicles and pedestrians use the same traffic routes there shall be sufficient space between them. Where necessary all traffic routes must be suitably indicated. Pedestrians or vehicles must be able to use traffic routes without endangering those at work. There must be sufficient separation of traffic routes from doors, gates and pedestrian traffic routes.
- For internal traffic, lines marked on roads / access routes and between buildings shall clearly indicate where vehicles are to pass.
- Temporary obstacles shall be brought to the attention of drivers by warning signs or hazard cones.
- Speed limits shall be clearly displayed. Speed ramps preceded by a warning signs or marker are necessary.
- The traffic route should be wide enough to allow vehicles to pass and re-pass oncoming or parked traffic and it may be advisable to introduce on-way system or parking restrictions.
- Safest route shall be provided between places where vehicles have to call or deliver.
- Avoid vulnerable areas/items such as fuel or chemicals tanks or pipes, open or unprotected edges and structures likely to collapse



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- Safe areas shall be provided for loading and unloading.
- Avoid sharp or blind bends. If this is not possible hazards should be indicated e.g. blind corner.
- Ensure road crossings are minimum and clearly signed.
- Entrance and gateways shall be wide enough to accommodate a second vehicle without causing obstruction.
- Set sensible speed limits which are clearly sign posted.
- Where necessary ramps should be used to retard speed. This shall be preceded by a warning sign or mark on the road.
- Forklift trucks shall not pass over road hump unless of a type capable of doing so.
- Overhead electric cable, pipes containing flammable hazardous chemical shall be shielded by using goal posts height gauge posts or barriers.
- Road traffic signs shall be provided on prominent locations for prevention of incidents and hazards and for quick guidance and warning to employees and public. Safety signs shall be displayed as per the project working requirement and guideline of the state in which project is done. Vehicles hired or used shall not be parked within the 15m radius of any working area. Any vehicle, that is required to be at the immediate/near the vicinity, shall be approved by the person in-charge of the site.

11.7.2 TRAFFIC ROUTE FOR PEDESTRIANS

- Where traffic routes are used by both pedestrians and vehicles road shall be wide enough to allow vehicles and pedestrians safely.
- Separate routes shall be provided for pedestrians to keep them away from vehicles. Provide suitable barriers/guard at entrances/exit and the corners or buildings.
- Where pedestrian and vehicle routes cross, appropriate crossing shall be provided.
- Where crowd is likely to use roadway e.g. at the end of shift, stop vehicles from using them at such times.
- Provide high visibility clothing for people permitted in delivery area.

11.7.3 WORK VEHICLE

Work vehicle shall be as safe stable efficient and roadworthy as private vehicles on public roads. Site management shall ensure that drivers are suitably trained. All vehicle e.g. heavy motor vehicle forklift trucks dump trucks mobile cranes shall ensure that the work equipment conforms to the following:

- A high level of stability.
- A safe means of access/egress.
- Suitable and effective service and parking brakes.
- Windscreens with wipers and external mirrors giving optimum all round visibility.
- Provision of horn, vehicle lights, reflectors, reversing lights, reversing alarms.
- Provision of seat belts.
- Guards on dangerous parts.
- Driver protection - to prevent injury from overturning and from falling objects/materials.
- Driver protection from adverse weather.
- No vehicle shall be parked below HT/LT power lines.
- Valid Pollution Under Control certification for all vehicles



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11.7.4 DAILY CHECK BY DRIVER

- There should also be daily safety checks containing below mentioned points by the driver before the vehicle is used.
 - Brakes.
 - Tires.
 - Steering.
 - Mirrors.
 - Windscreen waters.
 - Wipers.
 - Warning signals.
 - Specific safety system i.e. control interlocks
- Management should ensure that drivers carry out these checks.

11.7.5 TRANSPORTATION OF PERSONNEL AND MATERIALS BY VEHICLES

- All drivers shall hold a valid driving License for the class of vehicle to be driven and be registered as an authorized BHEL driver with the Administration Department.
 - Securing of the load shall be by established and approved methods, i.e. chains with patented tightening equipment for steel/heavy loads. Sharp corners on loads shall be avoided when employing ropes for securing.
 - All overhangs shall be made clearly visible and restricted to acceptable limits
 - Load shall be checked before moving off and after traveling a suitable distance.
 - On no account is construction site to be blocked by parked vehicles Drivers of vehicles shall only stop or park in the areas designate by the stringing foreman.
 - Warning signs shall be displayed during transportation of material.
- All vehicles used by BHEL shall be in worthy condition and in conformance to the Land Transport requirement.

11.7.6 MAINTENANCE

All Vehicles used for transportation of man and material shall undergo scheduled inspections on frequent intervals to secure safe operation. Such inspections shall be conducted in particular for steering, brakes, lights, horn, doors etc. Site management shall ensure that work equipment is maintained in an efficient, working order and in good repair. Inspections and services carried out at regular intervals of time and or mileage. No maintenance shall be carried below HT/LT power lines.

11.8 EMERGENCY PREPAREDNESS AND RESPONSE

- Emergency preparedness and response capability of site shall be developed as per Emergency Preparedness and Response plan issued by Regional HQ
- Availability of adequate number of first aiders and fire warden shall be ensured with BHEL and its subcontractors
- All the subcontractor's supervisory personnel and sufficient number of workers shall be trained for fire protection systems. Enough number of such trained personnel must be available during the tenure of contract. Subcontractor should nominate his supervisor to coordinate and implement the safety measures.
- Assembly point shall be earmarked and access to the same from different location shall be shown
- Fire exit shall be identified and pathway shall be clear for emergency escape.



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- Appropriate type and number of fire extinguisher shall be deployed as per Fire extinguisher deployment plan and validity shall be ensured periodically through inspection
- Adequate number of first aid boxes shall be strategically placed at different work places to cater emergency need. Holder of the first aid box shall be identified on the box itself who will have the responsibility to maintain the same.
- First aid center shall be developed at site with trained medical personnel and ambulance
- Emergency contact numbers (format given in EPRP) of the site shall be displayed at prominent locations.
- Tie up with fire brigade shall be done in case customer is not having fire station.
- Tie up with hospital shall be done in case customer is not having hospital.
- Disaster Management group shall be formed at site
- Mock drill shall be arranged at regular intervals. Monthly report of the above to be given to BHEL safety Officer as per prescribed BHEL formats
- Mock drill shall be conducted on different emergencies periodically to find out gaps in emergency preparedness and taking necessary corrective action

12.0 HSE INSPECTION

Inspection on HSE for different activities being carried out at site shall be done to ensure compliance to HSEMS requirements. The subcontractor shall maintain and ensure necessary safety measures as required for inspection and tests HV test, Pneumatic test, Hydraulic test, Spring test, Bend test etc. as applicable, to enable inspection agency for performing Inspection. If any test equipment is found not complying with proper safety requirements then the Inspection Agency may withhold inspection, till such time the desired safety requirements are met.

12.1 DAILY HSE CHECKS

Both the Site Supervisors and safety officer of Subcontractor are to conduct daily site Safety inspection around work activities and premises to ensure that work methods and the sites are maintained to an acceptable standard. The following are to form the common subjects of a daily safety inspection:

- Personal Safety wears & gear compliance.
- Complying with site safety rules and permit-to-work (PTW).
- Positions and postures of workers.
- Use of tools and equipment etc. by the workers.

The inspection should be carried out just when work starts in beginning of the day, during peak activities period of the day and just before the day's work ends.

12.2 INSPECTION OF PPE

- PPEs shall be inspected by HSE officer at random once in a week as per format no. HSEP:14-F06 for its compliance to standard and compliance to use and any adverse observation shall be recorded in the PPE register.
- The applicable PPEs for carrying out particular activities are listed below.



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12.3 INSPECTION OF T&Ps

- A master list of T&Ps shall be maintained by each subcontractor.
- All T&Ps being used at site shall be inspected by HSE officer once in a month as per format no. HSEP:14-F07 for its healthiness and maintenance.
- The T&Ps which require third party inspection shall be checked for its validity during inspection. The third party test certificate should be accompanied with a copy of the concerned competent person's valid qualification record.
- The validity of T&P shall be monitored as per "Status of T&Ps" format no. HSEP:14-F08

12.4 INSPECTION OF CRANES AND WINCHES

- Cranes and winches shall be inspected by the operator through a daily checklist for its safe condition (as provided by the equipment manufacturer) before first use of the day.
- Cranes and Winches shall be inspected by HSE officer once in a month as per format no. HSEP:14-F09 for healthiness, maintenance and validity of third party inspection.
- The date of third party inspection and next due date shall be painted on cranes and winches.
- The operators/drivers shall be authorized by sub-contractor based on their competency and experience and shall carry the I-card.
- The operator should be above 18 years of age and should be in possession of driving license of HMV man & goods), vision test certificate and should have minimum qualification so that he can read the instructions and check list.

12.5 INSPECTION ON HEIGHT WORKING

- Inspection on height working shall be conducted daily by supervisors before start of work to ensure safe working condition including provision of
 - Fall arrestor
 - Lifelines
 - Safety nets
 - Fencing and barricading
 - Warning signage
 - Covering of opening
 - Proper scaffolding with access and egress.
 - Illumination
- Inspection on height working shall be conducted once in a week by HSE officer as per format no. HSEP:14-F10.
- Medical fitness of height worker shall be ensured.
- Height working shall not be allowed during adverse weather.

12.6 INSPECTION ON WELDING AND GAS CUTTING OPERATION

- Supervisor shall ensure that no flammable items are available in near vicinity during welding and gas cutting activity.
- Gas cylinders shall be kept upright.
- Use of Flash back arrestor shall be ensured at both ends.



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- Inspection during welding and gas cutting operations shall be carried out by HSE officer once a month as per format no. HSEP:14-F11.
- Use of fire blanket to be ensured to avoid falling of splatters during welding or gas cutting operation at height.
- Availability of fire extinguisher at vicinity shall be ensured.

12.7 INSPECTION ON ELECTRICAL INSTALLATION / APPLIANCES

- Ensure proper earthing in electrical installation
- Use ELCB at electrical booth
- Electrical installation shall be properly covered at top where required
- Use appropriate PPEs while working
- Use portable electrical light < 24 V in confined space and potentially wet area.
- Monthly inspection shall be carried out as per format no. HSEP:14-F12.

12.8 INSPECTION OF ELEVATOR

- Elevators shall be inspected by concerned supervisors once in a week as per format no. HSEP:14-F13.
- All elevators shall be inspected by competent person and validity shall be ensured.
- The date of third party inspection and next due date shall be painted on elevator.

12.9 INSPECTION OF EXCAVATION

Excavation activities shall be inspected as per Format HSEP:14-F13A

13.0 HSE PERFORMANCE

- Contractor shall be assessed on monthly basis for HSE Compliance by BHEL Safety In-charge at site. The HSE compliance shall be based on Online HSE Evaluation System by BHEL as per Format No. HSEP:14-F33.
Only if the bidder qualifies the 'HSE Compliance Criteria' then bidder shall be eligible for further assessment on other parameters.
Average score of last 6 months for 'HSE Compliance Criteria' for a bidder shall be worked out and Minimum Average Score of last 6 months for a bidder to qualify for future tenders shall be 60. For new vendors (whose past record in Online HSE Evaluation System is not available with BHEL), this criterion shall not be applicable.

Note: This criterion shall be subject to review by BHEL from time to time as per requirement/ prevailing conditions.
- Suitable HSE reward system shall be developed at site level to promote HSE compliance amongst workmen.
- To decide HSE reward performance towards HSE shall be evaluated for workmen and it shall be awarded regularly in public gathering.
- If safety record of the subcontractor in execution of the awarded job is to the satisfaction of safety department of BHEL, issue of an appropriate certificate to recognize the safety performance of the subcontractor may be considered by BHEL after completion of the job.



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14.0 HSE PENALTIES

- As per contractual provision HSE penalties shall be imposed on subcontractors for non-compliance on HSE requirement as per format no. HSEP:14-F14. The list in the format is only indicative. For any other violation, not listed in the format, the minimum penalty amount is to be decided as per BOCW act.
- If principal customer/statutory and regulatory bodies impose some penalty on HSE due to the non-compliance of the subcontractor the same shall be passed on to them.
- The penalty amount shall be recovered by Site Finance department from subcontractors from the RA/Final bill.

15.0 OTHER REQUIREMENTS

- In case of any delay in completion of a job due to mishaps attributable to lapses by the subcontractor, BHEL shall have the right to recover cost of such delay from the payments due to the subcontractor, after notifying the subcontractor suitably.
- If the subcontractor fails to improve the standards of safety in its operation to the satisfaction of BHEL after being given reasonable opportunity to do so and/or if the subcontractor fails to take appropriate safety precautions or to provide necessary safety devices and equipment or to carry out instruction regarding safety issued by BHEL, BHEL shall have the right to take corrective steps at the risk and cost of the subcontractor after giving a notice of not less than 7 days indicating the steps that would be taken by BHEL.
- If the subcontractor succeeds in carrying out its job in time without any fatal or disabling injury incident and without any damage to property BHEL may, at its sole discretion, favorably consider to reward the subcontractor suitably for the performance.
- In case of any damage to property due to lapses by the subcontractor, BHEL shall have the right to recover the cost of such damages from the subcontractor after holding an appropriate enquiry.
- The subcontractor shall take all measures at the sites of the work to protect all persons from incidents and shall be bound to bear the expenses of defense of every suit, action or other proceeding of law that may be brought by any persons for injury sustained or death owing to neglect of the above precautions and to pay any such persons such compensation or which may with the consent of the subcontractor be paid to compromise any claim by any such person, should such claim proceeding be filed against BHEL, the subcontractor hereby agrees to indemnify BHEL against the same.
- The subcontractor shall not employ men below the age of 18 years and women on the work of painting with products containing lead in any form. Wherever men above the age of 18 are employed on the work of lead painting, overalls shall be supplied by the subcontractor to the workmen and adequate facilities shall be provided to enable the working painters to wash during the cessation of work.
- The subcontractor shall notify BHEL of his intention to bring to site any equipment or material which may create hazard.
- BHEL shall have the right to prescribe the conditions under which such equipment or materials may be handled and the subcontractor shall adhere to such instructions.



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- BHEL may prohibit the use of any construction machinery, which according to the organization is unsafe. No claim for compensation due to such prohibition will be entertained by BHEL.

16. NON COMPLIANCE

NONCONFORMITY OF SAFETY RULES AND SAFETY APPLIANCES WILL BE VIEWED SERIOUSLY AND BHEL HAS RIGHT TO IMPOSE FINES ON THE SUBCONTRACTOR AS UNDER FOR EVERY INSTANCE OF VIOLATION NOTICED:

| SN | Violation of Safety Norms | Fine (in Rs) |
|-----|--|--|
| 01 | Not Wearing Safety Helmet | 200/- * |
| 02. | Not wearing Safety Belt or not anchoring life line | 500/-* |
| 03 | Not wearing safety shoe | 200/-* |
| 04 | Not keeping gas cylinders vertically | 200/- |
| 05 | Not using flash back arrestors | 100/- |
| 06 | Not wearing gloves | 50/- * |
| 07. | Grinding Without Goggles | 50/- * |
| 08. | Not using 24 V Supply For Internal Work | 500/- |
| 09. | Electrical Plugs Not used for hand Machine | 100/- |
| 10. | Not Slings properly | 200/- |
| 11. | Using Damaged Sling | 200/- |
| 12. | Lifting Cylinders Without Cage | 500/- |
| 13. | Not Using Proper Welding Cable With Lot of Joints And Not Insulated Property. | 200/- |
| 14. | Not Removing Small Scrap From Platforms | 500/- |
| 15. | Gas Cutting Without Taking Proper Precaution or Not Using Sheet Below Gas Cutting | 500/- |
| 16. | Not Maintaining Electric Winches Which are Operated Dangerously | 500/- |
| 17. | Improper Earthing Of Electrical T&P | 500/- |
| 18 | No or improper barricading | 500/- |
| 19. | Activity carried out without Safety work permit (Height work, Lifting activity, Hot work-each person/case) | 1000/- |
| 20. | Incident Resulting in Partial Loss in Earning Capacity | 25,000/- per victim |
| 21. | Fatal Incident Resulting in total loss in Earning Capacity | 1,00,000/- per victim for first instance # |

- Legend:-

*: per head. For repeated violation by the same person, the penalty would be double of the previous penalty. Date of "Repeated violation" will be counted from subsequent days.

#: or as deducted by customer, whichever is higher. For repeated fatal incident in the same Unit incremental penalty to be imposed. The subcontractor will pay 2 times the penalty compared to previously paid in case there are repeated cases of fatal incidents under the same subcontractor for the same package in the same unit.

Any other non-conformity noticed not listed above will also be fined as deemed fit by BHEL. The decision of BHEL engineer is final on the above. The amount will be deducted from running bills of the subcontractor. The amount collected above will be utilized for giving award to the employees who could avoid incident by following safety rules. Also the amount will be spent for purchasing the safety appliances and supporting the safety activity at site.



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17.0 HSE AUDIT/INSPECTION

- Regular HSE Audit/inspection shall be carried out by Subcontractor as per Site HSE audit calendar.
- HSE checklist (**Annexure 02**) shall be used for carrying out audit/inspection and report shall be submitted to BHEL site management
- All non-conformities and observations on HSE identified during internal or external HSE audit shall be disposed off by site in a time bound manner and reported back the implementation status
- Corrective action and Preventive action on HSE issues raised by certification body issued by Regional HQs shall be implemented by site and reported to Site management.

18.0 MONTHLY HSE REVIEW MEETING

- ☐ Site shall hold HSE review meeting every month to discuss and resolve HSE issues of site and improve HSE performance. It will also discuss the incidents occurred since previous meeting, its root cause and Corrective action and Preventive action. The agenda is given below:
 - Implementation of earlier MOM
 - HSE performance
 - HSE inspection
 - HSE audit and CAPA
 - HSE training
 - Health check-up camp
 - HSE planning for the erection and commissioning and installation activities in the coming month
 - HSE reward and promotional activities
- ☐ The meeting shall be chaired by Construction Manager, convened by HSE coordinator and attended by all HOS, Site Incharge of Subcontractors and HSE officer of Subcontractors.
- ☐ MOM on the discussion will be circulated to the concerned for implementation.

19.0 FORMATS USED (Details available in Annexure-04)

| SL. No. | Format Name | Format No. | Rev No. |
|---------|-----------------------------|----------------------|---------|
| 01 | Inspection of First Aid Box | HSEP:14-F01 | 00 |
| 02 | Health Check Up | HSEP:14-F02 | 00 |
| 03 | HSE Induction Training | HSEP:14-F03 | 00 |
| 04 | Tool Box Talk | HSEP:14-F04 | 00 |
| 05 | Monthly Site HSE Report | As specified by BHEL | 00 |
| 06 | Inspection of PPE | HSEP:14-F06 | 00 |



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| | | | |
|----|--|-------------|----|
| 07 | Inspection of T&Ps | HSEP:14-F07 | 00 |
| 08 | Status of T&Ps | HSEP:14-F08 | 00 |
| 09 | Inspection of Cranes and Winches | HSEP:14-F09 | 00 |
| 10 | Inspection on Height Working | HSEP:14-F10 | 00 |
| 11 | Inspection on Welding & Gas Cutting | HSEP:14-F11 | 00 |
| 12 | Inspection on Electrical Installation | HSEP:14-F12 | 00 |
| 13 | Inspection on Elevator | HSEP:14-F13 | 00 |
| 14 | HSE Penalty | HSEP:14-F14 | 00 |
| 15 | Accident /incident / property damage /fire incident report | HSEP:14-F15 | 00 |



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20.0 ANNEXURES

ANNEXURE 01

As per Contract Labour (Regulation & Abolition Act), Central Rules, 1971,

- (1) The first-aid box shall be distinctively marked with a Red Cross on a white background and shall contain the following items, namely:

(a) For establishments in which the number of contract labour employed does not exceed fifty, each first aid box shall contain the following equipment:

| | |
|---------|--|
| (i) | 6 small sterilized dressings |
| (ii) | 3 medium size sterilized dressings |
| (iii) | 3 large size sterilized dressings |
| (iv) | 6 pieces of sterilized eye pads in separate sealed packets. |
| (v) | 6 roller bandages 10 cm wide. |
| (vi) | 6 roller bandages 5 cm wide. |
| (vii) | One tourniquet |
| (viii) | A supply of suitable splints |
| (ix) | Three packets of safety pins. |
| (x) | Kidney tray. |
| (xi) | 3 large sterilized burn dressings. |
| (xii) | 1 (30ml) bottle containing a two percent alcoholic solution of iodine |
| (xiii) | 1 (30 ml) bottle containing Sal volatile having the dose and mode of administration indicated on the label |
| (xiv) | 1 snake bite lancet |
| (xv) | 1 (30gms) bottle of potassium permanganate crystals. |
| (xvi) | 1 pair scissors |
| (xvii) | 1 copy of the First-Aid leaflet issued by the Director General, Factory Advice Service and Labour Institutes, Government of India. |
| (xviii) | A bottle containing 100 tablets (each of 5 grains) of aspirin |
| (xix) | Ointment for burns |
| (xx) | A bottle of suitable surgical anti-septic solution |

(b) For establishment in which the number of contract labour exceeds fifty each first-aid box shall contain the following equipment:

| | |
|-------|--|
| (i) | 12 small sterilized dressings |
| (ii) | 6 medium size sterilized dressings |
| (iii) | 6 large size sterilized dressings. |
| (iv) | 6 large size sterilized burn dressings |
| (v) | 6 (15 grams) packets sterilized cotton wool |
| (vi) | 12 pieces of sterilized eye pads in separate sealed packets. |



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| | |
|---------|---|
| (vii) | 12 roller bandages 10 cm wide. |
| (viii) | 12 roller bandages 5 cm wide. |
| (ix) | One tourniquet. |
| (x) | A supply of suitable splints. |
| (xi) | Three packets of safety pins. |
| (xii) | Kidney tray. |
| (xiii) | Sufficient number of eye washes bottles filled with distilled water or suitable liquid clearly indicated by a distinctive sign which shall be visible at all times. |
| (xiv) | 4 per cent Xylocaine eye drops, and boric acid eye drops and soda by carbonate eye drops. |
| (xv) | 1 (60ml) bottle containing a two percent alcoholic solution of iodine |
| (xvi) | One (two hundred ml) bottle of mercurochrome (2 per cent) solution in water. |
| (xvii) | 1 (120ml) bottle containing Sal volatile having the dose and mode of administration indicated on the label. |
| (xviii) | 1 roll of adhesive plaster (6 cmX1 meter) |
| (xix) | 2 rolls of adhesive plaster (2 cmX1 meter) |
| (xx) | A snake bite lancet. |
| (xxi) | 1 (30 grams) bottle of potassium permanganate crystals. |
| (xxii) | 1 pair scissors |
| (xxiii) | 1 copy of the First-Aid leaflet issued by the Director-General, Factory Advice service and labour Institutes, Government of India. |
| (xxiv) | a bottle containing 100 tablets (each of 5 grains) of aspirin |
| (xxv) | Ointment for burns |
| (xxvi) | A bottle of a suitable surgical anti septic solution. |

- (2) Adequate arrangement shall be made for immediate recoupment of the equipment when necessary.



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ANNEXURE 02

HSE AUDIT/INSPECTION CHECKLIST CUM COMPLIANCE REPORT

PROJECT: _____

SUBCONTRACTOR: _____

DATE : _____

OWNER : _____

INSPECTION BY: _____

Note : write 'NA' wherever the items is not applicable

| Item | Y e s | N o | Remarks | Action |
|---|-------------|--------|---------|--------|
| HOUSEKEEPING | | | | |
| Waste containers provided and used | | | | |
| Passageways and walkways clear | | | | |
| General neatness of working area | | | | |
| Other | | | | |
| PERSONNEL PROTECTIVE EQUIPMENTS | | | | |
| Goggles; shields | | | | |
| Face protection | | | | |
| Hearing protection | | | | |
| Respiratory masks etc. | | | | |
| Safety belts | | | | |
| Other | | | | |
| EXCAVATIONS / OPENINGS | | | | |
| Openings properly covered or barricaded | | | | |
| Excavations shored | | | | |
| Excavations barricaded | | | | |
| Overnight lighting provided | | | | |
| Other | | | | |
| WELDING, CUTTING | | | | |
| Gas cylinders chained upright | | | | |
| Cable and hoses not obstructing | | | | |
| Fire extinguisher (s) accessible | | | | |
| Others | | | | |
| SCAFFOLDING | | | | |
| Fully decked platforms | | | | |
| Guard and intermediate rails in place | | | | |
| Toe boards in place | | | | |
| Adequate shoring | | | | |
| Adequate access | | | | |
| Others | | | | |
| LADDER | | | | |
| Extension side rails 1 m above | | | | |
| Top of landing | | | | |
| Properly secured | | | | |



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| | | | | |
|--|--|--|--|--|
| Angle + 70° from horizontal | | | | |
| Other | | | | |
| HOISTS, CRANES AND DERRICKS | | | | |
| Condition of cables and sheaf OK | | | | |
| Condition of slings, chains, hooks OK | | | | |
| Inspection & maintenance log maintained | | | | |
| Outriggers used | | | | |
| Signals observed and understood | | | | |
| Qualified operators | | | | |
| Others | | | | |
| MACHINERY, TOOLS & EQUIPMENT | | | | |
| Proper instruction | | | | |
| Safety devices | | | | |
| Proper cords | | | | |
| Inspection and maintenance | | | | |
| Other | | | | |
| VEHICLE AND TRAFFIC | | | | |
| Rules and regulations observed | | | | |
| Inspection and maintenance | | | | |
| Licensed drivers | | | | |
| Other | | | | |
| TEMPORARY FACILITIES | | | | |
| Emergency instructions posted | | | | |
| Fire extinguishers provided | | | | |
| Fire-aid equipment available | | | | |
| General neatness | | | | |
| Others | | | | |
| FIRE PREVENTION | | | | |
| Personnel instructed | | | | |
| Fire extinguishers checked | | | | |
| No smoking in prohibited areas. | | | | |
| Hydrants | | | | |
| Clearance | | | | |
| Others | | | | |
| ELECTRICAL | | | | |
| Proper wiring | | | | |
| ELCB's provided | | | | |
| Ground fault circuit interrupters | | | | |
| Protection against damage | | | | |
| Prevention of tripping hazards | | | | |
| Other | | | | |
| HANDLING & STORAGE OF MATERIALS | | | | |
| Properly stored or stacked | | | | |
| Passageways clear | | | | |
| Other | | | | |
| FLAMMABLE GASES AND LIQUIDS | | | | |
| Containers clearly identified | | | | |
| Proper storage | | | | |
| Fire extinguisher nearby | | | | |



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| | | | | |
|---|--|--|--|--|
| Other | | | | |
| WORKING AT HEIGHT | | | | |
| Safety nets | | | | |
| Safety belts | | | | |
| Safety helmets | | | | |
| Anchoring of safety belt to the life line rope | | | | |
| ENVIRONMENT | | | | |
| Lubricant waste/engine oils properly dispose. | | | | |
| Waste from Canteen, offices, sanitation etc. disposed properly. | | | | |
| Disposal of surplus earth, stripping materials, expired batteries, oily rags and combustible materials done properly. | | | | |
| HEALTH CHECKS | | | | |
| Hygienic conditions at labor camps O.K. | | | | |
| Availability of first-aid facilities | | | | |
| Proper sanitation at site, office & labor camps. | | | | |
| Arrangement of medical facilities. | | | | |
| Measures for dealing with illness. | | | | |
| Availability of potable drinking water for workmen & staff. | | | | |
| Provision of crèches for children. | | | | |
| | | | | |



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ANNEXURE 03

REFERENCES

- Contract documents
- Relevant legislations
- HSEMSM
- Relevant Indian standards as listed below (illustrative only):

| SL NO | CODE NAME | TITLE |
|-------|---|---|
| (1) | IS : 818-1888 (Reaffirmed 2003) | Code of Practice for safety and health requirements in Electric and Gas Welding and Cutting operations. |
| (2) | IS: 1179-1967 (Reaffirmed 2003) | Specification for Equipment for Eye & Face protection during welding. |
| (3) | IS : 1989 (Part 2):1986 (Reaffirmed 1997) | Specification for Leather Safety Boots & Shoes |
| (4) | IS:2925 – 1984 (Reaffirmed 2010) | Specification for Industrial Safety Helmets |
| (5) | IS:3521 : 1999 (Reaffirmed 2002) | Industrial Safety Belts & Harnesses-Specification |
| (6) | IS:3646(Part II) – 1966 (Reaffirmed 2003) | Code of Practice for Interior Illumination |
| (7) | IS:3696 (Part I) – 1987 (Reaffirmed 2002) | Safety Code for Scaffolds and Ladders |
| (8) | IS: 3696(Part 2) : 1991 (Reaffirmed 2002) | Scaffolds and Ladders-Code of Safety |
| (9) | IS:3786 – 1983 (Reaffirmed 2002) | Method for Computation of Frequency and Severity Rates for Industrial Injuries and Classification of Industrial Incidents |
| (10) | IS:4770 : 1991 (Reaffirmed 2006) | Rubber Gloves – Electricals purposes-Specification |
| (11) | IS:4912 : 1978 (Reaffirmed 2002) | Safety Requirements for Floor and Wall Openings, Railings and Toe Boards |
| (12) | IS: 5983 – 1980 (Reaffirmed 2002) | Specification for Eye-Protectors |
| (13) | IS:6519 – 1971 (Reaffirmed 1997) | Code of Practice for Selection, Care and Repair of Safety Footwear |
| (14) | IS:9167:1979 | Specification for Ear-Protectors |
| (15) | IS:6994(Part I)-1973 (Re affirmed 1996) | Specification for Industrial Safety Gloves Leather and Cotton Gloves |
| (16) | IS:8519 – 1977 (Reaffirmed 1983) | Guide for Selection of Industrial Safety Equipment for Body Protection. |
| (17) | IS 11006 : 2011 | Flash Back(Flame Arrestor) Specification |



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| | | |
|------|--|---|
| (18) | IS:8520 – 1977 (Reaffirmed 2002) | Guide for Selection of Industrial Safety Equipment for Eye, Face and Ear Protection. |
| (19) | IS:9473:2002 | Respiratory Protective Devices-Filtering Half Masks to protect against Particles-Specification. |
| (20) | IS:9944:1992 (Reaffirmed 2003) | Natural and Man-made Fiber Rope Slings-Recommendations on Safe working loads. |
| (21) | IS:11057 – 1884 (Reaffirmed 2001) | Specification for Industrial Safety Nets |
| (22) | IS:12254:1993 (Reaffirmed 2002) | Polyvinyl Chloride (PVC) Industrial Boots-Specification |
| (23) | IS:13367(Part 1):1992 (Reaffirmed 2003) | Safe Use of Cranes-Code of Practice |
| (24) | IS:14166:1994 (Reaffirmed 2002) | Respiratory Protective Devices-Full Face Masks Specification |
| (25) | IS:14746 : 1999 (Reaffirmed 2003) | Respiratory Protective Devices-Half Masks and Quarter Masks - Specification |
| (26) | IS : 15397 :2003 (Reaffirmed 2008) | Portable Extinguisher Mechanical Foam Type(Stored Pressure)-Specification |
| (27) | IS: 19011:2002 | Guidelines for Quality and/or Environmental Management Systems Auditing |



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**ANNEXURE 04 : SAFETY FORMATS
&
ANNEXURE 05 : WORK PERMIT FORMATS**

**POWER SECTOR****INSPECTION OF FIRST AID BOX**

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REV NO.: 00

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| | |
|--------------------------|--|
| Name of Site : | |
| Name of Sub-Contractor : | |
| Inspected by : | |
| Date of Inspection : | |

Number of employees on the site: - _____

| Sl.No. | Item | No. Available | Remarks |
|--------|--|---------------|---------|
| 1 | No. of small sterilized dressings | | |
| 2 | No of medium sized sterilized dressings | | |
| 3 | No of large sized sterilized dressings. | | |
| 4 | No of large sized sterilized burn dressings | | |
| 5 | No of (15 grams) packets sterilized cotton wool | | |
| 6 | No of pieces of sterilized eye pads in separate sealed packets. | | |
| 7 | No of roller bandages 10 cm wide. | | |
| 8 | No of roller bandages 5 cm wide. | | |
| 9 | Whether tourniquet available | | |
| 10 | Whether supply of Suitable splints available. | | |
| 11 | No of packets of safety pins. | | |
| 12 | Whether kidney tray available | | |
| 13 | Whether sufficient number of eye wash bottles, filled with distilled water or suitable liquid, clearly indicated by a distinctive sign which shall be visible at all times, available. | | |
| 14 | Whether 4%-xylocaine eye drops, and boric acid eye drops and soda by carbonate eye drops available. | | |
| 15 | Whether (60ml) bottle containing a two percent alcoholic solution of iodine available | | |
| 16 | Whether (two hundred ml) bottle of mercurochrome (2 per cent) solution in water available. | | |

| | | |
|---|------------------------------------|--|
|  | POWER SECTOR | FORMAT NO: HSEP:14-F01 REV NO.: 00 PAGE NO. 02 OF 02 |
| | INSPECTION OF FIRST AID BOX | |

| Sl.No. | Item | No. Available | Remarks |
|--------|--|---------------|---------|
| 17 | Whether 120ml bottle containing Sal volatile having the dose and mode of administration indicated on the label, available. | | |
| 18 | Whether roll of adhesive plaster (6 cmX1 meter) available | | |
| 19 | No of rolls of adhesive plaster (2 cmX1 meter) | | |
| 20 | Whether snake bite lancet available. | | |
| 21 | Whether (30 grams) bottle of potassium permanganate crystals available. | | |
| 22 | Whether a pair scissors available | | |
| 23 | Whether copy of the First-Aid leaflet issued by the Director-General, Factory Advice service and labour Institutes, Government of India available. | | |
| 24 | Whether bottle containing 100 tablets (each of 5 grains) of aspirin available | | |
| 25 | Whether Ointment for burns available | | |
| 26 | Whether bottle of a suitable surgical anti-septic solution available | | |

Signature of Subcontractor's Site I/C:

**POWER SECTOR****HEALTH CHECK UP**

FORMAT NO: HSEP:14-F02

REV NO.: 00

PAGE NO. 1 OF 02

| | |
|--------------------------|--|
| Name of Site : | |
| Name of Sub-Contractor : | |
| Name of Employee : | |

NAME:

| | |
|--|-----------------------------|
| History Of Past Illness | H/O Epilepsy |
| | H/O Drug Allergy |
| | H/O Diabetics/ Hypertension |
| | H/O Unconsciousness |
| Personal History | |
| | |
| EXAMINATION | OBSERVATION |
| <u>General Physical Examination</u> | |
| Height : | |
| Weight : | |
| BMI : | |
| Built And nourishment : | |
| Pallor : | |
| Temperature : | |
| Chest Expansion : | Inspiration Expansion |
| Lymph Node Enlargement : | |
| <u>Ear, Nose, Throat</u> : | |
| Ear : | |
| Nose : | |
| Throat : | |

**POWER SECTOR****HEALTH CHECK UP**


FORMAT NO: HSEP:14-F02

REV NO.: 00

PAGE NO. 2 OF 02

| EXAMINATION | OBSERVATION |
|---|------------------|
| <u>Cardiovascular System Examination :</u> | |
| Inspection : | |
| Palpation : | Pulse BP |
| Auscultation (Heart Sounds) : | |
| <u>Respiratory System :</u> | |
| Inspection : | Respiratory Rate |
| Palpation: | : |
| Percussion : | |
| Auscultation (Breath Sounds) : | |
| <u>Examination of Abdomen :</u> | |
| Inspection : | |
| Palpation : | |
| Auscultation (Bowel Sounds) : | |
| Any Other : | |
| Clinical Impression | |


Signature of the examining doctor

| | | |
|---|-------------------------------|--|
|  | POWER SECTOR | FORMAT NO: HSEP:14-F03 REV NO.: 00 PAGE NO. 01 OF 01 |
| | HSE INDUCTION TRAINING | |

| | |
|--------------------------------------|--|
| Name of Site : | |
| Name of Sub-Contractor : | |
| Date : | |
| Name of Training Co-ordinator | |

| Sl No. | Name | Designation | Organisation | Signature |
|--------|------|-------------|--------------|-----------|
| | | | | |
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Signature of Training co-ordinator :

| | | |
|---|----------------------|--|
|  | POWER SECTOR | FORMAT NO: HSEP:14-F04 REV NO.: 00 PAGE NO. 01 OF 01 |
| | TOOL-BOX TALK | |

| | |
|-------------------------------|--|
| Name of Site : | |
| Sub-Contractors Name : | |
| Date : | |

| Topic | Name of person delivered Tool Box Talk | No. of Participants attended | Remarks |
|-------|--|------------------------------|---------|
| | | | |
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Signature of Site I/C of Subcontractor :

| | | |
|---|---------------------------------------|--|
|  | POWER SECTOR | FORMAT NO: HSEP:14-F06 REV NO.: 00 PAGE NO. 01 OF 01 |
| | PERSONAL PROTECTIVE EQUIPMENTS | |

| | |
|---------------------------------|--|
| Name of Site : | |
| Name of Sub-Contractor : | |
| Inspected by : | |
| Date of Inspection : | |

| Item | Issued this Month | Nos. Issued up to the Month | Percentage of usage at site |
|-------------------|-------------------|-----------------------------|-----------------------------|
| Safety Helmet | | | |
| Safety Shoes | | | |
| Full Body Harness | | | |
| Fall Arrestor | | | |
| Safety Nets | | | |
| Other PPEs. | | | |


Signature of Site I/C of Subcontractor :

| | | |
|---|-------------------------------|--|
|  | POWER SECTOR | FORMAT NO: HSEP:14-F07 REV NO.: 00 PAGE NO. 01 OF 01 |
| | INSPECTION OF T&Ps | |

| | |
|---------------------------------|--|
| Name of Site : | |
| Name of Sub-Contractor : | |
| Date of Inspection : | |

| Sl.No. | Description | Remarks |
|--------|--|----------------------------------|
| 1.0 | Name of equipment | |
| 2.0 | Basic Information of equipment | |
| 2.1 | Specification | |
| 2.2 | Sr. No. of equipment | |
| 2.3 | Make | |
| 2.4 | Year of manufacture | |
| 3.0 | Major repairs / overhauls(Furnish details of work carried out) | Date(s) of major repair/overhaul |
| 3.1 | | |
| 3.2 | | |
| 3.3 | Repairs carried out at site | |
| | | |
| 4.0 | Any performance test conducted | Yes/No |
| 5.0 | Document Submitted | Yes/No |
| 6.0 | Manufacturer's test / guarantee certificate | Available/ Not available |
| 7.0 | Performance test | Done/ Not Done |
| 8.0 | Acceptance Norms | |
| 9.0 | Committee Observations | |
| 10.0 | Date of next review (if accepted) | |

| | |
|--|--|
| Signature-Site Safety Officer (BHEL) | Signature-Subcontractor/ Subcontractor's Safety Officer |
|--|--|

| | | |
|---|---------------------------|--|
|  | POWER SECTOR | FORMAT NO: HSEP:14-F08 REV NO.: 00 PAGE NO. 01 OF 01 |
| | STATUS OF T&Ps | |

| | |
|-------------------------------|--|
| Name of Site | |
| Name of Sub-Contractor | |
| Date of Inspection | |

| Item | Nos. Deployed | Identification No. | Nos. Tested by competent person | Validity of Test Certificate |
|------------------|---------------|--------------------|---------------------------------|------------------------------|
| Winches | | | | |
| Chain Blocks | | | | |
| Wire Rope Slings | | | | |
| Man Cages | | | | |
| D-Shackles | | | | |
| Air Compressors | | | | |
| Crawler Cranes | | | | |
| Mobile Cranes | | | | |
| Hydra Cranes | | | | |
| Others | | | | |

Signature of Site I/C of subcontractor:

**POWER SECTOR****INSPECTION OF CRANES AND WINCHES**

FORMAT NO: HSEP:14-F09

REV NO.: 00

PAGE NO. 01 OF 03

Name of Site :

Name of Sub-Contractor
:

Inspected by :

Date of Inspection:

Crane Reg. No (Make/Model)

Name of Driver/Operator

| Sl.no. | Description | Observation | Measures |
|--------|----------------------------------|-------------|----------|
| 1 | Valid Driving license | | |
| 2 | Hook & Hook Latch | | |
| 3 | Over Hoist limit switch | | |
| 4 | Boom limit switch | | |
| 5 | Boom Angle Indicator | | |
| 6 | Boom limit cutoff switch | | |
| 7 | Condition of Boom | | |
| 8 | Condition of ropes | | |
| 9 | Number of load lines | | |
| 10 | Size and condition of the slings | | |
| 11 | Stability of the cranes | | |
| 12 | Soil Condition | | |
| 13 | Swing Break And Lock | | |
| 14 | Proper Break And Lock | | |
| 15 | Hoist Break And Lock | | |
| 16 | Boom Break And Lock | | |
| 17 | Main Clutch | | |
| 18 | Leakage in Hydraulic Cylinders | | |
| 19 | Out riggers fully extendable | | |
| 20 | Tyre pressure | | |
| 21 | Condition of Battery And Lamps | | |

**POWER SECTOR****INSPECTION OF CRANES AND WINCHES**

FORMAT NO: HSEP:14-F09

REV NO.: 00

PAGE NO. 2 OF 03

| Sl.no. | Description | Observation | Measures |
|--------|--|-------------|----------|
| 22 | Guards of moving and rotating parts | | |
| 23 | Load chart provided | | |
| 24 | Number and position of pedant ropes | | |
| 25 | Reverse Horn | | |
| 26 | Load Test Details | | |
| 27 | Operator's fitness | | |
| 28 | Pollution under control certificate | | |
| 29 | Fire extinguisher of appropriate type. | | |
| 30 | Training of the operator | | |

WINCH

| Sl. No. | Description | YES | NO | NA | Remarks |
|---------|---|-----|----|----|---------|
| 1 | Has the copy of Third Party Inspection certificate been provided in winch machine shed? | | | | |
| 2 | Is winch machine operator experienced enough to operate the winch machine? | | | | |
| 3 | Is the winch machine operated by someone other than the winch machine operator? | | | | |
| 4 | Is there guard provided in all moving parts like wheel and motor's shaft? | | | | |
| 5 | Will it protect against unforeseen operational contingencies? | | | | |
| 6 | Are brakes, clutch and locking arrangement working properly? | | | | |
| 7 | Has it been ensured that the guard does not constitute a hazard by itself? | | | | |
| 8 | Are the cranks and the connecting rods protected by guardrails? | | | | |
| 9 | Is there provision for fully covered shed with wooden plank roof? | | | | |
| | | | | | |

**POWER SECTOR****INSPECTION OF CRANES AND WINCHES**


FORMAT NO: HSEP:14-F09

REV NO.: 00

PAGE NO. 3 OF 03


| Sl. No. | Description | YES | NO | NA | Remarks |
|---------|--|-----|----|----|---------|
| 10 | Is wire rope free from any kind of damage or wear and tear? | | | | |
| 11 | Is split pin provided for the protection of clutch and brake locking arrangement? | | | | |
| 12 | Is pulley inspected by competent person and certified before use? | | | | |
| 13 | Is pulley free from any wear and tear visually? | | | | |
| 14 | Is winch rope barricaded with clipsheet for the protection of rope and person? | | | | |
| 15 | Is the wire rope lubricated by cardium oil? | | | | |
| 16 | Is there any friction in wire rope which may damage the wire rope rather than the rolling parts? | | | | |
| 17 | Is there any oil leakage in the hydraulic system of the winch machine? | | | | |
| 18 | Has it been ensured that the guard will not cause discomfort or inconvenience to operator? | | | | |
| | Total Number of NO: | | | | |
| | Total Number of NA: | | | | |
| | % Compliance : | | | | |

Signature of Site I/C of subcontractor :

| | | |
|---|-------------------------------------|--|
|  | POWER SECTOR | FORMAT NO: HSEP:14-F10 REV NO.: 00 PAGE NO. 01 OF 02 |
| | INSPECTION OF HEIGHT WORKING | |

| | |
|---------------------------------|--|
| Name of Site : | |
| Name of Sub-Contractor : | |
| Inspected by : | |
| Date of Inspection: | |

| Sl. No. | Descriptions | Observation (Yes/No) | Remarks |
|---------|--|----------------------|---------|
| 1 | All the workers have been explained safe work method? | | |
| 2 | An established communication system has been established and explained to the workers. | | |
| 3 | Adequate illumination has been ensured. | | |
| 4 | Work area inspected prior to the start of the work. | | |
| 5 | Area below the work place barricaded, particularly below hot work. | | |
| 6 | Workers provided with bags /box to carry bolts, nuts and hand tools | | |
| 7 | Arrangement for fastening hand tools made. | | |
| 8 | All work platforms ensured to be of adequate strength and ergonomically suitable. | | |
| 9 | Fabricated makeshift arrangements are checked for quality and type of material welding, anchoring etc. | | |
| 10. | Work at more than one elevation at the same segment is restricted. | | |
| | ACCESS/EGRESS | | |
| 1 | Walkways provided with handrail, mid-rail and toe guard? | | |
| 2 | All checkered plates, gratings properly welded/ bolted? | | |
| 3 | Are ladders inspected and they are in good condition? | | |
| 4 | Are ladders spliced? | | |
| 5 | Are ladders properly secured to prevent slipping, sliding or falling? | | |
| 6 | Do side rails extend 36" above top landing? | | |
| 7 | Are built up ladders constructed of sound materials? | | |

| | | |
|---|-------------------------------------|--|
|  | POWER SECTOR | FORMAT NO: HSEP:14-F10 REV NO.: 00 PAGE NO. 02 OF 02 |
| | INSPECTION OF HEIGHT WORKING | |

| Sl. No. | Descriptions | Observation (Yes/No) | Remarks |
|---------|---|-------------------------|---------|
| 8 | Are rugs and cleats not over 12" on center? | | |
| 9 | Metal ladders not used around electrical hazards. | | |
| 10 | Proper maintenance and storage. | | |
| 11 | Ladders placed at right slope. | | |
| 12 | Ladders / staircases welded/ bolted properly. | | |
| 13 | Any obstruction in the stairs. | | |
| 14 | Are landing provided with handrails, knee rails, toe boards etc.? | | |
| 15 | Whether ramp is provided with proper slope. | | |
| 16 | Proper hand rails / guards provided in ramps. | | |
| | Housekeeping | | |
| 1 | Walkways, aisles & all overhead workplaces cleared of loose material. | | |
| 2 | Flammable materials, if any, are cleared. | | |
| 3 | All the de shuttering materials are removed after de shuttering is done. | | |
| 4 | Platforms and walkways free from oil/grease or other slippery material. | | |
| 5 | Collected scrap are brought down or lowered down and not dropped from height. | | |
| | PPE And Safety Devices | | |
| 1 | Use of safety helmet, safety belts ensured for all workers | | |
| 2 | Anchoring points provided at all places of work. | | |
| 3 | Common lifeline provided wherever linear movement at height is required. | | |
| 4 | Safety nets are use wherever required. | | |
| 5 | Proper fall arrest system is deployed at critical workplaces. | | |
| 6 | Crawler boards/Safety system or works on fragile roof are used. | | |

Signature of Site I/C of subcontractor :

**POWER SECTOR****INSPECTION OF WELDING AND GAS
CUTTING**FORMAT NO: HSEP:14-F11
REV NO.: 00
PAGE NO. 1 OF 02


| | |
|------------------------|--|
| Name of Site | |
| Name of Sub-Contractor | |
| Inspected by | |
| Date of Inspection | |

| Welding | | | | |
|---------|---|-------------|--------|---------|
| Sl.no. | Description | Y e s | N o | Remarks |
| 1 | Is electric connection given through 30 mA ELCB/RCCB to welding m/c? | | | |
| 2 | Is electric cable fitted properly in junction box on m/c? | | | |
| 3 | Is electrical cable free from joints? | | | |
| 4 | Are the joints attached firmly & insulated with tape? | | | |
| 5 | Is double earthing given to body of m/c? | | | |
| 6 | Is the physical condition of the m/c good? | | | |
| 7 | Is ON/OFF switch connected to the m/c is working and in good condition? | | | |
| 8 | Are indication lamps on m/c working? | | | |
| 9 | Is the electrode holder in good condition? | | | |
| 10 | Are the cables of the welding m/c lugged & tight properly? | | | |
| 11 | Are return lead connected properly (Rod, Angle, Channels shall not be used) | | | |
| | Total No of NO | | | |
| | Total No of YES | | | |

**POWER SECTOR****INSPECTION OF WELDING AND GAS
CUTTING**FORMAT NO: HSEP:14-F11
REV NO.: 00
PAGE NO. 2 OF 02


| Gas Cutting | | | | |
|-------------|--|-----|----|---------|
| Sl. no | Description | Yes | No | Remarks |
| 1 | Are Cylinders kept on trolleys? | | | |
| 2 | Physical condition of Gas cylinders Good? | | | |
| 3 | Is there Oil/Grease on valve of the cylinder? | | | |
| 4 | Are pressure regulators in good condition? | | | |
| 5 | Condition of hose pipe OK? | | | |
| 6 | Are hose pipe clamped with hose clip? | | | |
| 7 | Is flash back arrestor & NRV fitted on torch both for O2 and LPG cylinder? | | | |
| 8 | Is nozzle of the torch cleaned? | | | |
| | Total Number of NO | | | |
| | Total No of YES | | | |
| | % Compliance | | | |

Signature of Site I/C of subcontractor :

| | | |
|---|--|----------------------------------|
|  | POWER SECTOR | FORMAT NO: HSEP:14-F12 |
| | INSPECTION OF ELECTRICAL INSTALLATION | REV NO.: 00 PAGE NO. 01 OF 02 |


| | |
|-------------------------------|--|
| Name of Site | |
| Name of Sub-Contractor | |
| Inspected by | |
| Date of Inspection: | |

| Sr. No. | Contents | Yes/No | Remarks |
|----------|--|--------|---------|
| A | Cable | | |
| 1. | Whether the condition of cable is checked? | | |
| 2. | Are cables received from other sites checked for insulation resistance before putting them into use? | | |
| 3. | Are all main cables taken either underground / overhead? | | |
| 4. | Are welding cables routed properly above the ground? | | |
| 5. | Are welding and electrical cables overlapping? | | |
| 6. | Is any improper joining of cables/wires prevailing at site? | | |
| B | DBs/SDBs | | |
| 1. | Is earth conductor continued up to DB / SDB? | | |
| 2. | Whether DBs and extension boards are protected from rain / water? | | |
| 3. | Is there any overloading of DBs / SDBs? | | |
| 4. | Are correct / proper fuses & CBs provided at main boards and sub-boards? | | |
| 5. | Is energized wiring in junction boxes, CB panels & similar places covered all times? | | |
| C | ELCB | | |
| 1. | Whether the connections are routed through ELCB? | | |
| 2. | Is ELCB sensitivity maintained at 30 mA? | | |

| | | |
|---|--|--|
|  | POWER SECTOR | FORMAT NO: HSEP:14-F12 REV NO.: 00 PAGE NO. 02 OF 02 |
| | INSPECTION OF ELECTRICAL INSTALLATION | |


| Sr. No. | Contents | Yes/No | Remarks |
|----------|---|--------|---------|
| 3. | Are the ELCB numbered and tested periodically & test results recorded in a logbook countersigned by a competent person? | | |
| D | Grounding | | |
| 1. | Is natural earthing ensured at the source of power (main DB at Generator or Transformer)? | | |
| 2. | Whether the continuity and tightness of the earth conductor are checked? | | |
| 3. | Mention the gauge of the earth conductor used at the site. | | |
| 4. | Mention the value of Earth Resistance. | | |
| E | Electrically operated Machines or Accessories. | | |
| 1. | Whether the plug top is provided everywhere. | | |
| 2. | Are all metal parts of electrical equipment and light fittings / accessories grounded? | | |
| 3. | Is there any shed or cover for welding machines? | | |
| 4. | Are halogen lamps fixed at proper places? | | |
| 5. | Are portable power tools maintained as per norms? | | |
| 6. | Any other information: | | |

Signature of Site I/C of subcontractor :

| | | |
|---|-------------------------------|--|
|  | POWER SECTOR | FORMAT NO: HSEP:14-F13 REV NO.: 00 PAGE NO. 01 OF 01 |
| | INSPECTION OF ELEVATOR | |

| | |
|-------------------------------|--|
| Name of Site | |
| Name of Sub-Contractor | |
| Inspected by | |
| Date of Inspection | |

| Sr. No. | Description | Remarks |
|--|--|--|
| 1.0 | Name of equipment | |
| 2.0 | Basic Information of equipment | |
| 2.1 | Specification | |
| 2.2 | Sr. No. of equipment | |
| 2.3 | Make | |
| 2.4 | Year of manufacture | |
| 3.0 | Major repairs/overhauls(Furnish details of work carried out) | Date(s) of major repair/overhaul |
| 3.1 | | |
| 3.2 | | |
| 3.3 | Repairs carried out at site | |
| 4.0 | Any performance test conducted | Yes/No |
| 5.0 | Document Submitted | Yes/No |
| 6.0 | Manufacturer's test / guarantee certificate | Available/ Not available |
| 7.0 | Performance test | Done/ Not Done |
| 8.0 | Acceptance Norms | |
| 9.0 | Committee Observations | |
| 10.0 | Date of next review (if accepted) | |
| Signature-Subcontractor/ Subcontractor's Safety Officer | | Signature-Site Safety Officer (BHEL) |


| | | |
|---|---------------------------------|---|
|  | POWER SECTOR | FORMAT NO: HSEP:14-F13E REV NO.: 00 PAGE NO. 01 OF 01 |
| | Inspection of Excavation | |

| | |
|---------------------------------|--|
| Name of Site : | |
| Name of Sub-Contractor : | |
| Inspected by : | |
| Date of Inspection : | |

| Sl.no. | Description | Yes | No | Remarks |
|--------|--|-----|----|---------|
| 1 | Precautions taken for Underground Electrical Cable | | | |
| 2 | Precautions taken for Under / Above ground sewer/ Drinking Water Line | | | |
| 3 | Precautions taken for Underground Telecommunication Line | | | |
| 4 | Precautions taken for Underground Product/Utility Line | | | |
| 5 | Precautions taken for Underground Fire Water Line | | | |
| 6 | Shoring / Shuttering / Sheet piling done to prevent collapse of excavation walls. Strength of Excavation wall ensured at all times | | | |
| 7 | Slope Cutting / Angle Maintained | | | |
| 8 | Hard Barricading & Edge Protection provided | | | |
| 9 | Separate Safe Access for Man and Vehicle | | | |
| 10 | Lighting arrangement | | | |
| 11 | Banksman Provided | | | |
| 12 | Required basic PPEs provided | | | |
| 13 | Excavated soil / Construction Material / equipment kept away from the edge. | | | |
| 14 | First aid in attendance. | | | |
| 15 | Other: | | | |
| | | | | |
| | Total No of YES | | | |

Signature-Subcontractor/ Subcontractor's Safety Officer

Signature-Site Safety Officer (BHEL)

| | | |
|---|---------------------|---------------------------------|
|  | POWER SECTOR | FORMAT NO: HSEP:14-F14 |
| | HSE PENALTY | REV NO.: 00 PAGE NO. 1 OF 02 |

Sub: MEMO for Penalty for non-compliances in Safety

Following lapse (tick marked) was observed and penalty is imposed as stated at the bottom of this memo. It is requested that such occurrences be please avoided in future.


Safety Area

| SN | Violation of Safety Norms | Fine (in Rs) |
|-----|--|--|
| 01 | Not Wearing Safety Helmet | 200/- * |
| 02. | Not wearing Safety Belt or not anchoring life line | 500/-* |
| 03 | Not wearing safety shoe | 200/-* |
| 04 | Not keeping gas cylinders vertically | 200/- |
| 05 | Not using flash back arrestors | 100/- |
| 06 | Not wearing gloves | 50/- * |
| 07. | Grinding Without Goggles | 50/- * |
| 08. | Not using 24 V Supply For Internal Work | 500/- |
| 09. | Electrical Plugs Not used for hand Machine | 100/- |
| 10. | Not Slings properly | 200/- |
| 11. | Using Damaged Sling | 200/- |
| 12. | Lifting Cylinders Without Cage | 500/- |
| 13. | Not Using Proper Welding Cable With Lot of Joints And Not Insulated Property. | 200/- |
| 14. | Not Removing Small Scrap From Platforms | 500/- |
| 15. | Gas Cutting Without Taking Proper Precaution or Not Using Sheet Below Gas Cutting | 500/- |
| 16. | Not Maintaining Electric Winches Which are Operated Dangerously | 500/- |
| 17. | Improper Earthing Of Electrical T&P | 500/- |
| 18 | No or improper barricading | 500/- |
| 19. | Activity carried out without Safety work permit (Height work, Lifting activity, Hot work-each person/case) | 1000/- |
| 20. | Incident Resulting in Partial Loss in Earning Capacity | 25,000/- per victim |
| 21. | Fatal Incident Resulting in total loss in Earning Capacity | 1,00,000/- per victim for first instance # |

Legend: -

*: per head. For repeated violation by the same person, the penalty would be double of the previous penalty. Date of "Repeated violation" will be counted from subsequent days.

#: or as deducted by customer, whichever is higher. For repeated fatal incident in the same Unit incremental penalty to be imposed. The subcontractor will pay 2 times the penalty compared to previously paid in case there are repeated cases of fatal incidents under the same subcontractor for the same package in the same unit.

| | | |
|---|---------------------|---|
|  | POWER SECTOR | FORMAT NO: HSEP:14-F14 REV NO.: 00 PAGE NO. 2 OF 02 |
| | HSE PENALTY | |

Details (if any) related to non- compliance (Name of persons, Nature of deficiency, etc.)

Penalty imposed:

1, Rate as per above chart _____

2. No. of Persons/ machine/ event/ labour _____

3. Total Penalty= 1. X 2. = _____


Signature:

Witnessed by: (Sub- Contractor representative) (BHEL Personnel)

Name _____


Name _____

Distribution: 1 Copy: to Sub- contractor,
1 Copy to Site Construction Manager (BHEL)


| | | | |
|---|---|--|----------------------------------|
|  | POWER SECTOR- HQ | | FORMAT NO: HSEP:14-F15 |
| | Incident Report (To be submitted within 24 hours of time of incident) | | REV NO.: 00 PAGE NO. 01 OF 01 |

Type of incident: Fatal/Major/ Minor/Fire/Property Damage/Near-miss


| | | | | | |
|---|--|------------------|--------------|---|-----------------------------------|
| 1 | NAME OF SITE | | 3 | ACTIVITY AREA | |
| 2 | SCOPE OF WORK | | 4 | NAME OF CONTRACTOR | |
| | | | 5 | NAME & DESIGNATION OF BHEL ACTIVITY I/C | |
| 6 | DATE & TIME OF ACCIDENT | | 7 | DATE RESUMED | |
| 8 | NO. OF WORK-DAYS LOST BY VICTIM (If duty not resumed, give estimated figure) | | | | |
| 9 | NO. OF MANHOURS LOST BY OTHERS | | | | |
| 10 | PERSONAL DETAILS OF INJURED AND / OR DETAILS OF MATERIALS / EQUIPMENT / PROPERTY DAMAGED | | | | |
| NAME | | | | NAME OF MATERIAL / EQUIPMENT / PROPERTY | |
| PERIOD OF EMPLOYMENT | | | | | |
| AGE | YRS | SEX | MALE/ FEMALE | ESTIMATED COST | ACTUAL COST |
| MARITAL STATUS | | SINGLE / MARRIED | | | |
| OCCUPATION | | NATURE OF DAMAGE | | | |
| PART OF BODY INJURED | | | | | |
| NATURE OF INJURY | | | | | |
| AGENCY (OBJECT / EQUIPMENT / SUBSTANCE) MOST RESPONSIBLE FOR CAUSING ACCIDENT / INJURY / DAMAGE | | | | | |
| 12 | PERSON (NAME & DESIGNATION) WITH MOST CONTROL OVER AGENCY (OBJECT / EQUIPMENT / SUBSTANCE) CAUSING ACCIDENT INJURY / DAMAGE | | | | |
| 13 | DESCRIBE CLEARLY HOW THE ACCIDENT OCCURRED (USE ADDITIONAL SHEET, IF REQUIRED) | | | | |
| | | | | | |
| ANALYSIS | | | | | |
| 14 | WHAT ACTS AND / OR CONDITIONS CONTRIBUTED MOST DIRECTLY TO THIS ACCIDENT | | | | |
| 15 | WHAT ARE THE BASIC REASON FOR THE EXISTENCE OF THESE ACTS AND / OR CONDITION ? | | | | |
| 16 | WHAT CORRECTIVE ACTIONS HAVE BEEN TAKEN TO PREVENT ACCIDENT RECURRENCE ? | | | | |
| | DATE : | | | | SIGNATURE OF SITE HSE COORDINATOR |
| 17 | COMMENTS OF HEAD / SOX | | | | |
| | DATE: | | | | SIGNATURE OF HEAD/SOX |

| | | |
|--|---|---|
|  | POWER SECTOR | FORMAT NO: HSEP:14-F30 REV NO.: 00 PAGE NO. 01 OF 3 |
| | Format for Monthly HSE Planning & Review | |

| | | | |
|---|--|--|--------------------------------|
| Note: This is a template and can be modified in consultation with BHEL | | | |
| Name of the Site | | Name of the Subcontractor | |
| Scope of Work | | Date | |
| PART- A: PLAN OF HSE ACTIVITIES FOR THE MONTH OF..... | | | PART-B: REVIEW ON |
| SN. | Description of HSE Activity & Formats | Plan & Targets for the month | Review |
| 1 | Availability of First Aid Box at Required Places and Inspection thereof as per Format: Fo1 | Areas 1. | |
| 2 | Health check-up as per Format: Fo2 | Health check-up for Nos 1. New inductees 2. Drivers & Operators 3. Workers in following high risk areas: a. ... | |
| 3 | Induction training of newly joined workers as per Format: Fo3 | Minimum No. of workers: | |
| 4 | Toolbox talks (TBT) conducted before start of work as per Format: Fo4 | Locations of TBTs & No. of workers 1. ... | |
| 5 | PPE usage and issue as per Format: Fo6 | | |
| 6 | Inspection of T&Ps as per Format: Fo7 | List of T&Ps to be inspected 1. | |
| 7 | Identification & Inspection Status of T&Ps as per Format: Fo8 | | |
| 8 | Inspection of Cranes & Winches as per Format: Fog | List of Cranes & Winches & Nos. 1. ... | |
| 9 | Inspection of Height Working as per Format: F10 | Areas: 1. ... | |
| 10 | Inspection of Welding & Gas Cutting operations as per Format: F11 | Areas: 1. ... | |
| 11 | Inspection of Electrical Installations as per Format: F12 | Locations: 1. ... | |
| 12 | Inspection of Elevators (as applicable) as per Format: F13 | Locations: 1. ... | |
| 13 | Inspection of Excavation as per Format: F13E | Locations: 1. ... | |

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|--|---|--|---|
|  | POWER SECTOR | | FORMAT NO: HSEP:14-F30 REV NO.: 00 PAGE NO. 02 OF 3 |
| | Format for Monthly HSE Planning & Review | | |

| SN. | Description of HSE Activity & Formats | Plan & Targets for the month | Review |
|-----|---|--|--------|
| 14 | Job Safety Analysis as per Format F32B | Activities: 1. ... | |
| 15 | Regular Job Specific Training (Re-training) for workers involved in hazardous activities | Topics/ Hazards & No. of workers 1. ... | |
| 16 | Mass housekeeping (HK) drive in work areas | Areas 1. ... | |
| 17 | Vertigo Test of Height workers | Minimum No. of workers: | |
| 18 | Deployment of qualified HSE Officers as per contract | Location(s) & Nos. 1. ... | |
| 19 | Deployment of qualified HSE Stewards as per contract | Location(s) & Nos. 1. ... | |
| 20 | Deployment of Safety tools & Equipment (Safety Nets, Lifelines, Fall arrestors, Man-cages, flashback arrestors, scaffolding etc.) | Tool/ Equipment & Location 1. ... | |
| 21 | Safety Walks by site in charge of agency (4 -Weekly once) | Dates: | |
| 22 | Safety walks by departmental head (8-Weekly twice) | Dates: | |
| 23 | Availability/ deployment of Safety posters/ placards/ signage at strategic locations | Locations: Nos. 1. ... | |
| 24 | Provision of clean drinking water sources for workers | Locations: Nos. 1. ... | |
| 25 | Provision of toilets for workers (separate for male & female workers) | Locations: Nos. 1. ... | |
| 26 | Rest sheds for workers during lunchtime, rain, dust storm etc. | Locations: Nos. 1. ... | |
| 27 | Availability of following in Labor colony | 1. Clean drinking water 2. Toilets 3. Cleanliness & Hygiene 4. Grass cutting, 5. Fogging 6. Electrical Inspection ... | |

|  | POWER SECTOR | | FORMAT NO: HSEP:14-F30 REV NO.: 00 PAGE NO. 03 OF 3 |
|---|--|------------------------------------|---|
| | Format for Monthly HSE Planning & Review | | |
| SN. | Description of HSE Activity & Formats | Plan & Targets for the month | Review |
| 28 | Availability of dust/ waste bins at various locations | Locations: 1. ... | |
| 29 | Availability of Ambulance (individual/ joint) in each shift | Ambulance No. | |
| 30 | Availability of emergency vehicle in each shift | Emergency vehicle | |
| 31 | Deployment/ Availability of tested Fire Extinguishers | Locations & Nos. 1. ... | |
| 32 | Tree plantation | Locations & Nos. 1. ... | |
| 33 | Waste disposal & Scrap Bins | Locations 1. ... | |
| 34 | Illumination checks | Locations 1. ... | |
| 35 | Safety award function: 1. Display of good practices Award presentation | Minimum 1 per month | |
| 36 | Submission of Daily Reports as per Format No.F31A | Daily Reports (Night & Day Shifts) | |

| PLAN | | REVIEW | |
|--|--|--|--|
| <u>Agency</u> Name: Sign: Date: | <u>BHEL</u> Name: Sign: Date: | <u>Agency</u> Name: Sign: Date: | <u>BHEL</u> Name: Sign: Date: |



POWER SECTOR

Job Safety Analysis Format

FORMAT NO: HSEP:14-F32B

REV NO.: 00

PAGE NO. 01 OF 1

| | |
|---------------------------|--|
| Name of the Site | |
| Name of the Subcontractor | |
| Activity, Area | |

| HAZARDS | | | | PRECAUTIONS | |
|---------|--|--|--|-------------|--|
| | | | | | |
| | | | | | |
| | | | | | |

| | | | | | | |
|--------|------------------------------|--|------------------------------------|--|---------------------------|--|
| (Name) | Submitted By (Agency HSE) | | Reviewed By (BHEL Execution) | | Approved By (BHEL HSE) | |
| (Sign) | | | | | | |
| (Date) | | | | | | |

**POWER SECTOR- HQ**

FORMAT NO: HSEP:14-F33

REV NO.: 00

PAGE NO. 01 OF 3

Checklist for Evaluation of HSE Performance

| SL | Parameter for Measurement | M/O | Wt | Supporting Documents |
|------|--|-----|----|--|
| 1a | Induction training for new workers conducted through audio-visual medium & documented ? | M | 1 | Induction Training Records |
| 1b | Tool box talk conducted regularly as per plan, and documented? | M | 1 | Toolbox Talk Records |
| 1c | Contractor in charge and safety in charge attended safety meetings? | M | 2 | Minutes of Meeting |
| 1d | Whether observations in safety meetings are complied before next meeting? | M | 2 | -do- |
| 1e | Preparation and submission of Monthly HSE report within stipulated time | M | 1 | Report submission date |
| 1f | Preparation and submission of Incident/near-miss report and RCA Report (as applicable) within stipulated time | M | 1 | Incident/ Near Miss Records |
| 1g | Carrying out Inspections and submission of Inspection reports within stipulated time | M | 1 | Inspection Records |
| 1h | Regular Job Specific Training ensured for High Risk Workers (through audio-visual medium) as per plan | M | 1 | Training & Attendance Records |
| 2a | Whether the contractor is registered under BOCW | M | 2 | BOCW Registration Certificate |
| 2b | Availability of Qualified safety officer (1 for every 500 labour) | M | 2 | Safety Officer qualification & experience records |
| 2c | Availability of Qualified safety supervisor (1 for every 100 labour) | M | 2 | Safety Officer qualification & experience records |
| 2d | All the workers are provided and using safety helmets and safety shoes/gum boots | M | 2 | PPE Issue Records, Inspection/ non-conformity records |
| 2e | Housekeeping done on regular basis and scrap removal at site | M | 1 | Housekeeping records, Inspection/ non-conformity records |
| 2f | Usage of Goggles/Face shields and Hand gloves for gas cutter and grinders | | 1 | PPE Issue Records, Inspection/ non-conformity records |
| 2g | Wall openings & floor openings are guarded? | | 1 | Inspection/ non-conformity records |
| 2h | Adequate illumination provided in all working area? | | 1 | Inspection/ non-conformity records |
| 2i | Safety posters, sign boards and emergency contact numbers in all prominent location are displayed? | | 1 | Inspection/ non-conformity records |
| 2j | Availability of automatic reverse horns, Main horn, hook latches for Vehicles, mobile cranes, Hydras | | 1 | Inspection/ non-conformity records |
| 2k | Ban of carrying mobile phones to work place is implemented for workers | | 1 | Inspection/ non-conformity records |
| 2l | Availability of Tags & Inspection Certificates for Cranes of all capacities | | 1 | Master T&P List with internal & external test details |
| 2l.2 | Availability of Tags & Inspection Certificates for Winches of all capacities | | 1 | Master T&P List with internal & external test details |
| 2l.3 | Availability of Tags & Inspection Certificates, color coding for Chain pulley blocks | | 1 | Master T&P List with internal & external test details |
| 2l.4 | Availability of Tags & Inspection Certificates for Vehicles - Trailers, Dozers, Dumpers, Excavators. Mixers etc. | | 1 | Master T&P List with internal & external test details |
| 2l.5 | Availability of Tags & Inspection Certificates for Welding machines, grinders, Drilling machines, etc. | | 1 | Master T&P List with internal & external test details |
| 2l.6 | Availability of Tags & Inspection Certificates, colour coding for Wire rope slings etc. | | 1 | Master T&P List with internal & external test details |
| 2l.7 | Availability of Tags & Inspection Certificates for Batching plants | | 1 | Master T&P List with internal & external test details |



POWER SECTOR- HQ


FORMAT NO: HSEP:14-F33

REV NO.: 00

PAGE NO. 02 OF 3

Checklist for Evaluation of HSE Performance

| SL | Parameter for Measurement | M/ O | Wt | Supporting Documents |
|-------|---|---------|----|---|
| 2m.1 | Use of Lifting Permit as per requirement | | 1 | Permit Records |
| 2m.2 | Use of Height Permit as per requirement | | 1 | Permit Records |
| 2m.3 | Use of Hot Work Permit as per requirement | | 1 | Permit Records |
| 2m.4 | Use of Excavation permit as per requirement | | 1 | Permit Records |
| 2m.5 | Use of Confined space work permit as per requirement | | 1 | Permit Records |
| 2m.6 | Use of Grating removal and safety net removal permit as per requirement | | 1 | Permit Records |
| 2m.7 | Use of Lockout-Tag out permit as per requirement | | 1 | Permit Records |
| 2m.8 | Use of Radiography permit as per requirement | | 1 | Permit Records |
| 2m.9 | Use of Night/ Holiday Work Permit as per requirement | | 1 | Permit Records |
| 2m.10 | Use of Any other Applicable Permit as per requirement | | 1 | Permit Records |
| 3a | Material safety data sheet(MSDS) available for all chemicals and displayed in usage and storage area? | | 1 | Inspection/ non-conformity records |
| 3b | Spillages of oil/concrete and other chemical is controlled and cleaned by proper method in case of spill? | | 1 | Inspection/ non-conformity records |
| 3c | Availability of adequate number of urinals in workplace and in elevations and maintained | M | 1 | |
| 3d | Availability of rest rooms for workers at site | M | 1 | |
| 3e | Availability of Drinking water facility at work spot | | 1 | |
| 3f | Hygienic Labour colony is provided for workers. | | 1 | |
| 4a | Is heavy/complex critical lifting permit obtained for heavy, complex materials before handling/erection activity? | | 1 | Work Permit records |
| 4b | Whether area below lifting activities barricaded | | 1 | Inspection/ non-conformity records |
| 4c | Availability of experienced rigging foreman | | 1 | Experience details of rigging foreman |
| 4d | Is agency is following proper storage and handling procedure as per manufacturer standard for all hazardous material? | | 1 | Procedure for storage & handling |
| 4e | Are oxygen and acetylene cylinders are transported to work place from storage area in trolleys | | 1 | |
| 5a | Whether all deep excavation has been protected by barrier | | 1 | Inspection/ non-conformity records |
| 5b | Sloping/benching & shoring provided for excavation as per requirement? | | 1 | -do- |
| 5c | Proper access and egress provided for excavations? | | 1 | -do- |
| 5d | Blasting is done in controlled manner? | | 2 | -do- |
| 6a | Whether Electrical booth is equipped with Co ₂ fire extinguishers and fire buckets filled with sand? | | 2 | Inspection/ non-conformity records |
| 6b | Availability of Illumination lamp in electric booth? | | 1 | -do- |
| 6c | whether Caution Boards have been displayed? | | 1 | -do- |
| 6d | Usage of Metal Plug top for all hand power tools ? | | 1 | -do- |
| 6e | Usage of Insulated welding cables. | | 1 | -do- |
| 6f | Electrical Booth/Distribution Board to be covered by proper Canopy. | | 1 | -do- |
| 6g | Availability of functional & individual 30ma ELCB / RCCB and MCB for protection and conducting periodical check-up? | | 1 | -do- |
| 6h | Double earthing for panel boards and all machinery & proper earth pit with regular inspection available? | | 1 | -do- |
| 6i | Whether Electrician is qualified and experienced | | 1 | Qualification & Experience records of electrician |
| 6j | Availability and usage of Rubber hand gloves by electrician? | | 1 | Inspection/ non-conformity records |

| | | |
|--|--|---|
|  | POWER SECTOR- HQ | FORMAT NO: HSEP:14-F33 REV NO.: 00 PAGE NO. 03 OF 3 |
| | Checklist for Evaluation of HSE Performance | |

| SL | Parameter for Measurement | M/O | Wt | Supporting Documents |
|-----|---|-----|----|---|
| 7a | Whether Scaffolding pipes made with steel or aluminum, are being used and checked periodically by experienced/ certified scaffolder? | | 2 | Inspection/ non-conformity records |
| 7b | 8mm Stainless Steel wire rope with plastic cladding is provided for life line (Vertical / Horizontal) during height work? | | 2 | -do- |
| 7c | Availability of emergency lighting in case of power failure | | 1 | -do- |
| 7d | Whether all the openings are covered with Safety Nets made of fire proof Nylon? | | 1 | -do- |
| 7e | Whether MS pipe rails around staircases & platforms in usage are provided with top, middle rails and toe guard ? | | 1 | -do- |
| 7f | Whether Ladder with vertical life line /Fall arrestor is available to climb? | | 1 | -do- |
| 7g | Whether all workers deployed for working at height have been issued height pass after undergoing vertigo test? | | 1 | Height Pass records |
| 7h | Whether all workers deployed for height work / climbing ladder are provided and using Double lanyard safety belt? | | 1 | PPE Issue records, inspection/ non-conformity reports |
| 7i | Is all hand tools/Small material used by height workers is tied firmly to prevent fall? | | 1 | -do- |
| 8a | Flash back arrestors for all gas cutting sets is available on Torch side and cylinder side | | 1 | Inspection/ non-conformity records |
| 8b | Oxygen/Acetylene/LPG cylinders not in use have caps in place and stored separately? | | 1 | -do- |
| 8c | Availability of Face screen, Hand gloves, and Apron, for welders | | 1 | -do- |
| 8d | Protection from falling hot molten metal during metal cutting / welding at height by providing GI sheet below the cutting area especially in fire prone areas | | 1 | -do- |
| 9a | Pre-employment medical check-up done for all workers and submitted? | | 1 | Medical check records |
| 9b | Availability of first aid center, with MBBS doctor(Own or Sharing basis) | M | 2 | Attendance records |
| 9c | Availability of Ambulance facility 24 hours (Own or sharing basis) | M | 2 | -do- |
| 9d | Is First aid trained personnel's are available and their names are displayed at site? | M | 1 | -do- |
| 9e | Availability of Emergency vehicle at site | | 1 | |
| 9f | Periodical medical check-up is conducted for all the workers and submitted? | | 1 | Medical check records |
| 9g | Availability of sufficient number of first aid box as per standard list and maintaining record | | 1 | Inspection records |
| 10a | Availability of Fire extinguishers, buckets at all vulnerable points | | 2 | Fire extinguisher records |
| 10b | Periodic fire mock drill conducted? | | 1 | Fire, Mock drill records |
| 10c | Are all flammable materials are stored separately? | | 1 | |
| 10d | Periodic grass cutting is done in material storage area? | | 1 | |
| 10e | Availability of 24V DC lighting in confined space work area | | 1 | |
| 10f | Availability of exhaust fan in confined space work area | | 1 | |

Note:

- **M: Mandatory; O: Optional.** Points other than mandatory can be excluded with appropriate justification (scope etc.) by BHEL
- Additionally: 30 Marks for each Fatal Accident and 10 mark for each major accident shall be deducted.



SAFETY WORK CLEARANCE

Permit no. _____

Project: _____

Emergency Contact Nos: _____

Subcontractor: _____

BURNING/WELDING /HOT WORK PERMIT

Area : _____ Date: _____ Time: _____

Name of Site Engineer (Permit Requesting Authority): _____ Sign: _____

Name of Work Performing Contractor: _____

Name of Package In charge: _____ Sign: _____ Date: _____

Description of Work: _____

Work Execution Date: _____ Time Valid from: _____ to _____

The above signing person(s) will be responsible to ensure that the above described work will be done under all the safety precautions mentioned on the permit to work.

The following precautions are to be taken:

| No. | Item | Yes | Not required |
|-----|--|-----|--------------|
| 1. | Proper Access/Exit available | | |
| 2. | Proper ventilation and /or lighting provided. | | |
| 3. | Proper and safe scaffolding, platform, ladder provided. | | |
| 4. | Welding machine located in a clean and dry area. | | |
| 5. | Welding machine grounded at the equipment and proper leakage current protection device (ELCB) provided for welding machine. | | |
| 6. | Emergency STOP buttons are in working condition. Welder /Helper knows how to operate it. | | |
| 7. | Welding machine input/output cables, welding holder and weld return clamp (Holder) are insulated and in good condition. | | |
| 8. | Welder & Fitter trained to connect ground/work return clamps (Holder) to work place prior to energization of welding machine. | | |
| 9. | Gas cylinders are stacked vertically and not below the welding / cutting area. Regulator key is available with cylinder. | | |
| 10. | Pressure gauges/Flash back arrestor provided and in working condition. | | |
| 11. | Personal Protective equipment Minimum applicable: safety helmet, safety goggles, welding helmet, safety shoes, leather gloves, long sleeve and nose mask -provided | | |
| 12. | In case of pits, water removed from the pit and wood/rubber insulation provided. | | |
| 13. | Safety signboards are in place. | | |
| 14. | Adequate and Suitable nos. of fire fighting extinguisher provided. | | |
| 15. | Nearby combustible material removed. Housekeeping done. | | |
| 16. | Other | | |

Name of Contractor Safety Officer: _____ Sign: _____ Date: _____ Time: _____

Reviewed and approved by BHEL Site Engineer (Permit Issuing Authority):

Name: _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Safety Representative: _____ Sign: _____

I understand the precaution to be taken as described above and as per project requirement and hereby confirm that work will be executed under my supervision by following all precaution and Safety Rules.

Name of Work Performing Authority: _____ **Sign:** _____ **Date:** _____ **Time:** _____**Permit Cancellation:**

I hereby declare that the work is complete, all workers under my control have been withdrawn and the site restored to safe tidy condition.

Name of Work performing Authority: _____ Sign: _____ Date: _____ Time: _____

Name of Site Engr. (Permit Requesting Authority): _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Site Engr. (Permit Issuing Authority): _____ Sign: _____ Date: _____ Time: _____

(This permit is valid only for the date it is issued)

Original at BHEL site

Second Copy – BHEL SAFETY

Third Copy : Contractor



| | | |
|------------------------------|--|------------------------------|
| SAFETY WORK CLEARANCE | | Permit no. _____ |
| Project: _____ | | Emergency Contact Nos: _____ |
| Subcontractor: _____ | | |

LIFTING ACTIVITY PERMIT

Area : _____ Date: _____ Time: _____

Name of Site Engineer (Permit Requesting Authority): _____ Sign: _____ Name of Work

Performing Contractor: _____

Name of Package In charge: _____ Sign: _____ Date: _____

Description of Work: _____

Work Execution Date: _____ Time Valid from: _____ to _____

The above signing person(s) will be responsible to ensure that the above described work will be done under all the safety precautions mentioned on the permit to work.

The following precautions are to be taken:

| No. | Item | Yes | Not required |
|-----|---|-----|--------------|
| 1. | Crane used for lifting activity tested, certified and approved for rated lifting | | |
| 2. | All lifting tackles, gears/appliances are tested and certified for lifting works. | | |
| 3. | Crane operator is trained and competent for lifting operation. | | |
| 4. | Lifting sling/ belt is protected against sharp edge of the jobs to be lifted. | | |
| 5. | Access and exit marked and without obstruction. | | |
| 6. | Lifting arrangement adequate. | | |
| 7. | Unwanted rubbish material removed from work platform. | | |
| 8. | Minimum 2 guidelines have been provided for balancing and guiding jobs to be lifted. | | |
| 9. | Periphery area of crane booms as well as lifting job is barricaded and unauthorized/no-entry sign board posted. | | |
| 10. | Rigger and signal man is trained and competent for lifting work. | | |
| 11. | No lifting activity to be carried out during lightening, heavy wind/rain. | | |
| 12. | If scaffolding to be used during lift, scaffolding with valid tag available for use. | | |
| 13. | Double lanyards safety harness/belt checked and in working condition. | | |
| 14. | Safety shoes (non-slip), helmet with chin strap available with employees. | | |
| 15. | Others. | | |

Name of Contractor Safety Officer: _____ Sign: _____ Date: _____ Time: _____

Reviewed and approved by BHEL Site Engineer (Permit Issuing Authority):

Name: _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Safety Representative: _____ Sign: _____

I understand the precaution to be taken as described above and as per project requirement and hereby confirm that work will be executed under my supervision by following all precaution and Safety Rules.

Name of Work Performing Authority: _____ **Sign:** _____ **Date:** _____ **Time:** _____

Permit Cancellation:

I hereby declare that the work is complete, all workers under my control have been withdrawn and the site restored to safe tidy condition.

Name of Work performing Authority: _____ Sign: _____ Date: _____ Time: _____

Name of Site Engr. (Permit Requesting Authority): _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Site Engr. (Permit Issuing Authority): _____ Sign: _____ Date: _____ Time: _____

(This permit is valid only for the date it is issued)

| | | |
|-----------------------|---------------------------|-------------------------|
| Original at BHEL site | Second Copy – BHEL SAFETY | Third Copy : Contractor |
|-----------------------|---------------------------|-------------------------|



| | | |
|------------------------------|--|------------------------------|
| SAFETY WORK CLEARANCE | | Permit no. _____ |
| Project: _____ | | Emergency Contact Nos: _____ |
| Subcontractor: _____ | | |

WORKING AT HEIGHT PERMIT

Area : _____ Date: _____ Time: _____

Name of Site Engineer (Permit Requesting Authority): _____ Sign: _____ Name of Work

Performing Contractor: _____

Name of Package In charge: _____ Sign: _____ Date: _____

Description of Work: _____

Work Execution Date: _____ Time Valid from: _____ to _____

The above signing person(s) will be responsible to ensure that the above described work will be done under all the safety precautions mentioned on the permit to work.

The following precautions are to be taken:

| No. | Item | Yes | Not required |
|-----|--|-----|--------------|
| 1. | All workers on job are medically fit for working at height (Person should not have vertigo) | | |
| 2. | Scaffolding with valid tag available for use | | |
| 3. | Safety harness with life line support/ fall arrester are checked and in working condition | | |
| 4. | Safety shoes (non-slip), Helmet with chin strip available with employees | | |
| 5. | Safety nets are provided as per design and provided 25 ft. below working area & extending 8 ft beyond. | | |
| 6. | Horizontal life lines are provided to cater to design specification of 2300kg per person. | | |
| 7. | Ladders have been inspected and provided as per BHEL standard/contract. | | |
| 8. | All lifting / tightening tools, hand tools/equipment checked and in good condition | | |
| 9. | Access and exit marked and without obstruction. | | |
| 10. | Lighting arrangement adequate. | | |
| 11. | Unwanted and rubbish material removed from working platform. | | |
| 12. | Electrical cable, welding Hose/Compressed air hose properly secured and lay down without obstruction. | | |
| 13. | Signboards provided on working platforms | | |
| 14. | Hazards in the vicinity are identified and communicated to the worker. | | |
| 15. | Other | | |

Name of Contractor Safety Officer: _____ Sign: _____ Date: _____ Time: _____

Reviewed and approved by BHEL Site Engineer (Permit Issuing Authority):

Name: _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Safety Representative: _____ Sign: _____

I understand the precaution to be taken as described above and as per project requirement and hereby confirm that work will be executed under my supervision by following all precaution and Safety Rules.

Name of Work Performing Authority: _____ **Sign:** _____ **Date:** _____ **Time:** _____

Permit Cancellation:

I hereby declare that the work is complete, all workers under my control have been withdrawn and the site restored to safe tidy condition.


Name of Work performing Authority: _____ Sign: _____ Date: _____ Time: _____

Name of Site Engr. (Permit Requesting Authority): _____ Sign: _____ Date: _____ Time: _____

Name of BHEL Site Engr. (Permit Issuing Authority): _____ Sign: _____ Date: _____ Time: _____

(This permit is valid only for the date it is issued)

| | | |
|-----------------------|---------------------------|-------------------------|
| Original at BHEL site | Second Copy – BHEL SAFETY | Third Copy : Contractor |
|-----------------------|---------------------------|-------------------------|

| | | |
|--|---|------------------------------|
|  | HEALTH, SAFETY AND ENVIRONMENT PLAN FOR SITE OPERATION by SUBCONTRACTORS | Doc no.: HSEP: 14 REV: 01 |
| | POWER SECTOR | Date: 17.01.2020 |
| | | |

REVISION HISTORY SHEET

| Date | Revision No. | Details of Changes | Reason | Prepared | Reviewed | Approved |
|------------|--------------|---|---|--|------------------------------------|--|
| 12.08.2014 | 00 | First Issue | First Issue | S. B. Jayant, Dy Manager- FQA & Safety | A. K. Sinha, GM-FQA & Safety | Anuj Bhatnagar, ED-FQA & Safety |
| 17.01.2020 | 01 | Formats added: HSEP:14-F30 – Monthly HSE Planning & Review (Page 11, Clause 8.0 - updated) HSEP:14-F13E-Excavation Inspection Format (part of F30)) HSEP:14-F32B – Job Safety Analysis Format (part of F30) HSEP:14-F31A – Daily HSE Reporting (Page 18, Clause 10.3 – added) HSEP:14-F33 – HSE Performance Evaluation (Page 31, Clause 13 – revised) | IOM No. PSHQHSE/M ONREP/02 Dated 08-Jan-2020 | Rohit Kumar | Santosh Nair, GM (MSX & HSE) | |

