SECTION : SPECIAL CONDITIONS OF CONTRACT

1.0 GENERAL

1.1 Special Conditions of Contract shall be read in Conjunction with the General conditions of Contract, specification of work, Drawings and any other documents forming part of this Contract wherever the context so requires.

1.2 Notwithstanding the sub-division of the documents into these separate sections and volumes, every part of each shall be deemed to be supplementary to and complementary of every other part and shall be read with and into the Contract so far as it may be practicable to do so.

1.3 Where any portion of the General Condition of Contract is repugnant to or at variance with any provisions of the Special Conditions of Contract, unless a different intention appears, the provisions of the special Conditions of Contract shall be deemed to over- ride the provisions of the General Conditions of Contract and shall to the extent of such repugnancy, or variations, prevail.

1.4 Wherever it is mentioned in the specifications that the Contractor shall perform certain work or provide certain facilities, it is understood that the Contractor shall do so at his own cost and the value of contract shall be deemed to have included cost of such performance and provisions, so mentioned.

1.5 The materials, design, and workmanship shall satisfy the relevant Indian Standards, the Job Specifications contained herein and Codes referred to. Where the job specification stipulate requirements in addition to those contained in the standard codes and specifications, these additional requirements shall also be satisfied.

1.6 In case of an irreconcilable conflict between Indian or other applicable standards, General Conditions of Contract, Special Conditions of Contract, Specifications, Drawings or Schedule of Rates, the following shall prevail to the extent of such irreconcilable conflict in order of precedence :

i) Letter of Acceptance along with Statement of Agreed Variations.
ii) Fax / Letter of Intent / Fax of Acceptance.
iii) Schedule of Rates as enclosures to Letter of Acceptance.
iv) Job / Particular Specifications.
v) Drawings
vi) Technical / Material Specifications.
vii) Instruction to Bidders
viii) Special Conditions of Contract.
ix) General Conditions of Contract.
x) Indian Standards
xi) Other applicable Standards

1.7 It will be the Contractor's responsibility to bring to the notice of Engineer-in-Charge any irreconcilable conflict in the contract documents before starting the work (s) or making the supply with reference which the conflict exists.

1.8 In the absence of any Specifications covering any material, design of work (s) the same shall be performed / supplies / executed in accordance with Standard Engineering Practice as per the instructions / directions of the Engineer-in-Charge, which will be binding on the Contractor.

2.0 SCOPE OF WORK

The scope of work covered Steel line connectivity from main line to compressor & DRS at A. R. Filling Station, SIDCUL, Haridwar, executed by Laying Contractor pertaining to Mechanical, Civil, Temporary Cathodic Protection, testing, pre-commissioning & commissioning, final documentation etc. of pipeline system.

3.0 TIME SCHEDULE

3.1 Contract period 1 year from the date of LOA/LOI.

3.2 Contract completion 6 month from LOA/LOI/EIC instruction.

4.0 DRAWINGS AND DOCUMENTS

4.1 The drawings and documents to be submitted by the Contractor to Employer/Consultant after award of the work as per the requirements enlisted in the bidding document shall be for Employer/Consultant's review, information and record. The Contractor shall ensure that drawings and documents submitted to Employer/Consultant are accompanied by relevant calculations, data as required and essential for review of the document/ drawings. HNGPL shall review the drawings/ documents within two weeks from the date of submission provided the same are accompanied by relevant calculations, data as required and essential for review.

4.2 Copies of all detailed working drawing relating to the works shall be kept at the contractors' office at the site and shall be made available to the Engineer-in-charge/ Employer/Consultant at any time during execution of the contract. However no extra claim what so ever shall be entertained for any variation in the "approved/issued for construction drawings" and "tender drawings" regarding any changes/units unless otherwise agreed.

5.0 COMPLIANCE WITH LAWS

5.1 The Contractor shall abide by all applicable rules, regulations, statutes, laws governing the performance of works in India, including but not limited to the following:

i) Contract Labour (Regulation & Abolition) Act 1970 & the centre rules, 1971framed there under.
ii) Payment of Wages Act.
iii) Minimum Wages Act.
iv) Employer's Liability Act.
v) Factory Act.
vi) Apprentices Act.
vii) Workman's Compensation Act.
viii) Industrial Dispute Act.
ix) Environment Protection Act.
x) Wild life Act.
xi) Maritime Act.
xii) Any other Statute, Act, Law as may be applicable.
xiii) PNGRB Act.

10.0 MOBILIZATION ADVANCE

10.1 30 Days from the date of LOA/LOI/EIC instruction.

11.0 CHANGE ORDERS/ EXTRA WORKS/ DEVIATIONS

11.1 A change order will be initiated in case:

i) The Employer/Consultant directs the Contractor to include any addition to the scope of work not covered under this contract or delete any Section of the scope of the work under the contract.

ii) Contractor requests to delete any part of the work which will not adversely affect the operational capabilities of the project and if agreed by the Employer/Consultant and for which cost and time benefits shall be passed on to the Employer/Consultant.

11.2 Any changes required by the Employer/Consultant before giving their approval to detailed procedure or any other document relating to material procurement, layout plans etc for complying with the requirements of bidding document shall not be construed to be a change in the scope of work under the contract.

11.3 Any change order as above comprising an alteration which involves a change in the cost of the works (which sort of alteration is hereinafter called a "Variation") shall have impact on the contract value that shall be dealt towards end of contract. All change orders shall be approved by the EIC.

12.0 CONSTRUCTION OF PIPE LINE ALIGNMENT AND PERMITS:

12.1 Contractor shall carry out construction work with in the width as made available to him. Where the pipeline route passes through forest/plantation areas contractor shall clear only the minimum width required for laying the pipeline as per Company's approved procedure for pipeline construction. Felling of trees/plants shall be minimized. Damage to any obstruction, temporary/permanent structure, boundary walls etc. within pipe line alignment shall be repaired and restored and cost of repairs/restoration shall be to Contractor's account.

12.2 The Contractor must ensure that during laying of the pipeline minimum damage occurs to the land. The land has to be restored to original condition. All construction activities shall be in accordance with the local Government regulations and shall be performed by the competent and qualified persons for providing adequate protection to the general public, livestock, wild life, forest, power lines, buildings etc. in the vicinity of the pipeline.

12.3 Due measures for working within deep trench must be taken including necessary safety precautions for the workers. During pipeline construction, measures shall be adopted in order to minimize the impact of pipeline construction activities on the environment. During ROU clearance, the vegetation shall be cut off at ground level leaving the roots intact. Only stumps and roots directly over the trench shall be removed for pipeline Installation.

12.4 In case of any detour from the acquired ROU due to constructability problems or otherwise, contractor may be permitted to do so after approval from CA /

Company. All immediate measures for taking the land and compensations to land owner(s) shall be to Contractor's account. All statutory payments shall be paid/ reimbursed by Company. However, such activity shall not affect the construction schedule and overall completion period. In case of local detour due to non availability of Legal ROU, contractor has to negotiate and arrange the ROU for laying of pipe line without affecting the schedule. Compensation payable under P&MP act shall be paid by HNGPL. All other costs if any shall be to the contractors account. Company shall proceed with regular notifications etc. in due course for the detoured portion.

12.5 Clean-up and restoration of ROU and other conveniences like road, rail, canals, cultivable land, water facilities, irrigation facilities, boundary wall/fence etc. to original condition as per specification and drawings to the entire satisfaction of Company and/or Landowner/Cultivator/ Authorities having jurisdiction over the same, including disposal of surplus excavated soil and other construction materials to a location identified by Contractor approved by local authority without causing any disturbance to environment and to the entire satisfaction of Company.

12.6 Contractor shall arrange necessary clearance from the concerned authorities/land owners to the effect that ROU/ ROW has been restored back to original condition. Contractor shall carry out joint survey with representative of Competent Authority (CA) and will obtain clearance in writing from CA that ROU has been restored to original condition. Necessary clearance from statutory authority / NOC for restoring the ROU to original condition shall be in Contractor's scope. However, if the owner does not give the NOC, payment may be released to the contractor if the restoration is done by Engineer-in-charge as per the tender specifications.

12.7 Local state Government may impose Taxes/ Duties/ royalty etc. towards the excavation and filling of earth for the pipe line and terminals works. It is the responsibility of contractor to make such payments without any cost implications to HNGPL.

12.8 Contractor is required to maintain a hindrance register. All hindrances encountered in the execution needs to be logged in this register and shall be jointly signed.

13.0 CONSTRUCTION EQUIPMENT AND ORGANIZATION

13.1 CONSTRUCTION EQUIPMENT

13.1.1 Bidder shall meet the requirement regarding deployment of minimum construction equipments as specified in the Bidding Document at **Annexure-9**. Bidder shall also submit their compliance for deployment of equipments as above along with the bid.

13.2 MANPOWER DEPLOYMENT

13.2.1 Bidder shall meet the requirement regarding deployment of minimum construction manpower for individual Section as specified in the bidding document at **Annexure- 10**. Bidders who intend to quote for more than one Section shall meet the requirement equal to the sum of the construction manpower specified for

individual Section. Bidder shall also submit their compliance for deployment of manpower along with the bid.

13.2.2 Schedule of Labor & Equipment Rates

Hiring / Recovery Rate for Deployment of Manpower attached as **Annexure-11** to SCC shall be used for analyzing rates for extra items and recovery for non-deployment of manpower.

13.2.3 Equipment Hiring / Recovery Rates attached as **Annexure-12** to SCC shall be used for analysing rates for extra items and recovery for non-deployment of equipment.

14.0 MECHANISED CONSTRUCTION

14.1 Contractor shall without prejudice to his overall responsibility to execute and complete the work as per specifications and time schedule adopt as far as practicable, mechanized construction techniques for major site activities. Contractor agrees that he will deploy therequired numbers and types of the plant & machinery applicable for different activitiesin consultation with the Engineer-in-charge during execution of works.

14.2 Contractor further agrees that Contract price is inclusive of all the associated costs, which he may incur for actual mobilization, required in respect of use of mechanised construction techniques and that the Employer/Consultant/Consultant in this regard shall entertain no claim whatsoever.

15.0 GENERAL GUIDELINES DURING AND BEFORE ERECTION

15.1 Contractor shall be responsible for organising the lifting of the equipment in the proper sequence, that orderly progress of the work is ensured and access routes for erecting the other equipments are kept open.

15.2 Orientation of all foundation, elevations, lengths and disposition of anchor bolts and diameter of holes in the supports saddles shall be checked by contractor, well in advance.Minor rectifications including chipping of foundations as the case may be shall be carried out at no extra cost by the contractor after obtaining prior approval of the Engineer-in-Charge. The Contractor shall also be provided with the necessary structural drawings and piping layouts etc., wherever required for reference. During the structural member need to be dismantled, to facilitate the equipment erection, same shall be done by the contractor after ensuring proper stability of main structure with prior permission of Engineer-in-Charge. All such dismantled members shall be put in position back after the completion of equipment erection to satisfaction of Engineer-in- Charge.

15.3 During the performance of the work the Contractor at his own cost, shall keep structures, materials and equipment adequately braced by guys, struts or otherwise approved means which shall be supplied and installed by the Contractor as required till the installation work is satisfactorily completed. Such guys, shoring, bracing, strutting, planking supports etc. shall not interfere with the work of other agencies and shall not damage or cause distortion to other works executed by him

or other agencies.

15.4 Manufacturer's recommendations and detailed specifications for the installation of the various equipment and machines will be passed on to the contractor to the extent available during the performance of work. The requirements stipulated in these clauses shall be fulfilled by the Contractor.

15.5 Various tolerances required as marked on the drawings and as per specifications and instructions of the Engineer-in-Charge, shall be maintained. Verticality shall be maintained. Verticality shall be verified with the Theodolite.

15.6 ERECTION OF EQUIPMENTS

15.6.1 All the erection shall be carried out by Cranes of suitable capacity. Erection by derrick shall not be permissible. The contractor shall arrange the crane of suitable capacity required for erection and include cost for same in respective items without any liability on the part of Employer/Consultant.

15.6.2 Bidder shall submit the indicative erection scheme for compressor/equipment and shall undertake the erection only after obtaining approval of erection scheme by Engineer- in-charge.

15.6.3 Grouting of equipments, anchor bolts, pockets and under base plates shall be carried out as per technical specifications.

16.0 MEASUREMENT OF WORKS

16.1 In addition to the provisions of relevant clause of GCC and associated provisions thereof, the provisions of **Annexure-4** shall also apply.

17.0 TERMS OF PAYMENT

17.1 Basis and terms of payment for making "On Account Payment" shall be as set out in **Annexure-5**.

18.0 REPAIR OF PIPE DEFECTS

18.1 Immediately prior to aligning pipe for welding, the bevelled ends of each joint of pipe and the area immediately adjacent thereto (at least 25mm from the edge on the inside and outside of the pipe) shall be thoroughly cleaned of paint, rust, mill scale, dirty or other foreign matter by use of power drive wire buffing wheels, disc sanders, or by other methods approved by Employer/Consultant. This shall be done at no extra cost to Employer/Consultant.

18.2 All damaged ends of pipe that are bent, cut or otherwise mutilated to such an extent that in the opinion of the Employer/Consultant, faulty alignment or unacceptable welding would result, shall be repaired or cut-off and rebevelled to the correct angle with a bevelling machine of a type approved by Employer/Consultant. No compensation shall be allowed by reason of such recutting or bevelling, except when required because of the original bevel being

damaged before the pipe is "taken over"by Contractor.

18.3 Dents in bevels with a depth of less than 1 mm shall be removed by Contractor during cleaning and grinding, ahead of the welding in the field. Contractor shall rebevel dented bevel ends with a depth between 1 and 3 mm. Dents over 3mm depth shall be repaired by cutting and rebevelling.

19.0 ISSUE OF EMPLOYER/CONSULTANT SUPPLIED MATERIAL

19.1 The conditions for issue of material and reconciliation refer enclosed **Annexure-8.**

19.2 The reconciliation of material shall be applicable only for the material issued by Employer/Consultant as free issue to the contractor.

37.0 LOCATION OF DUMPYARD / WAREHOUSE / STORAGE YARD

37.1 The Warehouse / Storage Yard is situated at the locations as mentionedin the scope of work.

37.2 The Contractor shall collect the line pipes from the above dump yard(s) and arrange handling of pipes including crane etc. for unloading, transportation of pipes to required location or pipeline ROU shall be the responsibility of contractor.

37.3 Similarly other items issued as Free Issue Material (FIM) shall be collected by the Contractor from Employer/Consultant's designated storage yard(s) as directed by Engineer-in-Charge. Contractor shall arrange for handling of FIM including crane etc for loading/unloading, transportation of FIM to required site location free of cost.

37.4 Contractor shall lift the entire quantity envisaged for the section (inclusive of 10% extra pipe quantity) to cater to the wastage, re-routing etc., encountered during the construction; store it properly in the pipe yard maintained by the contractor.

38.0 STATUTORY APPROVALS

38.1 All associated activities required for obtaining necessary clearances, permissions, approvals, all licenses from all concerned authorities in respect of pipeline crossing & all pipeline related works shall be the responsibility of the HNGPL/Contractor.

38.2 The approval from any authority required as per statutory rules and regulations of river authority and any Central / State Government authority shall be the HNGPL/Contractor's responsibility unless otherwise specified in the Bidding Document. The application on behalf of the Owner for submission to relevant authorities alongwith copies of required certificate complete in all respects shall be prepared and submitted by the Contractor well ahead of time so that the actual construction of the work is not delayed for want of the approval/inspection by concerned authorities. The inspection of the works by the authorities shall be

arranged by the Contractor and necessary coordination and liason work in this respect shall be the responsibility of the Contractor. However statutory fees paid, if any, for all inspections and approvals by such authorities shall be reimbursedat actual by the Owner to the Contractor on production of documentary evidence.

39.0 TESTS AND INSPECTION

39.1 The Contractor shall carry out the various tests as enumerated in the technical specifications of this bid document and the technical documents that will be furnished to him during the performance of the work.

the work and supply of materials by the Contractor shall be carried out by Contractorat his own cost.

39.3 The work is subject to inspection at all times by the Engineer-in-Charge. The contractor shall carry out all instructions given during inspection and shall ensure that the work is being carried out according to the technical specifications of this bid document, the technical documents and the relevant codes of practice will be furnished to him during the performance of the work.

39.4 The Contractor shall provide for purposes of inspection access ladders, lighting and necessary instruments at his own cost.

39.5 Any work not conforming to execution drawings, specifications or codes and approved methodology / scheme shall be rejected forthwith and the Contractor shall carryout the rectifications at his own cost.

39.6 All results of inspection and tests will be recorded in the inspection reports, proforma of which will be approved by the Engineer-in-Charge. These reports shall form part of the completion documents.

39.7 For materials supplied by Employer/Consultant, Contractor shall carryout the tests, if required by the Engineer-in-Charge, and the Employer/Consultant shall reimburse the cost of such tests at actual to the Contractor on production of documentary evidence.

39.8 Statutory fees paid to IBR authorities and for repeat tests and inspection due to failures, repairs etc. such reasons attributable to the Contractor shall be borne by the Contractor.

39.9 Inspection and acceptance of work shall not relieve the Contractor from any of his responsibilities under this Contract.

40.0 INSPECTION OF SUPPLY ITEMS

40.1 All inspection and tests on bought out items shall be made as per the specifications forming part of this contract. Various stages of inspection and testing shall be identified after receipt of Quality Assurance Programme from the Contractor/ Manufacturer.

40.2 Inspection calls shall be given for associations of Employer/Consultant's representative as per mutually agreed programme in prescribed proforma with 15 days margin, giving details of equipment and attaching relevant test certificates and internal inspection report of the Contractor. All drawings, General Arrangement and other contract drawings, specifications, catalogues etc. pertaining to equipment offered for inspection shall be got approved from Employer/Consultant and copies shall be made available to Employer/Consultant before hand for undertaking inspection.

40.3 The contractor shall ensure full and free access to the inspection Engineer of Employer/Consultant at the Contractor's or their sub-contractor's premises at any time during contract period to facilitate him to carry out inspection and testing assignments.

41.0 FINAL INSPECTION

41.1 After completion of all tests as per specification the whole work will be subject to a final inspection to ensure that job has been completed as per requirement. If any defects noticed in the work attributable to Contractor, the Contractor at his own cost shall attend these, as and when the Employer/Consultant brings them to his notice. The Employer/Consultant shall have the right to have these defects rectified at the risk and cost of the contractor if he fails to attend to these defects immediately

42.0 COMPUTERIZED CONTRACTORS BILLING SYSTEM

43.0 Without prejudice to stipulation in General Conditions of Contract, Contractor should follow following billing system.

43.1 The bills will be prepared by the contractors on their own PCs as per the standard formats and codification scheme proposed by HNGPL / HNGPL/HNGPL. The contractors will be provided with data entry software to capture the relevant billing data for subsequent processing. Contractors will submit these data to HNGPL in an electronic media along with the hard copy of the bill, necessary enclosures and documents. The contractor will also ensure the correctness and consistency of data so entered with the hard copy of the bill submitted for payment.

43.2 Employer/Consultant will utilize these data for processing and verification of the Contractor's bill and payment."

44.0 TEMPORARY WORKS

44.1 All Temporary and ancillary works including enabling works connected with the work shall be responsibility of the Contractor and the price quoted by them shall be deemed to have included the cost of such works which shall be removed by the contractor at his cost, immediately after completion of his work.

46.0 QUALITY ASSURANCE/ QUALITY CONTROL

46.1 Bidder shall include in his offer the Quality Assurance Programme containing the overall quality management and procedures, which is required to be adhered to during the execution of contract. After the award of the contract detailed quality assurance programme shall be prepared by the contractor for the execution of contract for various works, which will be mutually discussed and agreed to.

46.2 The Contractor shall establish document and maintain an effective quality assurance system outlined in recognised codes.

46.3 Quality Assurance System plans/procedures of the Contractor shall be furnished in the form of a QA manual. This document should cover details of the personnel responsible for the Quality Assurance, plans or procedures to be followed for quality control in respect of Engineering, Procurement, Supply, Installation, Testing and Commissioning.

The quality assurance system should indicate organizational approach for quality control and quality assurance of the construction activities, at all stages of work at site as well as at manufacture's works and dispatch of materials.

46.4 The Employer/Consultant/Consultant or their representative shall reserve the right to inspect/witness, review any or all stages of work at shop/site as deemed necessary for quality assurance.

46.5 The Contractor shall adhere to the quality assurance system as per HNGPL Specification enclosed in the Bidding Document as **Annexure-6**.

47.0 HEALTH SAFETY AND ENVIRONMENT (HSE) MANAGEMENT

47.1 The Contractor, during entire duration of the Contract, shall adhere to HSE requirement as per spec. enclosed in the bidding document as **Annexure-7**.

48.0 SITE CLEANING

48.1 The Contractor shall clean and keep clean the work site from time to time to the satisfaction of the Engineer-in-Charge for easy access to work site and to ensure safe passage, movement and working.

48.2 If the work involves dismantling of any existing structure in whole or part, care shall be taken to limit the dismantling up to the exact point and/or lines as directed by the Engineer-in-Charge and any damage caused to the existing structure beyond the said line or point shall be repaired and restored to the original condition at the Contractor's cost and risks to the satisfaction of the Engineer-in-Charge, whose decision shall be final and binding upon the Contractor.

48.3 The Contractor shall be the custodian of the dismantled materials till the Engineer-in- Charge takes charge thereof.

48.4 The Contractor shall dispose off the unserviceable materials, debris etc. to any

area as decided by the Engineer-in-Charge.

48.5 The Contractor shall sort out, clear and stack the serviceable materials obtained from the dismantling/renewal at places as directed by the Engineer-in-Charge.

48.6 No extra payment shall be paid on this account.

49.0 COMPLETION DOCUMENTS

As - Built Drawings

Notwithstanding the provisions contained in standard specifications, upon completion of commissioning, the BIDDER shall complete all ofthe related approved drawings along with bill of materials to the "AS BUILT" stage provide to a **scale of 1:200** and submit to HNGPL., thefollowing:

a) One complete set in reduced size (279 mm x 432 mm).
b) One complete set of Soft Copy in CD of all original drawings.
c) Two complete sets of approved prints in A2 / A3 sizes.

Completion Document

The following documents shall be submitted in hard binder by theBIDDER in 2 sets, as a part of completion documents:

d) Copies of the Inspection reports, Laying Graphs, HDD Profiles (IF ANY)and valve pit drawings (IF ANY).

e) Pre testing, final Hydrostatic / pneumatic and other Test results and reports.

f) Consumption statements of PE certified by Owner's Site Engineer.

g) Final Material Reconciliation, stores issue & return statements

h) All other requirements as specified in the respective specifications.

i) Completion Certificate issued by Owner's Site Engineer.

j) No claim certificate by the BIDDER.

k) Completion certificate for embedded and covered up works wherever applicable.

l) Recovery statement, if any.

m) Deviation statement.

n) Statement for reconciliation of all the payments and recoveries made inthe progress bills.

o) Copies of deviation statement and order of extension of time, if granted.

p) Any other contractual documents required on completion.

q) Total list of connections in the area allotted to him giving details of connections provided & reasons where connection could not be given / completed.

r) The details recorded in measurement cards of every Connections.

s) Details of connections where extra piping done along with materials used.

t) Total material consumption report.

u) Material reconciliation with respect to the materials issued.

v) Test reports & test certificates of gauges etc.

w) Any other documents / records required.

52.0 UNDERGROUND AND OVERHEAD STRUCTURES

52.1 The information to possible extent regarding existing structures/overhead lines, existing pipelines and utilities are already indicated on alignment sheets. Over and above contractor may encounter other structure/pipelines/ OFC etc. which may not be appearing on alignment sheet, the contractor is required to collect such information on his own before commencing the work. Contractor must intimate the Local Officer concerned of the utility about the pipeline construction activities and take necessary steps to ensure safety and protection to men, materials and utility provided. The Contractor shall execute the work in such a manner that the said structures, utilities, pipelines etc. are not disturbed or damaged, and shall indemnify and keep indemnified the Employer/Consultant from and against any destruction thereof or damages thereto.

53.0 TEST CERTIFICATES

53.1 Bidder shall be required to submit recent test certificates for the material being used in works from the recognized laboratories. These certificates should indicate all properties of the materials as required in relevant IS Standards or International Standards.

53.2 Contractor shall also submit the test certificate with every batch of material supplied which will be approved by Engineer-in-Charge. No secured advance will be given for the materials not having test certificate. In case any test is to be carried out, the same shall be got done in the approved laboratory at the cost of contractor.

55.0 EXCAVATION BY BLASTING

55.1 Excavation by blasting is prohibited. Trenching in all types of rocks using mechanical means such as rock breakers / excavators etc.

56.0 SITE FACILITIES FOR WORKMEN

56.1 Following facilities are to be ensured at all work places where workmen are deployed/engaged by Contractor.

i) Arrangement of first aid
ii) Arrangement for clean drinking water.

58.0 HYDROSTATIC TESTING

58.1 The bidder as per the Technical specification along with their offer taking into

account the completion schedule shall furnish the detailed procedure proposed for the hydrostatic testing of pipeline. The necessary piping, pumps etc. shall be provided by the contractor. The final disposal of water after testing shall be contractor's responsibility and should be in such a way that neither the traffic movement even pedestrians nor the standing crop in nearby fields gets affected. Suitable drains shall be provided for this purpose as directed by the Engineer-in-Charge within the contracted prices.

58.2 The Contractor shall propose and obtain approval of Engineer-in-Charge for exact number of test sections, based on drawings, availability of water for hydro testing and keeping in view other exigencies, if any before starting hydro testing work. The Contractorwill carryout the hydrostatic test for approved number of test section including preparation for test and tie-ins, without any time and cost implication on this account to Employer/Consultant. Any increase or decrease in number of test sections will not have any cost implication to Owner / Consultant / Contractor.

59.0 MAKE OF MATERIALS

59.1 The materials required to be supplied by the contractor under this contract shall be procured only from Employer/Consultant approved vendors or preferred makes indicated in the tender. Where the makes of materials are not indicated in the Bidding document contractor shall furnish the details of makes and shall obtain prior approval of Engineer-in-Charge of vendors/sub-vendors before placing order.

60.0 ADDITIONAL WORKS/ EXTRA WORKS

60.1 Employer/Consultant reserves their right to execute any additional works/ extra works, during the execution of work, either by themselves or by appointing any other agency, even though such works are incidental to and necessary for the completion of works awarded to the Contractor. In the event of such decisions taken by Employer/Consultant Contractor is required to extend necessary cooperation, and act as per the instructions of Engineer-in-Charge.

62.0 PRICE REDUCTION SCHEDULE: applicable as per GCC.

63.0 PROJECT PLANNING, SCHEDULING AND MONITORING SYSTEM

The following schedules/documents/reports shall be prepared and submitted by the Bidder/Contractor for review/approval at various stages of the contract.

i) Along with Bid

a) Time Schedule

The Completion Time Schedule for the work (including mobilization period) as per Appendix-I to Invitation for bid, PART-A of Tender in all respect, from the date of issue letter/Fax of Intent.

The Bidder is required to submit a Project Time Schedule in Bar Chart Form, along with the Bid. The Schedule shall cover all

aspects like sub-ordering, manufacturing and delivery, indicated in the Bid Document. The Owner interface activities shall be clearly identified with their latest required dates. Owner reserves the right to disqualify the Bidder if the above Schedule submitted by the Bidder is not in line with the over all Project requirement.

b) Scheduling & Monitoring System

The Bidders should describe their system of Project Scheduling and monitoring, the extent of computerization, level of detailing, tracing methodology etc. with the name of computer package and sample outputs.

63.1 Project Review Meetings

63.2 Progress Reports

63.2.1 CONTRACTOR shall make every effort to keep the OWNER adequately informed as to the progress of the WORK throughout the CONTRACT period.

CONTRACTOR shall keep the OWNER informed well in advance of the construction schedule so as to permit the OWNER to arrange for requisite inspection to be carried outin such a manner as to minimize interference with progress of WORK. It is imperative that close coordination be maintained with the OWNER during all phases of WORK.

63.2.2 Each month, CONTRACTOR shall furnish the OWNER a detailed report covering the progress as of the last day of the previous month. These reports will indicate actual and scheduled percentage of completion of construction as well as generalcomments of interest or the progress of various phases of the WORK. The frequency of progress reporting by the CONTRACTOR shall be weekly.

63.2.3 Once a week, CONTRACTOR shall submit a summary of the WORK accomplished during the preceding week in form of percentage completion of the various phases of theWORK, to the OWNER.

63.2.4 Progress reports shall be supplied by CONTRACTOR with documents such as chart, networks, photographs, test certificate etc. Such progress reports shall be in the form and size as may be required by the OWNER and shall be submitted in at least 3 (three) copies.

63.2.5 Contractor shall prepare daily progress report (DPR) in the desired format and submit it to Engineer-in-charge along with schedule of next day to Engineer-in-charge.

64.0 RESPONSIBILITY OF CONTRACTOR

64.1 It shall be the responsibility of the Contractor to obtain the approval for any revision and/or modifications decided by the Contractor from the Employer/Consultant/ Engineer-in-charge before implementation. Also such revisions and/or modifications if accepted/ approved by the

Employer/Consultant/Engineer-in-charge shall be carried out at no extra cost to the Employer/Consultant. Any changes required during and/or after approval for detailed construction drawings due to functional requirements or for efficient running of system keeping the basic parameters unchanged and which has not been indicated by the Contractor in the data/drawings furnished along with the offer will be carried out by the Contractor at no extra cost to the Employer/Consultant.

64.2 All expenses towards mobilisation at site and demobilisation including bringing in equipment, clearing the site etc. shall be deemed to be included in the prices quoted and no separate payments on account of such expenses shall be entertained.

64.3 It shall be entirely the Contractor's responsibility to provide, operate and maintain all necessary construction equipments, scaffoldings and safety gadgets, cranes and other lifting tackles, tools and appliances to perform the work in a workman like and efficient manner and complete all the jobs as per time schedules.

64.4 Preparing approaches and working areas for the movement and operation of the cranes, levelling the areas for assembly and erection shall also be the responsibility of the Contractor. The Contractor shall acquaint himself with access availability, facilities such as railway siding, local labour etc. to provide suitable allowances in his quotation. The Contractor may have to build temporary access roads to aid his own work, which shall also be taken care while quoting for the work.

64.5 The procurement and supply in sequence and at the appropriate time of all materials and consumables shall be entirely the Contractor's responsibility and his rates for execution of work will be inclusive of supply of all these items.

67.0 INSURANCE FOR FREE ISSUE MATERIAL

67.1 Contractor shall at his own expense arrange, secure and maintain insurance cover for Employer/Consultant's supplied free issue materials as defined in Bidding Document. Contractor's quoted price shall be inclusive of all costs on account of insurance liabilities covered under the Contract. Contractor to note that the beneficiary of insurance cover shall be HNGPL. The insurance cover of the free issue material shall be for the period from the date of handing over the material to Contractor from Employer/Consultant's designated place of issue/ dumpsite to date of handing over the completed work to Employer/Consultant.

68.0 INSURANCES IN INDIA

68.1 In addition to the insurance covers specified in the General Conditions of Contract to be obtained and maintained by the Contractor, Contractor shall at his own expense arrange, secure and maintain insurance with reputable insurance companies to the satisfaction of the Employer/Consultant as may be necessary and to its full value for all such amounts to protect the works in progress from time to time and the interest of Employer/Consultant against all risks as detailed herein. The form and the limit of such insurance as defined herein together with the under writer works thereof in each case should be as acceptable to the Employer/Consultant. However, irrespective of work acceptance, the responsibility to maintain adequate insurance coverage at all times during the

period of Contract shall be that of Contractor alone. Contractor's failure in this regard shall not relieve him of any of his responsibilities and obligations under Contractor.

68.2 Any loss or damage to the equipment during ocean transportation, port/custom clearance, inland and port handling, inland transportation, storage, erection and commissioning till such time the Work is taken over by Employer/Consultant, shall be to the account of Contractor. Contractor shall be responsible for preferring of all claims and make good for the damage or loss by way of repairs and/or replacement of the parts of the Work damaged or lost. Contractor shall provide the Employer/Consultant with a copy of all insurance policies and documents taken out by him in pursuance of the Contract. Such copies of documents shall be submitted to the Employer/Consultant immediately upon the Contractor having taken such insurance coverage. Contractor shall also inform the Employer/Consultant at least 60 (Sixty) days in advance regarding the expiry cancellation and/or changes in any of such documents and ensure revalidation/renewal etc., as may be necessary well in time.

68.3 Statutory clearances, if any, in respect of foreign supply required for the purpose of replacement of equipment lost in transit and/or during erection, shall be made available by the Employer/Consultant. Contractor shall, however, be responsible for obtaining requisite licenses, port clearances and other formalities relating to such import. The risks that are to be covered under the insurance shall include, but not be limited to the loss or damage in handling, transit, theft, pilferage, riot, civil commotion, weather conditions, accidents of all kinds, fire, war risk (during ocean transportation only) etc. The scope of such insurance shall cover the entire value of supplies of equipments, plants and materials to be imported from time to time.

68.4 All costs on account of insurance liabilities covered under this Contract will be to Contractor's account and will be included in Contract Price. However, the Employer/Consultant may from time to time, during the currency of the Contract, ask the Contractor in writing to limit the insurance coverage risk and in such a case, the parties to the Contract will agree for a mutual settlement, for reduction in Value Of Contract to the extent of reduced premium amounts.

68.5 Contractor as far as possible shall cover insurance with Indian Insurance Companies, including marine Insurance during ocean transportation.

69.0 <u>SUBMISSION OF COLOURED PHOTOGRAPHS</u>

69.1 The Contractor shall shoot, prepare and submission coloured photographs in 2 sets alongwith softcopies to HNGPL site office along with monthly progress report covering all the activities of pipeline constructions highlighting the progress or other areas of work. Similarly photographs for problem areas should be submitted well in advance with a proposed methodology to execute the works and meet the construction schedule. The cost of same shall be deemed to be inclusive in the rates and no separate payment shall be made.

73.0 **SPARES**

73.1 Contractor shall procure and supply all spare parts required during commissioning

ofthe various items / materials supplied by him as enumerated in the Bidding Document.The quoted lumpsum prices shall be deemed to have been inclusive of all suchprovision of commissioning spares, required till commissioning of such items.Contractor shall make available all the commissioning spares required at site at least 4 (four) weeks before start of commissioning. However, listed spares not used during commissioning shall be handed over to Employer at their designated place. Contractorshall also supply commissioning spares not listed but required during commissioningwithin the contracted price.

73.2 In addition to above, special tools & tackles required, if any, for operation & maintenance shall also be supplied by the Contractor and the quoted prices shall be deemed to have been inclusive of all such provisions.

78.0 DOCUMENTS TO BE SUBMITTED/ PRODUCED ALONGWITH R.A. BILLS

i) Computerized R.A. Bill/ Manual Bill, with IT No./ ST No./ Labour LicenseNo. Printed thereon.

ii) ESI/ EPF clearance certificates for the last month alongwith R.A. Bills.

iii) Insurance Policy as per relevant clauses of Contract Agreement.

iv) Attendance Register and Salary Records.

v) Photocopy of the measurement book to be attached with R.A. Bills.

vi) Any other document required for the purpose of processing the bills.

vii) Registration Certificate with Sales tax authorities of state concerned.

NOTE to BIDDERS:

1. Laying of steel pipeline, with or without casing, in case of existing RCC/BW trench etc is provided with top RCC cover, then scope included removal of prevailing RCC cover from channel, laying of pipeline, testing and sand filling (including supply) refixing the top cover of pipe trench.

2. Moiling: Survey of underground utilities, execution of the work as per specification, including excavation of adequate size pits at both the sides, manual or machine moling with the hole size not exceeding 20% of the pipe dia, insertion of steel pipe, testing & commissioning and restoration of the pits to original condition, submission of As-Built Graph as per specifications and the instruction of Engineer-in-charge. It should be ensured that no asphalt or concrete road surface damaged during moiling

3. it shall be required to carry out the trenching, laying and other related works in night time also. There shall not be any additional payment paid separately for working at night. All arrangements such as caution light / diversion sign boards, PPE to work at night for carrying out the work should be arranged by the contractor

4. It may be required to commission the network partially as per requirement. Contractor should able to commission with requisite equipment, tools, tackles & manpower without any additional implication.

ANNEXURES TO SCC

Annexure-2	:	Scope of Supply
Annexure-3	:	Time Schedule
Annexure-4	:	Measurement of Work
Annexure-5	:	Terms of Payment
Annexure-6	:	Specification for Quality Assurance System requirements from Bidders
Annexure-7	:	Specification for Health, Safety and Environment (HSE) Management
Annexure-8	:	Conditions for issue & reconciliation of material
Annexure-9	:List of minimum nos. of construction equipment to be deployed.	
Annexure-10	:	Minimum no. of skilled labour to be deployed
Annexure-11	:	Hiring / Recovery Rate for Deployment of Manpower
Annexure-12	:	Equipment Hiring / Recovery Rate

SCOPE OF WORK
(ANNEXURE-1 TO SPECIAL CONDITIONS OF CONTRACT)

SCOPE OF SUPPLY
(ANNEXURE-2 TO SPECIAL CONDITIONS OF CONTRACT)

ANNEXURE-2 TO SCC

1.0 SCOPE OF SUPPLY

1.1 Owner's Scope of Supply (free issue material)

Owner's scope of supply shall be as specified in Particular Job Specification, Technical Specifications, Schedule of Rates & various other parts of the Bidding Document.

Free Issue Materials shall be issued to the Contractor from the designated store(s) of Owner. Contractor shall be responsible for lifting the free issue materials from Owner's storage point(s) and transporting the same to work site(s).

Conditions for Issue and Reconciliation of Materials shall be as per Document enclosed as Annexure-8 to Special Conditions of Contract.

1.2 Contractor's Scope of Supply

All materials except what is under Owner's scope of supply as mentioned in Clause No. 1.0 above, and required for successful completion of works in all respects shall be supplied by the Contractor and the cost of such supply shall be deemed to have been includedin the quoted price without any additional liability on the part of Owner.

TIME SCHEDULE
(ANNEXURE-3 TO SPECIAL CONDITIONS OF CONTRACT)

ANNEXURE-3 TO SCC

TIME SCHEDULE

Name of Work	Time of Completion
MISCELLANEOUS CIVIL WORK FOR DRS & COMPRESSOR INSTALLATION FOR ONLINE CONNECTIVITY OF CNG RETAIL OUTLET IN SIDCUL HARIDWAR	**6 (six) MONTHS FROM DATE OF FOA/LOA.** The contract shall be valid for a period of 06 months from the date of issue of Work Order / Letter of Intent. HNGPL at its discretion can extend the contract by another six months considering factors such as monsoon ban, ROU permission issues, any other reasons, etc., based on the satisfactory performance of the contractor on same rates and terms and conditions.

Note:

1) The above time schedule is inclusive of mobilization period.
2) The time of completion shall be reckoned from the date of award of contract, which shall bethe dateof issue Fax of Acceptance.
3) The time indicated is for completing all the works in all respects as per specifications, codes, drawings and instructions of Engineer-in-charge.
4) The time indicated is for completing all the works in all respects as per specifications, codes, drawings and instructions of Engineer-in-charge.
5) It should be noted that the period of construction given above includes preparation of drawings (if required), procurement and supply of materials including their inspection & testing, mobilization at site, construction, laying, fabrication, erection inspection, testing, rectification (if any), pre- commissioning, commissioning and demobilization works etc. complete in all respects to the entire satisfaction of Owner/ Engineer-in-charge.

_____

(STAMP & SIGNATURE OF BIDDER)

MEASUREMENT OF WORK
(ANNEXURE- 4 TO SPECIAL CONDITIONS OF CONTRACT)

MEASUREMENT OF WORK

1.0 GENERAL

1.1 The mode of measurement shall be as mentioned in relevant standard specification incorporated in the Bidding Document. Any other mode of measurements not covered in above specifications shall be followed in accordance with relevant BIS codes/ Schedule of Rates/ Specifications etc. and/ or as decided by Engineer-in-charge.

1.2 Payment will be made on the basis of joint measurements taken by Contractor and certified by Engineer-in-charge. Measurement shall be based on "Approved for Construction" drawings, to be the extent that the work conforms to the drawings and details are adequate.

1.3 Wherever work is executed based on instructions of Engineer-in-charge or details are not adequate in the drawings, physical measurements shall be taken by Contractor in the presence of Engineer-in-charge.

1.4 Measurements of weights shall be in metric tonnes corrected to the nearest Kilogram. Linear measurements shall be in meters corrected to the nearest centimeters.

1.5 The weights mentioned in the drawing or shipping list shall be the basis for payment. If mountings for panels etc. are packed separately, their erection weights shall include all mountings.

1.6 Welds, bolts, nuts, washers etc. shall not be measured. Rates for structural steel work shall be deemed to include the same.

1.7 No other payment either for temporary works connected with this Contractor for any other item such as weld, shims, packing plates etc. shall be made. Such items shall be deemed to have been included for in the rates quoted.

1.8 Measurement will be made for various items under schedule of rates on the following basis as indicated in the unit column.

i)	Weight	:	MT or Kg
ii)	Length	:	M (Metre)
iii)	Number	:	No.
iv)	Volume	:	Cu.M
v)	Area	:	Sq.M

2.0 PIPING

2.1 Length of pipes shall be measured along the curvilinear centre of the pipelines laid/ installed and shall include all types of fittings, bends etc. but excluding all types of valves. Length of valves shall be excluded from piping measurement and shall be considered on number basis.

3.0 FOR PIPELINE CROSSINGS BY HDD (if required) / BORING / MOLING METHOD

Payment shall be made as specified in SOR, PJS and Technical Specification.

TERMS OF PAYMENT
(ANNEXURE-5 TO SPECIAL CONDITIONS OF CONTRACT)

ANNEXURE- 5 TO SCC

1.0 TERMS OF PAYMENT

Pending completion of the whole works, provisional progressive payments for the part of work executed by the contractor shall be made by Owner on the basis of said work completed and certified by the Engineer-in-Charge as per the agreed milestone payment schedule and the percentage break-ups given below.

Contractor shall submit his invoices to the Engineer-in-Charge fortnightly in the manner as instructed by Owner. Each invoice will be supported by documentation acceptable to Owner and certified by the Engineer-in-Charge. Payments made by owner to the contractor for any part of the work shall not deem that the Owner has accepted the work.

The Contractor has to raise the RA bill on monthly basis and payment shall be made as per the following terms:

1.1 **Under Ground Pipelines**

- 60% upto completion of laying after clearing & grading of ROU, stringing of pipes, field joint welding, radiography & NDT, trenching by excavation/ blasting & joint coating, lowering of pipeline in trenches and backfilling with crowning and compaction, dressing, clean-up and restoration.
- 20 % progressively on completion of Hydro testing, dewatering, swabbing & submission of as built drawing/ pneumatic testing (in case of common trench).
- 10% on completion of pre-commissioning (Nitrogen purging etc.) commissioning, handing over, submission of final documents.
- 10% on completion of material reconciliation and all work in all respects and acceptance thereof by EIC, obtain NOC from Statutory authorities and closure of contract.

1.2 **Above Ground Piping**

- **Weld Joints/ Erection & Testing/ SV/ Tap off:**
- 65% progressively on completion of erection of piping along with supports, vent drains, alignment, hydro testing, dewatering and clean-up to achieve mechanical completion.
- 15% on completion of painting, commissioning and submission of "As Built Drawings/ Final documents".
- 10% on completion of material reconciliation.
- 10% on completion of all work in all respects and acceptance thereof by Engineer-in-Charge andclosure of contract

1.3 **Civil Works**

- 90% progressively on completion of individual item work on pro-rata basis as certified in monthlyprogress bill.
- 10% on completion of all works in all respects and acceptance thereof by Engineer-in-Charge andclosure of contract.

1.4 **HDD Work/Rock Drilling/ Moling**

- 60% upto completion stringing of pipes, welding, radiography & pre-hydro testing of

carrier pipe & field joint coating till the string ready for pulling, pulling of carrier pipe through HDD and post hydrotesting (If required) and tie-in welding and restoration clean up etc.

- 20 % progressively on completion of hydro testing, dewatering, swabbing & submission of as built drawing.
- 10% on completion of pre-commissioning (Nitrogen purging etc.), commissioning, handing over and submission of final documents.
- 10% on completion of material reconciliation and all work in all respects and acceptance thereof by Engineer-in-charge and closure of contract.

1.5 **TCP**

Payment shall be made for the actual length of pipeline network completed

- 60% payment shall be made after completion of TCP installation, Soil resistivity survey, submission of approved design documents and rectification & re-verification of coating defects.
- 30% payment shall be made after verification & acceptance of reports.
- 10% payment on completion of all works in all respects and acceptance thereof by Engineer in- chargeand closure of contract.

1.6 **SUPPLY & INSTALLATION**

- 80% of the invoice value along with taxes and duties shall be paid after supply and installation at siteafter submission of following documents:
- 10% payment shall be made after successful testing and commissioning at site duly certified byEngineer-in-Charge
- 10% payment on submission of final bill and acceptance of these by owner thereafter for successfulclosure of work order duly certified by Engineer-in-Charge.

1.7 **OTHER WORKS (NOT COVERED ABOVE)**

- 90% progressively on completion of individual item work on pro-rata basis as certified in monthlyprogress bill.
- 10% on completion of all works in all respects and acceptance thereof by Engineer-in Charge andclosure of contract.

PAYMENT METHODOLOGY

1. The contractor may raise invoices on monthly basis. Bidder shall enclose all documents as per check list issued by HNGPL.

2. The payments to the Contractor will be released within a period of 30 days from the date of receipt of the complete invoice as per the terms and conditions of the Contract.

3. Further break-up of percentage wise, if deemed necessary for any progressive payment of individual item may be permitted after request by Contractor showing relevance of further breakup & recommendation by EIC

4. All payments against running bills are advance against the work and shall not be taken as final acceptance of work / measurement carried out till the final bill

5. Bills shall be raised by contractor in line with check list attached in Tender document.

STANDARD SPECIFICATIONFOR
HEALTH, SAFETY AND ENVIRONMENTAL (HSE)
MANAGEMENT AT CONSTRUCTION SITES

C O N T E N T S

SL. NO.	DESCRIPTION
1.0	SCOPE
2.0	REFERENCES
3.0	REQUIREMENT OF HEALTH, SAFETY & ENVIRONMENT (HSE) MANAGEMENT SYSTEM TO BE COMPLETED BY BIDDERS.
4.0	DETAILS OF HSE MANAGEMENT SYSTEM BY CONTRACTOR
5.0	RECORDS
	ANNEXURE-A
	ANNEXURE-B
	ANNEXURE-C
	ANNEXURE-D
	ANNEXURE-E

1.0 **SCOPE**

This specification establishes the Healthy, Safety and Environment (HSE) management requirement to be compiled with by the Contractors during construction.

This specification is not intended to replace the necessary professional judgement needed to design & implement an effective HSE system for construction activities and the contractor is expected to exceed requirements given in this specification.

Requirement stipulated in this specification shall supplement the requirement of HSE management given in relevant Act (S)/ legislations. General Condition of Contract (GCC) Special Condition of Contract (SCC) and Job Specifications. Where different documents stipulate different requirements, the most stringent shall be adopted.

2.0 **REFERENCES**

This document should be read in conjunction with following:

- General Conditions of Contract (GCC)
- Special Conditions of Contract (SCC)
- Building and other construction workers (regulation of employment and condition of service) Act, 1996
- Job Specifications
- Relevant IS Codes (refer Annexure-A)
- Reporting Formats (refer Annexure-B)
- Statutory requirements

3.0 **REQUIREMENT OF HEALTH, SAFETY & ENVIRONMENT (HSE) MANAGEMENT SYSTEM TO BE COMPLETED BY BIDDERS.**

3.1 **Management Responsibility**

3.1.1 The Contract should have a document HSE policy to cover commitment of the organization to ensure health, safety and environment aspects in their line of operations

3.1.2 The HSE management system of the Contractor shall cover HSE requirement including but not limited to what specified under clause 1.0 & 2.0 mentioned above

3.1.3 Contractor shall be fully responsible for planning and implementing HSE requirement to the satisfaction of the company. Contractor as a minimum requirement shall designate/deploy the following to co-ordinate the above:

No. Of workers deployed		
Up to 250	-	Designate one safety supervisor who will guide the workers from time to time, as well as impart training basic guidelines at least weekly once.
Above 250 & upto 500	-	Deploy one qualified and experienced safety Engineer/ Officer who will guide the workers from time to time as well as impart basic guideline & training at least weekly once. He / She shall possess a recognized Degree in any branch of engineering or technology or architecture and had a post qualification construction experience of minimum two years or possess a recognized Diploma in any branch of engineering or technology or Graduate in

		Science stream and had a post qualification construction experience of minimum five years.
Above 500 (for every 500 or less)	-	One additional safety engineer/Officer whose function will be as mentioned above

Contractor shall indemnify and hold harmless OWNER/ HNGPL & their representative's from any and all liabilities arising out of non fulfillment of HSE requirements.

Above is the minimum requirement and the Contractor shall ensure physical presence of a safety personnel at each place where Hot work permit is required. No work shall be started at site until above safety personnel are physically present at site. The contractor shall submit a safety organogram clearly indicating the lines of responsibility and reporting system. He shall furnish Bio-Data/Resume/Curriculum Vitae of the safety personnel he intends to mobilize, at least 1 month before the intended mobilization, for HNGPL/Owner's approval.

3.1.4 The Contractor shall ensure that the Health, Safety and Environment (HSE) requirements are clearly understood & faithfully implemented at all levels, at each and every site/ work place.

3.1.5 The Contractor shall promote and develop consciousness for Health, Safety and Environment among all personnel working for the Contractor. Regular awareness programs and fabrication shop/work site meeting shall be arranged on HSE activities to cover hazards involved in various operations during construction.

3.1.6 Arrange suitable first aid measures such as First Aid Box, trained personnel to give First Aid, Stand by Ambulance or Vehicle and install fire protection measures such as: adequate number of steel buckets with sand and water and adequate fire extinguishers to the satisfaction of OWNER/ HNGPL. In case the number of workers exceeds 500, the Contractor shall position an ambulance /vehicle on full time basis very close to the worksite.

3.1.7 The Contractor shall evolve a comprehensive planned and documented system for implementation and monitoring of the HSE requirements. This shall submitted to OWNER & HNGPL for approval well in advance, prior to start of work. The monitoring for implementation shall be done by regular inspection and compliance to the observations thereof. The Contractor shall get similar HSE requirements implemented at his sub-contractor (s) work site/ Office. However, compliance of HSE requirement shall be the sole responsibility of the Contractor. Any review/ approval by OWNER/ HNGPL shall not absolve the Contractor of his responsibility/ liability in relation to all HSE requirements.

3.1.8 Non-Conformance on HSE by the Contractor (including his Sub-contractors) as brought out during review/ audit by HNGPL/ OWNER representative shall be resolved forthwith by Contractor. Compliance report shall be possibility submitted to HNGPL/ OWNER at the earliest.

3.1.9 The Contractor shall ensure participation of his Resident Engineer/Site-in-Charge in the Safety Committee/HSE Committee meetings arranged by OWNER/ HNGPL. The compliance of any observation shall be arranged urgently. Contractor shall assist OWNER/HNGPL to achieve the targets set by them on HSE during the project implementation.

The contractor shall ensure that his staff members & workers (permanent as well casual) shall not be in a state of intoxication during working hours and shall abide by any law relating to consumption & possession of intoxicating drinks or drugs in force. Awareness about local laws on this issue shall form part of the Induction Training.

The contractor shall ensure that all personnel working for him comply with No-

smoking requirements of the owner as notified from time to time. Cigarettes, lighters, auto ignition tools or appliances shall not be allowed inside the plant complex. Smoking shall be permitted only inside smoking booths expressly designated & authorized by the Owner/HNGPL.

3.1.10 The Contractor shall adhere consistently to all provisions of HSE requirements. In case of non-compliance or continuous failure in implementation of any of HSE provisions; OWNER/ HNGPL may impose stoppage of work without any Cost & Time implication to Owner and/or impose a suitable penalty for non-compliance with a notice of suitable period, upto a cumulative limit of 1.0% (one percent) of Contract value with a ceiling of Rs. 10 lakhs.

0.2% (Zero decimal two percent) of the contract value for LSTK, EPC, EPCC or Package contracts with an overall ceiling of Rs. 1,00,00,000/- (Rupees one crore).

S. No.	**Violation or HSE norms**	**Penalty Amount**
1.	For not using personal protective equipment (Helmet, Shoes, Goggles, Gloves, Full body harness, Face shield, Boiler suit, etc.)	Rs. 250/- per day / item / person
2.	Working without Work Permit / Clearance	Rs.5,000/- per occasion

3.	Unsafe electrical practices (not installing ELCB, using poor joints of cables, using naked wire without top plug into socket, laying wire / cables on the roads, electrical jobs by incompetent person, etc.)	Rs.3,000/- per item per day.
4.	Working at height without full body harness, using non-standard / rejected scaffolding and not arranging fall protection arrangement as required like Safety Nets.	Rs.1,000/ per case per day.
5.	Unsafe handling of compressed gas cylinders (No trolley, jubilee clips double gauge regulator, improper storage / handling).	Rs. 100/- per item per day
6.	Use of domestic LPG for cutting purpose.	Rs.1,000/- per occasion
7.	No fencing / barricading of excavated areas.	Rs.1,000/- per occasion
8.	Not providing shoring / strutting / proper slope and not keeping the excavated earth at least 1.5 M away from excavated area.	Rs.5,000/- per occasion
9.	Non display of caution boards, list of hospitals, emergency services available at work locations.	Rs.500/- per occasion
10.	Traffic rules violations like over speeding of vehicles, rash driving, wrong parking, not using seat belts, vehicles not fitted with reverse warning alarms.	Rs.1,000/- per occasion
11.	Absence of Contractor's top most executive at site in the safety meetings whenever called by HNGPL / Owner	Rs.1,000/- per occasion
12.	Failure to maintain safety records by Contractor Safety personnel.	Rs.1,000/- per month.
13.	Failure to conduct daily safety site inspection, HSE meeting and HSE audit at predefined frequencies.	Rs.1,000/- per occasion
14.	Failure to submit the monthly HSE report by 5th of subsequent month to Engineer-in-Charge.	Rs. 1,000/- per occasion and Rs. 100/- per day for further delay.
15.	Poor House Keeping	Rs.1,000/- per occasion
16.	Failure to report & follow up accident (including Near Miss) reporting system.	Rs. 10,000/- per occasion

17.	Degradation of environment (not confining toxic spills oil / lubricants onto ground)	Rs.1,000/- per occasion
18.	Not medically examining the workers before allowing them to work at height, not providing ear muffs while allowing them to work in noise polluted areas, made them to work in air polluted areas without respiratory protective devices, etc.	Rs.1,000/- per occasion
19.	Violation of any other safety condition as per job HSE plan, work permit and HSE conditions of contract (using crowbar on cable trenches, improper welding booth, not keeping fire extinguisher ready at hot work site, unsafe rigging practices, non-availability of First-Aid box, etc.)	Rs.1,000/- per occasion

20.	Any violation not covered above.	To be decided by HNGPL / Owner

This penalty shall be in addition to all other penalties specified else where in the contract. The decision of imposing stoppage of work, its extent & monitory penalty shall rest with HNGPL/OWNER & binding on the Contractor.

3.1.11 All fatal accidents and other personnel accidents shall be investigated by a team of Contractor's senior personnel for root cause and recommend corrective and preventive actions. Findings shall documented and suitable actions taken to avoid recurrences shall be communicated to OWNER / HNGPL. OWNER / HNGPL shall have the liberty to independently investigate such occurrences and Contractor shall extend all necessary help and co-operation in this regard. HNGPL / Owner shall have to right to share the content of this report with the outside world.

3.2 **House Keeping**

3.2.1 Contractor shall ensure that a high degree of house keeping is maintained and shall ensure the followings:

a. All surplus earth and debris are removed/disposed off from the working site to identified location (s).

b. Unused/Surplus Cables Steel items and steel scrap lying scattered at different places within the working areas are removed to identified location (s).

c. All wooden scrap, empty wooden cable drums and other combustible packing materials shall be removed from work place to identified location(s).

d. Roads shall be kept clear and materials like pipes, steel, sand, boulders, concrete chips and bricks, etc. shall not be allowed in the roads to obstructs free movement of men & machineries.

e. Fabricated steel structurals, pipes & piping materials shall be stacked properly for erection.

f. Water logging on rods shall not be allowed.

g. No parking of trucks/ trolleys, cranes and trailors etc. shall be allowed on of roads, which may obstruct the traffic movements.

h. Utmost care shall be taken to ensure over all cleanliness and proper up keep of the working areas.

i. Trucks carrying sand, earth and pulverized materials etc. shall be covered while moving within the plant areas.

j. The contractor shall ensure that the atmosphere in plant area and on roads is free from particulate matter like dust, sand, etc. by keeping the top surface wet for ease in breathing.

k. At least two exits for any unit area shall be assured at all times.

3.3 **Healthy, Safety and Environment**

a) The Contractor shall provide safe means of access to any working place including provision of suitable and sufficient scaffolding at various stages during all operations of the work for the safety of his workmen, and OWNER/ HNGPL. Contractor shall ensure deployment of appropriate equipment and appliances for adequate safety and healthy of the workmen and protection of

surrounding areas.

Contractor shall ensure identification of all Occupational Health, Safety & Environmental hazards in the type of work he is going to undertake and enlist mitigation measures. Contractor shall carry out Job Safety Analysis (JSA) specifically for high risk jobs like working at height & in confined space, deep excavations, radiography jobs, electrical installations, blasting operations, demolishing / dismantling activities, welding / gas cutting jobs and submit the findings to HNGPL / Owner. The necessary HSE measures devised shall be in place prior to start of an activity by the contractor.

b) The Contractor shall ensure that all their staff workers including their sub-Contractor (s) shall wear Safety Helmet and Safety shoes. Contractor shall also ensure use of safety belt, protective goggles, gloves etc. by the personnel as per jobs requirements. All these gadgets shall conform to relevant IS specification equivalent.
The Contractor shall ensure that all their staff, workers and visitors including their sub-contractor(s) have been issued (records to be kept) & wear appropriate PPEs like nape strap type safety helmets preferably with head & sweat band with ¾" cotton chin strap (made of industrial HDPE), safety shoes with steel toe cap and antiskid sole, full body harness (C marked and conforming to EN361), protective goggles, gloves, ear muffs, respiratory protective devices, etc. All these gadgets shall conform to applicable IS Specifications / C or other applicable international standards.

Owner may issue a comprehensive color scheme for helmets to be used by various agencies. The Contractor shall follow the scheme issued by the owner. All Safety / Fire personnel shall preferably wear red colour helmet so that workmen can approach them for guidance during emergencies.

For shot blasting, the usage of protective face shield and helmets, gauntlet and protective clothing is mandatory.

For offshore jobs/contracts, contractor shall provide PPEs (new) to HNGPL & Owner's personnel, at his (contractor's) cost. All personnel shall wear life jacket at all time.

An indicative list of HSE standards/codes is given under Appendix-A.

The contractor shall issue height permit for working at height after verifying and certifying the checkpoints as specified in the attached permit (Format No. HSE-6). He shall also undertake to ensure compliance to the conditions of the permit during the currency of the permit including adherence to personal protective equipments.

The permit shall be issued initially for one week or expected duration of an activity and extended further for the balance duration. This permit shall be applicable in areas where specific clearance from Owner's operation Deptt. / Safety Deptt. is not required. HNGPL field Engineers / Safety Officers / Area Coordinators may verify and counter sign this permit (as an evidence of verification) during the execution of the job.

In case work is undertaken without taking sufficient precautions as given in the permit, HNGPL Engineers may cancel the permit and stop the work till satisfactory compliance is arranged. Contractors are expected to maintain a register for issuance of permit and extensions thereof including preserving the used permits for verification during audits etc.

Contractor shall arrange (at his cost) and ensure use of Fall Arrester Systems by his workers. Fall arresters are to be used while climbing / descending tall structures. These arresters should lock automatically against the anchorage line, restricting free fall of the user. The device is to be provided with a double

security opening system to ensure safe attachment or release of the user at any point of rope. In order to avoid shock, the system should be capable of keeping the person in vertical position in case of a fall.

Contractor shall ensure that Full body harnesses conforming EN361 and having authorized CC marking is used by all personnel while working at height. The lanyards and life lines should have enough tensile strength to take the load of the worker in case of a fall. One end of the lanyard shall be firmly tied with the harnesses and the other end with life line. The harness should be capable of keeping the workman vertical in case of a fall, enabling him to rescue himself.

Contractor shall provide Roof Top Walk Ladders for carrying out activities on sloping roofs in order to reduce the chances of slippages and falls.

c) Contractor shall ensure that a proper Safety Net System shall be used at appropriate locations. The safety net shall be located not more than 30 feet (9.0 metres) below the working surface at site to arrest or to reduce the consequences of possible fall of persons working at different heights.

d) Contractor shall ensure that flash back arrestors conforming to BS:6158 or equivalent are installed on all gas cylinders as well as at the torch end of the gas hose, while in use. All cylinders shall be mounted on trolleys and provided with a closing key. The burner and the hose placed downstream of pressure reducer shall be equipped with Flash Back Arrester / Non Return Valve device. The hoses for acetylene and oxygen cylinders must be of different colours. Their connections to cylinders and burners shall be made with a safety collar. At end of work, the cylinders in use shall be closed and hoses depressurized. All welding machines shall have effective earthing. In order to help maintain good housekeeping, and to reduce fire hazard, live electrode bits shall be contained safely and shall not be thrown directly on the ground.

e) The Contractor shall assign to his workmen, tasks commensurate with their qualification, experience and state of health for driving of vehicles, handling and erections of materials and equipment's. All lifting equipments shall be tested certified for its capacity before use. Adequate and suitable lighting at every work place and approach there to shall be provided by the contractor before starting the actual work/ operation at night.

Contractor shall ensure installation of Safe Load Indicator (SLI) on all cranes (while in use) to minimize overloading risk. SLI shall have capability to continuously monitor and display the load on the hook, and automatically compare it with the rated crane capacity at the operating condition of the crane. The system shall also provide visual and audible warnings at set capacity levels to alert the operator in case of violations.

The contractor shall be responsible for safe operations of different equipments mobilized and used by him at the workplace like transport vehicles, engines, cranes, mobile ladders, scaffoldings, work tools, etc.

f) Hazardous and/or toxic material such as solvent coating or thinners shall be stored in appropriate containers.

g) All hazardous materials shall be labeled with the name of the materials, the hazards associated with its use and necessary precautions to be taken.

The work place shall be checked prior to start of activities to identify the location, type and condition of any asbestos materials which could be disturbed during the work. In case asbestos material is detected, usage of appropriate PPEs by all personnel shall be ensured and the matter shall be reported immediately to HNGPL / Owner.

h) Contractor shall ensure that during the performance of the work all hazards to the health of personnel have been identified assessed and eliminated.

i) Chemical spills shall be contained & cleaned up immediately to prevent further contamination.

j) All personnel exposed to physical agents such as ionizing or non-ionizing radiation ultraviolet rays or similar other physical agents shall be provided with adequate shielding or protection commensurate with type of exposure involved. For ionizing radiation, requirements of Bhabha Atomic Research Centre (BARC)/ Atomic Energy Regulatory Board (AERB) shall be followed.

k) Where contract or exposure of hazardous materials could exceed limits or could otherwise have harmful affects, appropriate personal protective equipment's such as gloves, goggles, aprons, chemical resistant clothing and respirator shall be used.

l) Contractor shall ensure the following facilities at work sites:

   I) A Crèche where 10 or more female workers are having children below the age of 6 years.

II) Reasonable Canteen facilities are made available at appropriate location depending upon site conditions.

m) Suitable facilities for toilet, drinking water, proper lighting shall be provided at site and labor camps, commensurate with applicable Laws/Legislation.

n) Contractor shall ensure storage and utilization methodology of material that are not detrimental to the environment. Wherever required Contractor shall ensure that only the environment friendly material are selected.

Emphasize on recycling of waste materials such as metals, plastics, glass, paper, oil & solvents. The waste that can not be minimized, reused or

recovered shall be stored and disposed of safely. In no way, toxic spills shall be allowed to percolate into the ground. The contractor shall not use the empty areas for dumping the wastes.

o) All person deployed at site shall be knowledgeable of and comply with the environmental laws, rules & regulation relating to the hazardous materials substance and wastes. Contractor shall not dump, release or otherwise discharge or dispose off any such materials without the authorization of OWNER/ HNGPL.

Suitable scaffoldings shall be provided to workmen for all works that cannot be safely done from the ground or from solid construction except such short period work that can be safely done using ladders. When a ladder is used, an extra workman shall be engaged for holding the ladder.

The contractor shall ensure that the scaffolds used during construction activities shall be strong enough to take the designed load. Owner / HNGPL reserves the right to ask the contractor to submit certification and or design calculations from his Engineering regarding load carrying capacity of the scaffoldings.

All scaffolds shall be inspected by a Scaffolding Inspector of the contractor. He shall paste a GREEN tag on each scaffold found safe and a RED tag on each scaffold found unsafe. Scaffolds with GREEN tag only shall be permitted to be used and RED ones shall immediately be removed from the

site.

All electrical installations / connections shall be carried out as per the provisions of latest revision of following codes/standards, in addition to the requirements of Statutory Authorities and IE / applicable international rules & regulations:

- OISO SID 173 : Fire prevention & protection system for electrical installations
- SP 30 (BIS) : National Electric Code

All electrical installations shall be approved by the concerned statutory authorities.

- The contractor shall meet the following requirements:

i) Ensure that electrical systems and equipment including tools & tackles used during construction phase are properly selected, installed, used and maintained as per provisions of the latest revision of the Indian Electrical / applicable international regulations.

ii) Shall deploy qualified & licensed electricians for proper & safe installation and for regular inspection of construction power

distribution system / points including their earthing. A copy of the license shall be submitted to HNGPL / Owner for records. Availability of at least one competent licensed electrician shall be ensured at site round the clock to attend to the normal / emergency jobs.

iii) All switchboards / welding machines shall be kept in well-ventilated & covered shed. The shed shall be elevated to avoid water logging. No flammable materials shall be used for constructing the shed. Also flammable materials shall not be stored in and around electrical equipment / switchboard. Adequate clearances and operational space shall be provided around the equipment.

iv) Fire extinguishers and insulating mats shall be provided in all power distribution centers.

v) Temporary electrical equipment shall not be employed in hazardous area without obtaining safety permit.

vi) Proper house keeping shall be done around the electrical installations.

vii) All temporary installations shall be tested before energising, to ensure proper earthing, bonding, suitability of protection system, adequacy of feeders/cables etc.

viii) All welders shall use hand gloves irrespective of holder voltage.

ix) Multilingual (Hindi, English and local language) caution boards, shock treatment charts and instruction plate containing location of isolation point for incoming supply, name & telephone No. of contact person in emergency shall be provided in substations and near all distribution boards / local panels.

x) Operation of earth leakage device shall be checked regularly by temporarily connecting series test lamp (2 bulbs of equal rating connected in series) between phase and earth.

xi) Regular inspection of all installations (at least once in a month)

- The following features shall also be ensured for all electrical installations during construction phase by the contractor:

  i) Each installation shall have a main switch with a protective device, installed in an enclosure adjacent to the metering point. The operating height of the main switch shall not exceed 1.5 M. The main switch shall be connected to the point of supply by means of armoured cable.

  ii) The outgoing feeders shall be double or triple pole switches with fuses / MCBs. Loads in a three phase circuit shall be balanced as far as possible and load on neutral should not exceed 20% of load in the phase.

  iii) The installation shall be adequately protected against overload, short circuit and earth leakage by the use of suitable protective devices. Fuses wherever used shall be HRC type. Use of rewirable fuses shall be strictly prohibited. The earth leakage device shall have an operating current not exceeding 30 mA.

  iv) All connections to the hand tools / welding receptacles shall be taken through proper switches, sockets and plugs.

  v) All single phase sockets shall be minimum 3 pin type only. All unused sockets shall be provided with socket caps.

  vi) Only 3 core (P+N+E) overall sheathed flexible cables with minimum conductor size of 1.5 mm^2 copper shall be used for all single phase hand tools.

  vii) Only metallic distribution boxes with double earthing shall be used at site. No wooden boxes shall be used.

  viii) All power cables shall be terminated with compression type cable glands. Tinned copper lugs shall be used for multistrand wires / cables.

  ix) Cables shall be free from any insulation damage.

  x) Minimum depth of cable trench shall be 750 mm for MV & control cables and 900 mm for HV cables. These cables shall be laid over a sand layer and covered with sand, brick & soil for ensuring mechanical protection. Cables shall not be laid in waterlogged area as far as practicable. Cable route markers shall be provided at every 25 M of buried trench route. When laid above ground, cables shall be properly cleated or supported on rigid poles of atleast 2 M high. Minimum head clearance of 6 meters shall be provided at road crossings.

  xi) Under ground road crossings for cables shall be avoided to the extent feasible. In any case no under ground power cable shall be allowed to cross the roads without pipe sleeve.

  xii) All cable joints shall be done with proper jointing kit. No taped / temporary joints shall be used.

  xiii) An independent earthing facility should preferably be established within the temporary installation premises. All appliances and

equipment shall be adequately earthed. In case of armoured cables, the armour shall be bonded to the earthing system.

xiv) All cables and wire rope used for earth connections shall be terminated through tinned copper lugs.

xv) In case of local earthing, earth electrodes shall be buried near the supply point and earth continuity wire shall be connected to local earth plate for further distribution to various appliances. All insulated wires for earth connection shall have insulation of green colour.

xvi) Separate core shall be provided for neutral. Earth / Structures shall not be used as a neutral in any case.

xvii) ON/OFF position of all switches shall be clearly designated / painted for easy isolation in emergency.

The contractor shall identify all operations that can adversely affect the health of its workers and issue & implement mitigation measures.

For surface cleaning operations, sand blasting shall not be permitted even if not explicitly stated elsewhere in the contract.

To eliminate radiation hazard, Tungsten electrodes used for Gas Tungsten Arc Welding shall not contain Thorium.

Appropriate respiratory protective devices shall be used to protect workmen from inhalation of air borne contaminants like silica, asbestos, gases, fumes, etc.

Workmen shall be made aware of correct methods for lifting, carrying, pushing & pulling of heavy loads. Wherever possible, manual handling shall be replaced by mechanical lifting equipments.

For jobs like drilling / demolishing / dismantling where noise pollution exceeds the specified limit of 85 decibels, ear muffs shall be provided to the workers.

To avoid upper limb disorders and backaches, Display Screen Equipments' workplace stations shall be carefully designed & used with proper sitting postures. Power driven hand-held tools shall be maintained in good working condition to minimize their vibrating effects and personnel using these tools shall be taught how to operate them safely & how to maintain good circulation in hands.

The contractor shall arrange health check up for all the workers at the time of induction. Health check may have to be repeated if the nature of duty assigned to him is changed necessitating health check or doubt arises about his wellness. HNGPL / Owner reserve the right to ask the contractor to submit test reports.

Weather Protection

Contractor shall take appropriate measures to protect workers from severe storms, solar radiations, poisonous gases, dust, etc. by ensuring proper usage of PPEs like Sun glasses, Sun screen lotions, respirators, dust masks, etc. and rearranging / planning the construction activities to suit the weather conditions.

Communication

All persons deployed at the work site shall have access to effective means of communication so that any untoward incident can be reported immediately and assistance sought by them.

All health & safety information shall be communicated in a simple & clear language easily

understood by the local workforce.

Unsuitable Land Conditions

Contractor shall take appropriate measures and necessary work permits / clearances if work is to be done in or around marshy areas, river crossings, mountains, monuments, etc.

Under Water Inspection

Contractor shall ensure that boats and other means used for transportation, surveying & investigation works shall be certified seaworthy by a recognized classification society. It shall be equipped with all life saving devices like life jackets, adequate fire protection arrangements and shall posses communication facilities like cellular phones, wireless, walkie-talkie. All divers used for seabed surveys, underwater inspections shall have required authorized license, suitable life saving kit. Number of hours of work by divers shall be limited as per regulations. HNGPL / Owner shall have the right to inspect the boat and scrutinize documents in this regard.

TOOL BOX MEETING (TBM)

Contractor shall conduct daily TBM with workers prior to start of work and shall maintain proper record of the meeting. A suggested format is given below. The TBM is to be conducted by the immediate supervisor of the workers.

TOOLBOX MEETING RECORDING SHEET

Date & Time		
Subject		
Presenter		
Hazards involved		
Precautions to be taken		
Worker's Name	Signature	Section
Remarks, if any		

The topics during TBM shall include

- Hazards related to work assigned on that day and precautions to be taken.
- Any forthcoming HSE hazards / events / instruction / orders, etc.

The above record can be kept in local language, which workers can read. These records shall be made available to HNGPL / Owner whenever demanded.

TRAINING

Contractor shall ensure that all his personnel possess appropriate training to carry out the assigned job safely. The training should be imparted in a language understood by them and should specifically be trained about

- Potential hazards to which they may be exposed at their workplace
- Measures available for prevention and elimination of these hazards

The topics during training shall cover, at the minimum;

- Education about hazards and precautions required
- Emergency and evacuation plan
- HSE requirements
- Fire fighting and First-Aid
- Use of PPEs
- Local laws on intoxicating drinks, drugs, smoking in force

Records of the training shall be kept and submitted to HNGPL / Owner whenever demanded.

For offshore and jetty jobs, contractor shall ensure that all personnel deployed have undergone a structured sea survival training including use of lifeboats, basket landing, use of radio communication etc. from an agency acceptable to Owner / HNGPL.

INSPECTION

The contractor shall carryout daily HSE inspection and record observations at a central location. These inspection records shall be freely accessible to Owner / HNGPL representatives. The contractor shall also assist Owner / HNGPL representatives during the HSE inspections conducted by them.

ADDITIONAL SAFETY REQUIREMENTS FOR WORKING INSIDE A RUNNING PLANT

As a minimum, the contractor shall ensure adherence to following safety requirements while working in or in the close vicinity of an operating plant :

a) Contractor shall obtain permits for Hot work, Cold work, Excavation and Confined Space from Owner in the prescribed format.

b) The contractor shall monitor, record and compile list of his workers entering the operational plant/unit each day and ensure & record their return after completing the job.

c) Contractor's workers and staff members shall use designated entrances and proceed by designated routes to work areas only assigned to them. The workers shall not be allowed to enter units' area, tanks area, pump rooms, etc. without work authorization permit.

d) Work activities shall be planned in such a way so as to minimize the disruption of other activities being carried out in an operational plant / unit and activities of other contractors.

e) The contractor shall submit a list of all chemicals / toxic substances that are intended to be used at site and shall take prior approval of the Owner.

f) Specific training on working in a hydrocarbon plant shall be imparted to the work force and mock drills shall be carried out for Rescue operations / First-Aid measures.

g) Proper barricading / cordoning of the operational units / plants shall be done before starting the construction activities. No unauthorized person shall be allowed to trespass. The height and overall design of the barricading structure shall be finalized in consultation with the Owner and shall be got approved from the Owner.

h) Care shall be taken to prevent hitting underground facilities such as electrical cables, hydrocarbon piping during execution of work.

i) Barricading with water curtain shall be arranged in specific/critical areas where hydrocarbon vapors are likely to be present such as near horton spheres or tanks. Positioning of fire tenders (from owner) shall also be ensured during execution of critical activities.

j) Emergency evacuation plan shall be worked out and all workmen shall be apprised about evacuation routes. Mock drill operations may also be conducted.

k) Flammable gas test shall be conducted prior to any hot work using appropriate measuring instruments. Sewers, drains, vents or any other gas escaping points shall be covered with flame retardant tarpaulin.

l) Respiratory devices shall be kept handy while working in confined zones where there is a danger of inhalation of poisonous gases. Constant monitoring of presence of Gas / Hydrocarbon shall be done.

m) Clearance shall be obtained from all parties before starting hot tapping, patchwork on live lines and work on corroded tank roof.

n) Positive isolation of line/equipment by blinding for welding/cutting/grinding shall be done. Closing of valve will not be considered sufficient for isolation.

o) Welding spatters shall be contained properly and in no case shall be allowed to fall on the ground containing oil. Similar care shall be taken during cutting operations.

p) The vehicles, cranes, engines, etc. shall be fitted with spark arresters on the exhaust pipe and got it approved from Safety Department of the Owner.

q) Plant air should not be used to clean any part of the body or clothing or use to blow off dirt on the floor.

r) Gas detectors should be installed in gas leakage prone areas as per requirement of Owner's plant operation personnel.

s) An experienced full time safety personnel shall be exclusively deployed to monitor safety aspects in running plants.

HSE PROMOTION

The contractor shall encourage his workforce to promote HSE efforts at workplace by way of organizing workshops / seminars / training programmes, celebrating HSE awareness weeks & National Safety Day, conducting quizzes & essay competitions, distributing pamphlets, posters & material on HSE, providing incentives for maintaining good HSE practices and granting bonus for completing the job without any lost time accident.

4.0 DETAILS OF HSE MANAGEMENT SYSTEM BY CONTRACTOR

4.1 On Award of Contract

The Contractor shall prior to start of work submit his Health. Safety and Environment Manual of procedure and HSE Plans for approval by OWNER/HNGPL. The Contractor shall participate in the pre-start meeting with OWNER/HNGPL to finalize HSE plans including the following.

- Job procedure to be followed by Contractor for activities covering Handling of equipment’s, Scaffolding, Electric Installation, describing the risks involved, actions to be taken and methodology for monitoring each.

- Organizations structure alongwith responsibility and authority records/ reports etc. on HSE activities.

4.2 During job execution

4.2.1 Implement approved Health, Safety and Environment management procedure including but not limited to as brought our under para 3.0. Contractor shall also ensure to:

- Arrange workmen compensation insurance, registration under ESI Act, third party liability insurance etc. as applicable.

- Arrange all HSE permits before start of activities (as applicable) like her work, confined space, work at heights, storage of Chemicals/explosives materials and its use and implement all precautions mentioned therein

- Submit timely the completed check list on HSE activities, Monthly HSE report, accident report, investigation report, etc. as per OWNER/HNGPL requirements. Compliance of instructions on HSE shall be done by Contractor and informed urgently to OWNER/HNGPL.

- Ensure that resident Engineers/Site-In-Charge of the Contractor shall amend all the Safety Committee/HSE meeting arranged by OWNER/ HNGPL only in case of his absence from site, a seconds senior most person shall be nominated by him in advance and communicated to OWNER/HNGPL.

- Display at site office and work locations caution boards, list of hospitals for emergency services available.

- Provided posters, banners, for safe working to promote safety consciousness

- Carryout audits/inspection at sub Contractor work as per approved HSE documents & submit the reports for OWNER/HNGPL review.

- Assist in HSE audits by OWNER/ HNGPL and submit compliance report.

- Generate & submit HSE records/ reports as per HSE Plan.

- Appraise OWNER/HNGPL on HSE activities at site.

5.0 RECORDS

At the minimum, the contractor shall maintain/ submit HSE records in the following reporting formats:

1.	Monthly HSE Checklist cum compliance report	HSE-1
2.	Accident / Incident Report	HSE-2
3.	Supplementary Accident / Incident Investigation report	HSE-3
4.	Near Miss Incident Report	HSE-4
5.	Monthly HSE Report	HSE-5
6.	Permit for working at height	HSE-6
7.	Permit for working in confined space	HSE-7
8.	Permit for radiation work	HSE-8
9.	Permit for demolishing / dismantling	HSE-9

ANNEXURE-A

A. I.S. CODES ON HSE

SP:53	Safety code for the use, Care and protection of hand operated tools.
IS: 818	Code of practice for safety and health requirements in electric and gas welding and cutting operations
IS: 1179	Eye and Face precautions during welding, equipment etc.
IS: 1860	Safety requirements for use, care and protection of abrasive grinding wheels.
IS: 1989(Part-I & II)	Leather safety boots and shoes
IS: 2925	Industrial Safety Helmets
IS: 3016	Code of practice for fire safety precautions in welding and cutting operations.
IS: 3043	Code of practice for earthing.
IS: 3764	Code of safety for excavation work
IS: 3786	Methods for computation of frequency and severity rates for industrial injuries and classification of industrial accidents.
IS: 3996	Safety Code of scaffolds and ladders.
IS: 4082	Recommendation on stacking and storage of construction materials and components at site.
IS: 4770	Rubber gloves for electrical purposes
IS: 5121	Safety code for piling and other deep foundations
IS: 5216 (Part-I)	Recommendations on Safety procedures and practices in electrical works
IS: 5557	Industrial and Safety rubber lined boots.
IS: 5983	Eye protectors
IS:6519	Selection, care and repair of Safety footwear
IS: 6994 (Part-I)	Industrial Safety Gloves (Leather & Cotton Gloves)
IS: 7293	Safety Code for working with construction Machinery
IS: 8519	Guide for selection of industrial safety equipment for body protection
IS: 9167	Ear protectors
IS: 11006	Flash back arrestor (Flame arrestor)
IS:11016	General and safety requirements for machine tools and their operation
IS: 11057	Specification for Industrial safety nets
IS: 11226	Leather safety footwear having direct moulded rubber sole
IS: 11972	Code of practice for safety precaution to be taken when entering a sewerage

	system
IS: 13367	Code of practice-safe use of cranes
IS: 13416	Recommendations for preventive measures against hazards at working place

B. INTERNATIONAL STANDARDS ON HSE

Safety Glasses	:	ANSI Z 87.1, ANSI ZZ 87.1, AS 1337, BS 2092, BS 1542, BS 679, DIN 4646 / 58211
Safety Shoes	:	ANSI Z 41.1, AS 2210, EN 345
Hand Gloves	:	BS 1651
Ear Muffs	:	BS 6344, ANSI S 31.9
Hard Hat	:	ANSI Z 89.1 / 89.2, AS 1808, BS 5240, DIN 4840
Goggles	:	ANSI Z 87.1
Face Shield	:	ANSI Z 89.1
Breathing Apparatus	:	BS 4667, NIOSH
Welding & Cutting	:	ANSI Z 49.1
Safe handling of compressed Gases in cylinders	:	P-1 (Compressed Gas Association 1235 Jefferson Davis Highway, Arlington VA 22202 – USA)

ANNEXURE-B

DETAILS OF FIRST AID BOX

SL. NO	DESCRIPTION	*QUANTITY*
1.	Small size Roller Bandages, 1 inch wide (Finger Dressing small)	6 Pcs.
2.	Medium size Roller Bandages, 2 inch wide (Hand and Foot Dressing)	6 Pcs.
3.	Large size Roller Bandages, 4 inch wide (Body Dressing Large)	6 Pcs.
4.	Large size Burn Dressing (Burn Dressing Large)	4 Pkts.
5.	Cotton wool (20 gms packing)	4 Pkts.
6.	Antiseptic Solution Dettol (100 ml.) or Savlon	1 Bottle
7.	Mercurochrome Solution (100 ml.) 2% in water	1 Bottle
8.	Ammonia Solution (20 ml.)	1 Bottle
9.	A Pair of Scrissors	1 Piece
10.	Adhesive Plaster (1.25 cm x 5 m)	1Spool
11.	Eye pads in Separate Sealed Packet	4 Pcs.
12.	Tourniqut	1 No.
13.	Safety Pins	1 Dozen
14.	Tinc. Iodine / Betadin (100 ml.)	1 Bottles
15.	Ointment for burns (Burnol 20 gms.)	1 Bottole
16.	Polythene Wash cup for washing eyes	1 No.
17.	Potassium Permanganate (20 gms.)	1 Pkt.
18.	Tinc. Benzoine (100 ml.)	1 Bottole
19.	Triangular Bandages	2 Nos.
20.	Band Aid Dressing	5 Pcs.
21.	Iodex / Moov (25 gms.)	1 Bottole
22.	Tongue Depressor	1 No.
23.	Boric Acid Powder (20 gms.)	2 Pkt.
24.	Sodium Bicarbonate (20 gms.)	1 Pkt.
25.	Dressing Powder (Nebasulf) (10 gms.)	1 Bottole
26.	Medicinal Glass	1 No.
27.	Duster	1 No.
28.	Booklet (English & Local Language)	1 No. each
29.	Soap	1 No.
30.	Toothache Solution	1 No.
31.	Eye Ointment	1 Bottle
32.	Vicks (22 gms.)	1 Bottle
33.	Forceps	1 No.
34.	Cotton Buds (5 nos.)	1 Pkt.
35.	Note Book	1 No.
36.	Splints	4 Nos.
37.	Lock	1 Piece
38.	Life Saving/Emergency/Over-the Counter Drugs	As decided at site
	Box size : 14” x 12” x 4”	

Note : The medicines prescribed above are only indicative. Equivalent medicines can also be used. A prescription, in this regard, shall be required from a qualified Physician.

ANNEXURE – C

TYPE OF FIRES VIS-À-VIS FIRE EXTINGUISHERS

Fire	Fire Extinguishers				
	Water	**Foam**	**CO_2**	**Dry Powder**	**Multi Purpose (ABC)**
Originated from paper, clothes, wood	□	□	Can control minor surface fires	Can control minor surface fires	□
Inflammable liquids like alcohol, diesel, petrol, edible oils, bitumen	x	□	□	□	□
Originated from gases like LPG, CNG, H_2	x	x	□	□	□
Electrical Fires	x	x	□	□	□

Legend : □ Can be used
x Not to be used

Note : Fire extinguishing equipment must be checked atleast once a year and after every use by an authorized person. The equipment must have an inspection label on which the next inspection date is giver:. Type of extinguisher shall clearly be marked on it.

ANNEXURE – D

Indicative List of Statutory Acts & Rules Relating to HSE

- The Indian Explosives Act and Rules
- The Motor Vehicle Act and Central Motor Vehicle Rules
- The Factories Act and concerned Factory Rules
- The Petroleum Act and Petroleum Rules
- The Workmen Compensation Act
- The Gas Cylinder Rules and the Static & Mobile Pressure Vessels Rules.
- The Indian Electricity Act and Rules
- The Indian Boiler Act and Regulations
- The Water (Prevention & Control & Pollution) Act
- The Water (Prevention & Control of Pollution) Cess Act
- The Mines & Minerals (Regulation & Development) Act
- The Air (Prevention & Control of Pollution) Act
- The Atomic Energy Act
- The Radiation Protection Rules
- The Indian Fisheries Act
- The Indian Forest Act
- The Wild Life (Protection) Act
- The Environment (Protection) Act and Rules
- The Hazardous Wastes (Management & Handling) Rules
- The Manufacturing, Storage & import of Hazardous Chemicals Rules
- The Public Liability Act
- The Building and Other Construction Workers (Regulation of Employment and Condition of service) Act
- Other statutory acts Like EPF, ESIS, Minimum Wage Act.

ANNEXURE – E

CONSTRUCTION HAZARDS, THEIR EFFECTS & PREVENTIVE MEASURES

ACTIVITY	*TYPE OF HAZARD*	EFFECT OF HAZARD	PREVENTIVE MEASURES
(A) EXCAVATION Pit Excavation up to 3.0m	▶ Falling into pit	▶ Personal injury	▶ Provide guard rails/barricade with warning signal. ▶ Provide at least two entries/exits. ▶ Provide escape ladders.
	▶ Earth Collapse	▶ Suffocation / Breathlessness ▶ Buried	▶ Provide suitable size of shoring and strutting, if required. ▶ Keep soil heaps away from the edge equivalent to 1.5m or depth of pit whichever is more. ▶ Don't allow vehicles to operate too close to excavated areas. Maintain at least 2m distance from edge of cut. ▶ Maintain sufficient angle of repose. Provide slope not less than 1:1 and suitable bench of 0.5m width at every 1.5m depth of excavation in all soils except hard rock. ▶ Battering/benching the sides.
	▶ Contact with buried electric cables ▶ Gas/ Oil Pipelines	▶ Electrocution ▶ Explosion	▶ Obtain permission from competent authorities, prior to excavation, if required. ▶ Locate the position of buried utilities by referring to plant drawings. ▶ Start digging manually to locate the exact position of buried utilities and thereafter use

ACTIVITY	*TYPE OF HAZARD*	EFFECT OF HAZARD	PREVENTIVE MEASURES
			mechanical means.
Pit Excavation beyond 3.0m	▶ Same as above plus ▶ Flooding due to excessive rain/ underground water	▶ Can cause drowning situation	▶ Prevent ingress of water ▶ Provide ring buoys ▶ Identify and provide suitable size dewatering pump or well point system

	▶ Digging in the vicinity of existing Building/ Structure	▶ Building/ Structure may collapse ▶ Loss of health & wealth	▶ Obtain prior approval of excavation method from local authorities ▶ Use under-pining method ▶ Construct retaining wall side by side
	▶ Movement of vehicles / equipments close to the edge of cut.	▶ May cause cave-in or slides ▶ Persons may get buried	▶ Barricade the excavated area with proper lighting arrangements ▶ Maintain at least 2m distance from edge of cut and use stop block to prevent over-run. ▶ Strengthen shoring and strutting
Narrow deep excavations for pipelines, etc.	▶ Same as above plus ▶ Frequent cave-in or slides	▶ May cause severe injuries or prove fatal	▶ Battering/benching of sides ▶ Provide escape ladders
	▶ Flooding due to Hydrostatic testing	▶ May arise drowning situation	▶ Same as above plus ▶ Bail out accumulated water ▶ Maintain adequate ventilation
Rock excavation by blasting	▶ Improper handling of explosives	▶ May prove fatal	▶ Ensure proper storage, handling & carrying of explosives by trained personnel. ▶ Comply with the applicable explosive acts & rules.
	▶ Uncontrolled explosion	▶ May cause severe injuries or prove fatal	▶ Allow only authorized persons to perform blasting operations. ▶ Smoking and open

ACTIVITY	***TYPE OF HAZARD***	**EFFECT OF HAZARD**	**PREVENTIVE MEASURES**
			flames are to be strictly prohibited.
	▶ Scattering of stone pieces in atmosphere	▶ Can hurt people	▶ Use PPE like goggles, face mask, helmets etc.
Rock excavating by blasting (Contd)	▶ Entrapping of persons/ animals.	▶ May cause severe injuries or prove fatal	▶ Barricade the area with red flags and blow siren before blasting.
	▶ Misfire	▶ May explode suddenly	▶ Do not return to site for at least 20 minutes or unless announced safe by designated person.
Piling Work	▶ Failure of pile-driving equipment	▶ Can hurt people	▶ Inspect Piling rigs and pulley blocks before the beginning of each shift.

	▶ Noise pollution	▶ Can cause deafness ▶ and psychological imbalance	▶ Use personal protective equipments like ear plugs, muffs, etc.
	▶ Extruding rods / casing	▶ Can hurt people	▶ Barricade the area an install sign boards ▶ Provide first-aid
	▶ Working in the vicinity of 'Live-Electricity'	▶ Can cause electrocution / asphyxiation	▶ Keep sufficient distance from Live-Electricity as per IS code. ▶ Shut off the supply, if possible ▶ Provide artificial/rescue breathing to he injured.
(B) CONCRETING	▶ Air pollution by cement	▶ May affect Respiratory System	▶ Wear respirators or cover mouth and nose with wet cloth.
	▶ Handling of ingredients	▶ Hand s may get injured	▶ Use gloves and other PPE.
	▶ Protruding reinforcement rods.	▶ Feet may get injured	▶ Use Safety shoes. ▶ Provide platform above reinforcement for movement of workers.
	▶ Earthing of electrical mixers,	▶ Can cause electrocution / asphyxiation	▶ Ensure earthing of equipments and proper functioning of

ACTIVITY	***TYPE OF HAZARD***	**EFFECT OF HAZARD**	**PREVENTIVE MEASURES**
	vibrators, etc. not done		electrical circuit before commencement of work.
	▶ Falling of materials from height	▶ Persons may get injured	▶ Use hard hats ▶ Remove surplus material immediately from work place ▶ Ensure lighting arrangements during night hours.
	▶ Continuous pouring by same gang	▶ Cause tiredness of workers and may lead to accident.	▶ Insist on shift pattern ▶ Provide adequate rest to workers between subsequent pours.
	▶ Revolving or concrete mixer/ vibrators	▶ Parts of body or clothes may get entrapped.	▶ Allow only mixers with hopper ▶ Provide safety cages around moving motors ▶ Ensure proper mechanical locking of vibrator

Super-structure	▶ Same as above plus ▶ Deflection in props or shuttering material	▶ Shuttering / props may collapse and prove fatal	▶ Avoid excessive stacking on shuttering material ▶ Check the design and strength of shuttering material before commencement of work ▶ Rectify immediately the deflection noted during concreting
	▶ Passage to work place	▶ Improperly tied and designed props / planks may collapse	▶ Ensure the stability and strength of passage before commencement of work ▶ Do not overload and under the passage.
(C) REINFORCEMENT	▶ Curtailment and binding of rods	▶ Persons may get injured	▶ Use PPE like gloves, shoes, helmets, etc. ▶ Avoid usage of shift tools
	▶ Carrying of rods for short distance/ at	▶ Workers may injure their hands and shoulders	▶ Provide suitable pads on shoulders and use safety

ACTIVITY	***TYPE OF HAZARD***	**EFFECT OF HAZARD**	**PREVENTIVE MEASURES**
	heights		gloves. ▶ Tie up rods in easily liftable bundles ▶ Ensure proper staging.
	▶ Checking of clear distance/ cover with hands	▶ Rods may cut or injure the finger	▶ Use measuring devices tape, measuring rods, etc.
	▶ Hitting projected rods and standing on cantilever rods	▶ Persons may get injured and fall down	▶ Use safety shoes and avoid standing unnecessarily on cantilever rods ▶ Avoid wearing loose clothes
	▶ Falling of material from height	▶ May prove fatal	▶ Use helmets ▶ Provide safety nets
	▶ Transportation of rods by trucks / trailers	▶ Protruded rods may hit the persons	▶ Use red flags/lights at the ends ▶ Do not protrude the rods in front of or by the side of driver's cabin. ▶ Do not extend the rods 1/3rd of deck length or 1.5 m which is less

(D) WELDING AND GAS CUTTING	▶ Welding radiates invisible ultraviolet and infrared says	▶ Radiation can damage eyes and skin.	▶ Use specified shielding devices and other PPE of correct specifications ▶ Avoid throated tungsten electrodes for GTAW.
	▶ Improper placement of oxygen and acetylene cylinders	▶ Explosion may occur	▶ Move out any leaking cylinder ▶ Keep cylinder in vertical position ▶ Use trolley for transportation of cylinders and chain them ▶ Use flash back arrestors
	▶ Leakage / cuts in hoses	▶ May cause fire	▶ Purge regulators immediately and then turn off ▶ Never use grease or

ACTIVITY	*TYPE OF HAZARD*	EFFECT OF HAZARD	PREVENTIVE MEASURES
			oil on oxygen line connections and copper fittings on acetylene lines ▶ Inspect regularly gas carrying hoses ▶ Always use red hose for acetylene & other fuel gases and black for oxygen.
	▶ Opening-up of cylinder	▶ Cylinder may burst	▶ Always stand back from the regulator while opening the cylinder ▶ Turn valve slowly to avoid bursting ▶ Cover the lug terminals to prevent short circuiting.
	▶ Welding of tanks, container or pipes storing flammable liquids	▶ Explosion may occur	▶ Empty & purge them before welding ▶ Never attach the ground cable to tanks, container or pipe storing flammable liquids ▶ Never use LPG for gas cutting

(E) RADIOGRAPHY	▶ Ionizing Radiation	▶ Radiations may react with the skin and can cause cancer, skin irritation, dermatitis, etc.	▶ Ensure safety regulations as per BARC/AERB before commencement of job. ▶ Cordon off the area and install Radiation warning symbols ▶ Restrict the entry of unauthorized persons ▶ Wear appropriate PPE and film badges issued by BARC/AERB
	▶ Transportation and Storage of Radiography source	▶ Same as above	▶ Never touch or handle radiography source with hands ▶ Store radiography source inside a pit in an exclusive isolated

ACTIVITY	*TYPE OF HAZARD*	EFFECT OF HAZARD	PREVENTIVE MEASURES
			storage room with lock and key arrangement. The pit should be approved by BARC/AERB ▶ Radiography source should never be carried either in passenger bus or in a passenger compartment of trains. ▶ BARC/AERB have to be informed before source movement. ▶ Permission from Director General of Civil Aviation is required for booking radio isotopes with airlines.
	▶ Loss of Radio isotope	▶ Same as above	▶ Try to locate with the help of Survey Meter. ▶ Inform BARC/AERB(*) (*) Atomic Energy Regulatory Board (AERB), Bhabha Atomic Research Centre (BARC) Anushaktinagar, Mumbai – 400 094

(F) ELECTRICAL INSTALLATION AND USAGE	▶ Short circuiting	▶ Can cause Electrocution or Fire	▶ Use rubberized hand gloves and other PPE ▶ Don't lay wires under carpets, mats or door ways. ▶ Allow only licensed electricians to perform on electrical facilities ▶ Use one socket for one appliance ▶ Ensure usage of only fully insulated wires or cables ▶ Don't place bare wire ends in a socket

ACTIVITY	***TYPE OF HAZARD***	**EFFECT OF HAZARD**	**PREVENTIVE MEASURES**
			▶ Ensure earthing of machineries and equipments ▶ Do not use damaged cords and avoid temporary connections ▶ Use spark-proof/flame proof type field distribution boxes. ▶ Do not allow open/bare connections ▶ Provide all connections through ELCB ▶ Protect electrical cables / equipment's from water and naked flames ▶ Check all connections before energizing.
	▶ Overloading of Electrical System	▶ Bursting of system can occur which leads to fire	▶ Display voltage and current ratings prominently with 'Danger' signs. ▶ Ensure approved cable size, voltage grade and type. ▶ Switch off the electrical utilities when not in use. ▶ Do not allow unauthorized connections. ▶ Ensure proper grid wise distribution of Power.

	▶ Improper laying of overhead and underground transmission lines / cables	▶ Can cause electrocution and prove fatal	▶ Do not lay unarmored cable directly on ground, wall, roof of trees ▶ Maintain at least 3m distance from HT cables ▶ All temporary cables should be laid at least 750 mm below ground on 100 mm

ACTIVITY	***TYPE OF HAZARD***	**EFFECT OF HAZARD**	**PREVENTIVE MEASURES**
			fine sand overlying by brick soling ▶ Provide proper sleeves at crossings/ intersections ▶ Provide cable route markers indicating the type and depth of cables at intervals not exceeding 30m and at the diversions / termination.
(G) FIRE PREVENTION AND PROTECTION	▶ Small fires can become big ones and may spread to the surrounding areas	▶ Cause burn injuries and may prove fatal.	▶ In case a fire breaks out, press fire alarm system and shout “Fire, Fire” ▶ Keep buckets full of sand & water/fire extinguishing equipment near hazardous locations ▶ Confine smoking to ‘Smoking Zones’ only ▶ Train people for using specific type of fire equipments under different classes of fire ▶ Keep fire doors/ shutters, passages and exit doors unobstructed ▶ Maintain good house keeping and first-aid boxes (for detail refer Annex-2) ▶ Don’t obstruct assess to Fire extinguishers ▶ Do not use elevators for evacuation during fire ▶ Maintain lightening arrestors for elevated structures ▶ Stop all electrical motors with internal combustion. ▶ Move the vehicles from dangerous

ACTIVITY	*TYPE OF HAZARD*	EFFECT OF HAZARD	PREVENTIVE MEASURES
			locations. ▶ Remove the load hanging from the crane booms. ▶ Remain out of the danger areas.
	▶ Improper selection of Fire Extinguisher	▶ It may not extinguish the fire	▶ Ensure usage of correct fire extinguisher meant for the specified fire (for details refer Appendix-C) ▶ Do not attempt to extinguish Oil and electric fires with water. Use foam cylinders/CO_2/sand or earth.
	▶ Improper storage of highly inflammable substances	▶ Same as above	▶ Maintain safe distance of flammable substances from source of ignition ▶ Restrict the distribution of flammable materials to only min. necessary amount ▶ Construct specifically designed fuel storage facilities ▶ Keep chemicals in cool and dry place away from hat. Ensure adequate ventilation ▶ Before welding operation, remove or shield the flammable material properly ▶ Store flammable materials in stable racks, correctly labeled preferably with catchments trays. ▶ Wipe off the spills immediately

ACTIVITY	*TYPE OF HAZARD*	EFFECT OF HAZARD	PREVENTIVE MEASURES

	▶ Short circuiting of electrical system	▶ Same as above ▶ Can cause Electrocution	▶ Don't lay wires under carpets, mats or door ways ▶ Use one socket for one appliance ▶ Use only fully insulated wires or cables ▶ Do not allow open/bare connections ▶ Provide all connections through ELCB ▶ Ensure earthing of machineries and equipments
(H) VEHICULAR MOVEMENT	▶ Crossing the Speed Limits (Rash driving)	▶ Personal injury	▶ Obey speed limits and traffic rules strictly ▶ Always expect the unexpected and be a defensive drive ▶ Use sat belts/helmets ▶ Blow horn at intersections and during overtaking operations. ▶ Maintain the vehicle in good condition ▶ Do not overtake on curves, bridges and slopes
	▶ Adverse weather condition	▶ Same as above	▶ Read the road ahead and ride to the left ▶ Keep the wind screen and lights clean ▶ Do not turn at speed ▶ Recognize the hazard, understand the defense and act correctly in time.
	▶ Consuming alcohol before and during he	▶ Same as above	▶ Alcohol and driving do not mix well. Either choose

ACTIVITY	***TYPE OF HAZARD***	**EFFECT OF HAZARD**	**PREVENTIVE MEASURES**

	driving operation		alcohol or driving. ▶ If you have a choice between hitting a fixed object or an oncoming vehicle, hit the fixed object ▶ Quit the steering at once and become a passenger. Otherwise take sufficient rest and then drive. ▶ Do not force the driver to drive fast and round the clock ▶ Do not day dram while driving
	▶ Falling objects / Mechanical failure	▶ May prove fatal	▶ Ensure effective braking system, adequate visibility for the drives, reverse warning alarm. ▶ Proper maintenance of the vehicle as per manufacturer instructions
(I) PROOF TESTING (HYDROSTATIC/ PNEUMATIC TESTING	▶ Bursting of piping ▶ Collapse of tanks ▶ Tanks flying off	▶ May cause injury and prove fatal	▶ Prepare test procedure & obtain CONSULTANT/ Owner's approval ▶ Provide separate gauge for pressurizing pump and piping/equipment ▶ Check the calibration status of all pressure gauges, dead weight testers and temperature recorders ▶ Take dial readings at suitable defined intervals and ensure most of them fall between 40-60% of the gauge scale range ▶ Provide safety relief valve (set at

ACTIVITY	***TYPE OF HAZARD***	**EFFECT OF HAZARD**	**PREVENTIVE MEASURES**

			pressure slightly higher than test pressure) while testing with air/nitrogen ▶ Ensure necessary precautions, stepwise increase in pressure, tightening of bolts/ nuts, grouting, etc. before and during testing ▶ Keep the vents open before opening any valve while draining out of water used for hydro testing of tanks ▶ Pneumatic testing involves the hazard of released energy shored in compressed gas. Specific care must therefore be taken to minimize the chance of brittle failure during a pneumatic leak test. Test temperature is important in this regard and must be considered when the designer chooses the material of construction ▶ A pressure relief device shall be provided, having a set pressure not higher than the test pressure plus the lesser of 345 KPa (50 psi) or 10% of he test pressure. The gas used as test fluid, if not air, shall be nonflammable and nontoxic.
(J) WORKING AT HEIGHTS	▶ Person can fall down	▶ May sustain severe injuries or	▶ Provide guard rails/barricade at the

ACTIVITY	*TYPE OF HAZARD*	EFFECT OF HAZARD	PREVENTIVE MEASURES

		prove fatal	work place ▶ Use PPE like safety belts, full body harness, life line, helmets, safety shoes, etc. ▶ Obtain a permit before starting the work at height above 3 meters ▶ Fall arrest systems like safety nets, etc. must be installed ▶ Provide adequate working space (min. 0.6 m) ▶ Tie/weld working platform with fixed support ▶ Use roof top walk ladder while working on a slopping roofs ▶ Avoid movement on beams
		▶ May hit the scrap / material stacked at the ground or in between	▶ Keep the work place neat and clean ▶ Remove the scrap immediately
	▶ Material can fall down	▶ May hit the workers working at lower levels and prove fatal.	▶ Same as above plus ▶ Do not throw or drop material or equipment from height ▶ All tools to be carried in a toolkit bags or on working uniform ▶ Remove scrap from the planks ▶ Ensure wearing of helmet by the workers at low level
(K) CONFINED SPACES	▶ Suffocation / drowning	▶ Unconsciousness, death	▶ Use respiratory devices, if required ▶ Avoid over crowding inside a confined space ▶ Provide Exhaust Fans for ventilation ▶ Do not wear loose clothes, neck ties,

ACTIVITY	*TYPE OF HAZARD*	EFFECT OF HAZARD	PREVENTIVE MEASURES

			etc. ▶ Fulfill conditions of the permit. ▶ Check for presence of hydrocarbons, O_2 level ▶ Obtain work permit before entering a confined space ▶ Ensure that the connected piping of the equipment which is to be opened is pressure free, fluid has been drained, vents are open and piping is positively isolated by a blind flange
	▶ Presence of foul smell and toxic substances	▶ Inhalation can pose threat to life.	▶ Same as above plus ▶ Check for hydrocarbon and Aromatic compounds before entering a confined space ▶ Depute one person outside the confined space for continuous monitoring and for extending help in case of an emergency
	▶ Ignition / flame can cause fire	▶ Person may sustain burn injuries or explosion may occur	▶ Keep fire extinguishers at a hand distance ▶ Remove surplus material and scrap immediately ▶ Do not smoke inside a confined space ▶ Do not allow gas cylinders inside a confined space ▶ Use low voltage (24V) lamps for lighting ▶ Use tools with air motors or electric tools with max.

ACTIVITY	*TYPE OF HAZARD*	EFFECT OF HAZARD	PREVENTIVE MEASURES
			voltage of 24V ▶ Remove all equipments at the end of the day

(L) HANDLING AND LIFTING EQUPMENTS	▶ Failure of load lifting and moving equipments	▶ Can cause accident and prove fatal	▶ Avoid standing under the lifted load and within the operating radius of cranes ▶ Check periodically oil, brakes, gears, horns and tyre pressure of all moving machinery ▶ Check quality, size and condition of all chain pulley blocks, slings, U-clamps, D-shackles, wire ropes, etc. ▶ Allow crane to move only on hard, firm and leveled ground ▶ Allow lifting slings as short as possible and check gunny packings at the friction points ▶ Do not allow crane to tilt its boom while moving ▶ Install Safe Load Indicator ▶ Ensure certification by applicable authority.
	▶ Overloading of lifting equipments	▶ Can cause electrocution and fire	▶ Safe lifting capacity of derricks and winches written on them shall be got verified. ▶ The max safe working load shall be marked on all lifting equipments ▶ Check the weight of columns and other heavy items painted on them and accordingly decide about the crane

ACTIVITY	*TYPE OF HAZARD*	**EFFECT OF HAZARD**	**PREVENTIVE MEASURES**
			capacity, boom and angle of erection ▶ Allow only trained operators and riggers during crane operation

	▶ Overhead electrical wires	▶ Can cause electrocution and fire	▶ Do not allow boom or other parts of crane to come within 3 m reach of overhead HT cables ▶ Hook and load being lifted shall preferably remain in full visibility of crane operator.
(M) SCAFFOLDING, FORMWORK AND LADDERS	▶ Person can fall down	▶ Person may sustain severe injuries and prove fatal	▶ Provide guard rails for working at height ▶ Face ladder while climbing and use both hands ▶ Ladders shall extend about 1m above landing for easy access and tying up purpose ▶ Do not place ladders against movable objects and maintain base at ¼ unit of the working length of the ladder ▶ Suspended scaffolds shall not be less than 500 mm wide and tied properly with ropes ▶ No loose planks shall be allowed ▶ Use PPE, like helmets, safety shoes, etc.
	▶ Failure of scaffolding material	▶ Same as above	▶ Inspect visually all scaffolding materials for stability and anchoring with permanent structures. ▶ Design scaffolding

ACTIVITY	***TYPE OF HAZARD***	**EFFECT OF HAZARD**	**PREVENTIVE MEASURES**

			for max. load carrying capacity ▶ Scaffolding planks shall not be less than 50x250 mm full thickness lumber or equivalent. These shall be cleared or secured and must extend over the end supports by at least 150mm and not more that 300 mm ▶ Don't overload the scaffolds ▶ Do not splice short ladders to make a longer one. Vertical ladders shall not exceed 6m.
	▶ Material can fall down	▶ Persons working at lower level gets injured.	▶ Remove excess material and scrap immediately ▶ Carry the tools in a tool-kit bag only ▶ Provide safety nets
(N) STRUCTURAL WORKS	▶ Personal negligence and danger of fall	▶ Can cause injury or casualty	▶ Do not take rest inside rooms built for welding machines or electrical distribution system ▶ Avoid walking on beams at height ▶ Wear helmet with chin strap and safety belts when working at height ▶ Use hand gloves and goggles during grinding operations ▶ Cover or mark the sharp and projected edges ▶ Do not stand within the operating radius of cranes
	▶ Lifting / slipping of	▶ Same as above	▶ Do not stand under the lifted load

ACTIVITY	***TYPE OF HAZARD***	**EFFECT OF HAZARD**	**PREVENTIVE MEASURES**

	material		▶ Stack properly all the materials. Avoid slippage during handling ▶ Control longer pieces lifted up by cranes from both ends ▶ Remove loose materials from height ▶ Ensure tightening of all nuts and bolts
(O) PIPELINE WORKS	▶ Erection / lowering failure	▶ Can cause injury	▶ Do not stand under the lifted Load ▶ Do not allow any person to come within the radii of the side boom handling pipes ▶ Check the load carrying capacity of the lifting tools and tackles ▶ Use safe Load Indicators ▶ Use appropriate PPEs
	▶ Other	▶ Same as above	▶ Wear gum boots in marshy areas ▶ Allow only one person to perform signaling operations while lowering of pipes ▶ Provide night caps on pipes ▶ Provide end covers on pipes for stoppage of pigs while testing/cleaning operations.

FORMAT NO. : HSE-1, REV. 0

HSE CHECKLIST CUM COMPLIANCE REPORT (1/6)

Project: _____ Contractor :_____
Date: _____ Owner :_____
Inspection By:_____ Report No. :_____
Frequency : Fortnightly Job No :_____

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

SL. NO.	ITEM	YES	NO	REMARKS	ACTION
1	**HOUSEKEEPING**				
a)	Waste containers provided and used				
b)	Sanitary facilities adequate and clean				
c)	Passageways and Walkways clear				
d)	General neatness of working areas				
e)	Others				
2	**PERSONNEL PROTECTIVE EQUIPMENT**				
a)	Goggles; Shields				
b)	Face protection				
c)	Hearing protection				
d)	Safety shoes				
e)	Hand protection				
f)	Respiratory Masks etc.				
g)	Safety Belts				
h)	Safety Helmet/Hard Hat				
I)	Others				
3	**EXCAVATIONS/OPENINGS**				
a)	Openings properly covered or barricaded				
b)	Excavations shored				
c)	Excavations barricaded				
d)	Overnight lighting provided				
e)	Others				
4	**WELDING & GAS CUTTING**				
a)	Gas cylinders chained upright				
b)	Cables and hoses not obstructing				
c)	Screens or shields used				
d)	Flammable materials protected				
e)	Fire extinguisher(s) accessible				
f)	Others				
5	**SCAFFOLDING**				
a)	Fully decked platforms				
b)	Guard and intermediate rails in place				

SL. NO.	ITEM	YES	NO	REMARKS	ACTION
c)	Toe boards in place				
d)	Adequate shoring				
e)	Adequate access				
f)	Others				
6	**LADDERS**				
a)	Extension side rails 1m above				

b)	Top of landing				
c)	Properly secured				
d)	Angle + 70 from horizontal				
e)	Others				
7	**HOISTS, CRANES AND DERRICKS**				
a)	Condition of cables and sheaves OK				
b)	Condition of slings, chains, hooks and eyes OK				
c)	Inspection and maintenance logs maintained				
d)	Outriggers used				
e)	Signs/barricades provided				
f)	Signals observed and understood				
g)	Qualified operators				
h)	Others				
8	**MACHINERY, TOOLS AND EQUIPMENT**				
a)	Proper instruction				
b)	Safety devices				
c)	Proper cords				
d)	Inspection and maintenance				
e)	Others				
9	**VEHICLE AND TRAFFIC**				
a)	Rules and regulations observed				
b)	Inspection and maintenance				
c)	Licensed drivers				
d)	Others				
10	**TEMPORARY FACILITIES**				
a)	Emergency instructions posted				
b)	Fire extinguishers provided				
c)	Fire-aid equipment available				
d)	Secured against storm damage				
e)	General neatness				
f)	In accordance with electrical requirements				
g)	Others				
11	**FIRE PREVENTION**				
a)	Personnel instructed				
b)	Fire extinguishers checked				
c)	No smoking in Prohibited Areas				
d)	Hydrants Clear				

SL. NO.	ITEM	YES	NO	REMARKS	ACTION
e)	Others				
12	**ELECTRICAL**				
a)	Use of 3-core armoured cables				
b)	Usage of 'All insulated' or 'double insulated' electrical tools				
c)	All electrical connection are routed through ELCB				
d)	Natural Earthing at the source of power (main DB)				
e)	Continuity and tightness of earth conductor				
f)	Covering of junction boxes, panels and other energized wiring places				
g)	Ground fault circuit interrupters provided				
h)	Prevention of tripping hazards				
i)	Others				
13	**HANDLING AND STORAGE OF MATERIALS**				
a)	Properly stored or stacked				

b)	Passageways clear				
c)	Others				
14	**FLAMMABLE GASES AND LIQUIDS**				
a)	Containers clearly identified				
b)	Proper storage				
c)	Fire extinguishers nearby				
d)	Others				
15	**WORKING AT HEIGHT**				
a)	Erection plan and work permit obtained				
b)	Safety nets				
c)	Full body harness and lanyards; chute lines				
d)	Health Check record available for workers going up?				
e)	Others				
16	**CONFINED SPACE**				
a)	Work permit obtained				
b)	Test for toxic gas and sufficient availability of oxygen conducted				
c)	At least one person outside the confined space for monitoring deputed				
d)	Availability of sufficient means of entry, exit and ventilation				
e)	Fire extinguishers and first-aid facility ensured				
f)	Lighting provision made by using 24V lamps				
g)	Proper usage of PPEs ensured				
17	**RADIOGRAPHY**				
a)	Proper storage and handling of source as per BARC / AREB guidelines				
b)	Working permit obtained				
c)	Cordoning of the area done				

SL. NO.	ITEM	YES	NO	REMARKS	ACTION
d)	Use of appropriate PPE's ensured				
e)	Proper training to workers/supervisors imparted				
f)	Minimum occupancy of workplace ensured				
18	**HEALTH CHECKS**				
a)	Workers medically examined and found to fit for working : i) At heights ii) In confined space.				
b)	Availability of First-aid facilities				
c)	Proper sanitation at site, office and labour camps				
d)	Arrangement of medical facilities				
e)	Measures for dealing with illness				
f)	Availability of Portable drinking water for workmen & staff				
g)	Provision of crèches for children				
h)	Stand by vehicle available for evacuation of injured.				
19	**ENVIRONMENT**				
a)	Chemical and other effluents properly disposed				
b)	Cleaning liquid of pipes disposed off properly				
c)	Seawater used for hydro-testing disposed off as per agreed procedure				
d)	Lubricant Waste/Engine oils properly disposed				
e)	Waste from Canteen, offices, sanitation etc. disposed properly				

f)	Disposal of surplus earth, stripping materials, oily rags and combustible materials done properly				
g)	Green belt protection				

Signature of Resident
Engineer with Seal

FORMAT NO. : HSE-2, REV. 0

ACCIDENT / INCIDENT REPORT

(To be submitted by Contractor after every Accident / Incident within 24 hours)

Report No:_____
Date: _____

Name of Site:-_____
CONTRACTOR_____

Type of Accident / Incident : ☐ Fatal ☐ Other Lost Time ☐ Non Loss Time ☐ First-Aid case

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NAME OF THE INJURED……
AGE …….
FATHER'S NAME……..
SUB-CONTRACTOR M/S……..
DATE & TIME OF ACCIDENT……..
LOCATION ……

BRIEF DESCRIPTION OF ACCIDENT

CAUSE OF ACCIDENT

NATURE OF INJURY/DAMAGE

MEDICAL AID PROVIDED/ACTIONS TAKEN

INTIMATION TO LOCAL AUTHORITIES (IF APPLICABLE)

DATE: SIGNATURE OF CONTRACTOR WITH SEAL

To	:	OWNER……..	1 COPY
	:	RCM/SITE-IN-CHARGE, HNGPL	3 COPIES

→ Divisional Head (Constn.) through RCM
→ Project Manager HNGPL, through RCM

FORMAT NO. : HSE-3, REV. 0

SUPPLEMENTARY ACCIDENT / INCIDENT INVESTIGATION REPORT

Supplementary to Report No: _____(Copy enclosed)

Project:_____ Site:_____
Name of Work :_____ Date:_____
Contractor:_____ Work Order / LOI No. :_____

NAME OF THE INJURED ……
AGE : ……...
SUB-CONTRACTOR M/S……...
DATE & TIME OF ACCIDENT / INCIDENT ……
LOCATION……

BRIEF DESCRIPTION & CAUSE OF A ACCIDENT/ INCIDENT

NATURAL OF INJURY/DAMAGE

COMMENTS FROM MEDICAL PRACTITIONER WHO ATTENDED THE VICTIM/INJURED

SUGGESTED IMPROVEMENT IN THE WORKING CONDITION IF ANY

LOSS OF MANHOURS AND IMPACT ON SITE WORKS

ANY OTHER COMMENT BY SAFETY OFFICER.

DATE: SIGNATURE OF CONTRACTOR
WITH SEAL

To : OWNER…….. 1 COPY
: RCM/SITE-IN-CHARGE, HNGPL 3 COPIES

→ Divisional Head (Constn.) through RCM
→ Project Manager HNGPL, through RCM

FORMAT NO. : HSE-4, REV. 0

NEAR MISS INCIDENT – SUGGESTED PROFORMA

Report No: _____

Name of Site :_____ Date :_____

Name of Work :_____ Contractor :_____

INCIDENT REPORTED BY :

DATE & TIME OF INCIDENT :

LOCATION :

BRIEF DESCRIPTION OF INCIDENT

PROBABLE CAUSE OF INCIDENT

SUGGESTED CORRECTIVE ACTION

STEPS TAKEN TO AVOID RECURRENCE YES ☐ NO ☐

DATE: SIGNATURE OF CONTRACTOR
WITH SEAL

To : OWNER…….. 1 COPY
: RCM/SITE-IN-CHARGE, HNGPL 3 COPIES

→ Divisional Head (Constn.) through RCM
→ Project Manager HNGPL, through RCM

FORMAT NO. : HSE-5, REV. 0

MONTHLY HEALTH, SAFETY & ENVIRONMENT (HSE) REPORT
(To be submitted by each Contractor)

Actual work start Date:_____ For the Month of:_____
Project:_____ Report No:_____
Name of the Contractor:_____ Status as on:_____
Name of Work:_____ Name of Safety officer:_____

ITEM			UPTO PREVIOUS MONTH	THIS MONTH	CUMU-LATIVE
a)	Average number of Staff & Workmen (average daily headcount, not man days)				
b)	Manhours Worked				
c)	Number of HSE meeting organized at site				
d)	Number of HSE awareness programmes conducted at site				
e)	Number of Lost Time Accidents (LTA)	Fatal			
		Other LTA			
f)	Number of Loss time Injuries (LTI)	Fatalities			
		Other LTI			
g)	Number of Loss Time Accidents				
h)	Number of First Aid Cases				
i)	Number of Near Miss Incidents				
j)	Man-days lost due to accidents				
k)	LTA Free Manhours i.e. Number of LTA free manhours from the Lst LTA				
l)	Compensation cases raised with Insurance				
m)	Compensation case resolved and paid to workmen				
n)	Whether workmen compensation policy taken		Y/N		
o)	Whether workmen compensation policy valid		Y/N		
p)	Whether workmen registered under ESI Act		Y/N		
Remark					

DATE:

Safety Officer /Resident Engineer
(Signature and Name)

To : OWNER
: RCM/, HNGPL (2 COPIES)

FORMAT NO. : HSE-6, REV. 0

PERMIT FOR WORKING AT HEIGHT (ABOVE 2 METER)

Project Site : …… Sr. No.: ……
Name of the work: …… Date: ……
Name of Contractor : …….. Nature of Work : ……
Total No.of Workers: .....Exact location of work : ……
Duration of work: from ..…… to ……

The following items have been checked and compliance shall be ensured during the currency of the permit:

Sl.	ITEM	DONE	NOT REQD.
1.	Equipment/Work Area inspected	☐	☐
1.	Considered hazard from other routine/non-routine operations and concerned person alerted	☐	☐
2.	ELCB provided	☐	☐
3.	Proper lighting provided	☐	☐
4.	Area cordoned off.	☐	☐
5.	Precautions against public traffic taken	☐	☐
6.	Sound Scaffolding provided	☐	☐
7.	Adequate protected Platform provided	☐	☐
8.	Acces and Exit to the area (Ladder properly fixed)	☐	☐
9.	Floor Openings covered	☐	☐
10.	Safety Net provided	☐	☐
11.	Heath check of personnel	☐	☐

A. Following personal protective equipment are provided (mark) and used as relevant Safety helmet/Gloves/Goggles/Shoes/Face Shield/Life Line/Safety Belt/Safety Harness.

B. This permit shall be available at the work site at all times.

C. Permit shall be issued for maximum one week only (Monday to Sunday).

D. This permit shall be applicable in non-operational areas.

E. After completion of the work, used permits shall be preserved for record purposes.

F. Additional precautions, if any ……..……..

Permission is granted to work (See overleaf) = Yes/No

Name of Contractor's Supervisor
(Initiator)

Name of Contractor's Safety Officer
(Issuing Authority)

GRANT OF PERMIT AND EXTENSIONS

Sl. No.	**Validity Period From …… To ……**	**Work time From …..Hrs. To..... Hrs.**	**Initiator (Supervisor of Contractor)**	**Issuing Authority (Safety Officer) of Contractor**	**Verification by CONSULTANT with date**

Additional safety instructions, if any.

FORMAT NO. : HSE-7, REV. 0

CONFINED SPACE ENTRY PERMIT

Project Site : ..... Sr. No.: .....
Name of the work: ..... Date: .....
Name of Contractor : ..... Nature of Work : .....
Exact location of work : .....

Safety Requirements : POSITIVE ISOLATION OF THE VESSEL IS MANDATORY

(A) Has the equipment been ?								
Y	**NR**		**Y**	**NR**		**Y**	**NR**	
□	□	isolated from power / steam / air	□	□	water flushed &/or steamed	□	□	radiation sources removed
□	□	isolated from liquid or gases	□	□	Manways open & ventilated	□	□	Proper lighting provided
□	□	depressurized &/or drained	□	□	cont. inset gas flow arranged	□	□	
□	□	blanked / blinded / disconnected	□	□	adequately cooled	□	□	

(B) Expected Residual Hazards								
Y	**NR**		**Y**	**NR**		**Y**	**NR**	
□	□	lack of O_2	□	□	combustible gas / liquid	□	□	H_2S / toxic gases
□	□	corrosive chemicals	□	□	pyrophoric iron / scales	□	□	electricity / static
□	□	Heat / stream / frost	□	□	high humidity	□	□	ionizing radiation
□	□		□	□		□	□	

(C) Protective Measures								
Y	**NR**		**Y**	**NR**		**Y**	**NR**	
□	□	gloves	□	□	ear plug / muff	□	□	goggles / face shield
□	□	protective clothing	□	□	dust / gas / air line mask	□	□	personal gas alarm
□	□	Grounded air educater / blower / AC	□	□	attendant with SCBA / air mask	□	□	rescue equipment / team
□	□	Fire fighting arrangements	□	□	safety harness & lifeline	□	□	communication equipment
□	□		□	□		□	□	

Authorization / Renewal (It is safe to enter the confirmed space)

Date	**No. of Persons Allowed**	**Name of Persons allowed**	**Signature**		**Time**		**Signature**
			Contractor's Supervisor	**Contractor's Safety Officer**	**From**	**To**	**Workman**

Permit Closure :

(A) Entry □ was closed □ stopped □ will continue on

(B) □ Site left in a safe condition
□ Housekeeping done

(C) Multi lock □ removed □ key transferred
□ Ensured all men have come out □ Manways barricaded

Remarks, if any :

FORMAT NO. : HSE-8, REV. 0

RADIATION WORK PERMIT

Project : Sr. No.:

Name of the work : Date:

Name of Contractor : Job No. :

Location of work :

Source Strength :

Cordoned distance (m) :

Name of Radiographing agency : Approved by Owner / HNGPL ☐

The following items have been checked & compliance shall be ensured during currency of the permit :

S. No.	Item Description	Done
1.	Safety regulations as per BARC/AERB ensured while source in use/ in transit & during storage.	☐
2.	Area cordoned off.	
3.	Lighting arrangements for working during nights ensured.	
4.	Warning signs / flash lights installed.	
5.	Cold work permit taken (if applicable)	
6.	PPEs like film badges, dosimeters used.	

Additional precautions, if any _____

(Radiography Agency's BARC / AREB authorized Supervisor) (Contractor's Safety Officer)

Permission is granted.

Permit is valid from _____AM/PM _____Date to _____AM/PM _____ Date

(Signature of permit issuing authority)

Name : Designation : Date :

Permit renewal :

Permit extended upto		Additional precautions required, if any.	Sign of issuing authority with date
Date	**Time**		

Work completed / stopped / area cleared at _____Hrs. of Date _____

(Sign of permit issuing authority)
Name :

FORMAT NO. : HSE-9, REV. 0

RADIATION WORK PERMIT

Project : Sr. No.:

Name of the work : Date:

Name of Contractor : Job No. :

Name of Contractor :

Line No. / Equipment No. /Structure to be dismantled :

Location details of dismantling / demolition with sketch : (Clearly indicate the area)

The following items have been checked & compliance shall be ensured during currency of the permit :

S. No.	Item Description	Done	Not Applicable
1.	Services like power, gas supply, water, etc. disconnected.	☐	☐
2.	Dismantling / Demolishing method reviewed & approved.	☐	☐
3.	Usage of appropriate PPEs ensured.	☐	☐
4.	Precautions taken for neighboring structures	☐	☐
5.	First-Aid arrangements made	☐	☐
6.	Fire fighting arrangements ensured	☐	☐
7.	Precautions taken for blasting	☐	☐

(Contractor's Supervisor) (Contractor's Safety Officer)

Permission is granted.

(Permit issuing authority)
Name :
Date :

Completion Report :

Dismantling / Demolishing is completed on _____Date at _____Hrs.

Materials / debris transported to identified location ☐

Tagging completed (as applicable) ☐

Services like power, gas supply, water, etc. restored ☐

(Permit issuing authority)

CONDITIONS FOR ISSUE AND RECONCILIATIONOF MATERIAL
(ANNEXURE – 8 to SCC)

ANNEXURE-8 TO SCC

1.0 CONDITIONS FOR ISSUE OF MATERIALS

Whenever any material is issued by Owner, following conditions for issue of material inaddition to other conditions specified in the contract shall be applicable:

1.1 Necessary indents will have to be raised by the Contractor as per procedure laid down by the Engineer-in-Charge from time to time, when he requires the above material for incorporation in permanent works.

1.2 Materials will be issued only for permanent works and not for temporary works, enabling works etc. unless specifically approved by the Engineer-in-Charge and the same shall not be taken into account for the purpose of materials reconciliation.

1.3 The Contractor shall bear all other cost including lifting, carting from issue points to work site/Contractor's store, custody and handling etc. and return of surplus/serviceable scrap materials to Owner's storage points to be designated by the Engineer-in-Charge etc. No separate payment for such expenditure will be made.

1.4 No material shall be allowed to be taken outside the plant without a gate pass.

1.5 The Contractor shall be responsible for proper storage, preservation and watch & ward of the materials.

1.6 RETURN OF UNUSED MATERIAL

1.6.1 All unused/scrap materials shall be the property of the Owner and shall be returned in good and acceptable condition size wise, category wise by the Contractor at his own cost to Owner's Store(s).

1.6.2 No credit will be given to the Contractor for return of scrap. The Contractor should quote the rates accordingly.

1.6.3 In case the Contractor fails to return unused/scrap materials, then recovery for such quantity of materials, not returned by the Contractor shall be affected at following penal rates from the Contractor's bills or from any other dues of the Contractor to the Owner. Contractor shall make his own arrangements for weighing the off cuts to be returned to Owner's stores.

1.6.4 Penal Rates for non- return / return of materials:

Sl.No.	Material	Penal Rates
(a)	Penal rate for non return of Accountable scrap	Issue Rate + 25% or Landed Rate + 25% (in case issue rate are not indicated in the contract)
(b)	Penal rates for non return of Unused material/excess scrap	Twice the Issue Rates or Twice the Landed Rates (in case Issue Rates are not indicated in the Contract)

(c)	Penal rate for return of Excess scrap	Issue Rate + 75% or Landed Rate + 75% (in case issue rate are not indicated in the contract)
(d)	Penal rate for return of Excess serviceable materials	Issue Rate + 50% or Landed Rate + 50% (in case issue rate are not indicated in the contract)

NOTE: 1) Landed Rate shall be arrived from the latest Purchase Order of respective material received at site by Owner/MECON.

2) In case different penal rates have been indicated in the Contract (based on Project requirement), the same will supersede the above rates.

2.0 PIPING MATERIALS

2.1 All pipes shall be issued in available lengths/shapes and no claims for extra payments on account of issue of non-standard length & shape will be entertained. Pipes shall be issued on linear measurement basis. All valves, flanges, fittings etc. shall be issued on number(s) basis. Contractor shall store the materials in such a way so as to avoid mixing of different types of material and shall maintain complete identification and traceability at all times.

2.2 The scrap allowance for pipes issued by the Owner shall be 3% (2½ % accountable + ½ % non accountable) of the actual consumption as incorporated in the works.

2.3 All pipes in length of 2 meters and above shall be considered as serviceable material provided the material is in good and acceptable condition and has clear identification and traceability (Manufacturer's name, heat number/batch number and test certificates). Pipes in lengths less than 2 M shall be treated as scrap.

2.4 For the non account of pipes drawn by the Contractor over and above the actual consumption as determined by the Engineer-in-Charge, plus 3% (2½% accountable + ½% non accountable) thereof to cover the scrap allowance, recovery at penal rate shall be effected from the Contractor's bill(s) or from any other dues of the Contractor to the Owner.

All unused/scrap pipes, valves, flanges, forged fitting like elbows, reducers tees shall be returned by the Contractor category wise duly cleaned, greased and spec. marked at his own cost to Owner's stores. In case the Contractor fails to do so then recovery for such quantity of pipes not returned by the Contractor at the penal rates shall be effected from the Contractor's bill(s) or from any other dues of the Contractor to the Owner.

3.0 EQUIPMENTS

Various equipment/materials intended for the installation will be received by Owner in unpacked, skid mounted , crated, packed or loose condition and will be stored in the warehouses and open yards. In general, materials will be issued to the Contractor in 'as received' condition. It will be the Contractor's responsibility to draw, load and transport all materials from Owner's designated places of issue to the point of installation and return all packing materials like steel frames, wooden boxes/scrap etc. to Owner's stores.

All materials supplied by the Owner shall be duly protected by the Contractor at his own cost with appropriate preservative like primer, lacquer coating, grease etc. as required.

4.0 CABLES

4.1 Appropriation of cables shall be done as follows:

4.1.1 All the surplus and serviceable cables out of the cables quantity (ies) issued by the Owner to the Contractor shall be returned by the Contractor to the Owner's store in good condition and as directed by the Engineer-in-Charge.

4.1.2 The Contractor shall be allowed a cutting/wastage allowance of 1.5% for power cables and 3% for the control cables. This cutting/wastage allowance shall be computed on the length of cables actually laid, measured and accepted.

4.1.3 All cables being returned to store should carry Aluminum sheet tags indicating the size & type of cable. Cables of less than 15 meters length will be termed as scrap. Cables of lengths 15M and above shall be termed as serviceable material & shall be returned size wise and category wise to the Owner's store in wooden drums. Cables of serviceable length being returned to stores in drum(s) shall be accepted only after Megger value continuity test and physical measurement is carried out by the Contractor to the satisfaction of Engineer-in-Charge. Empty cable drums and major packing material (as decided by Engineer-in-charge) shall be Owner's property and shall be returned to Owner's Store/designated place without any additional cost.

4.1.4 While carrying out material appropriation with the Contractor, the above points will be taken into account. All serviceable materials returned by the Contractor (size wise & category wise) shall be deducted from the quantity (ies) issued to the Contractor for the respective sizes. Scrap generated for power cable and control cable shall also be returned to Owner's store on Lot basis.

4.1.5 Material appropriation shall be done & allowable scrap quantity calculated. The wastage generated by the Contractor in excess of the allowable percentage shall be charged at the penal rates.

5.0 LINE PIPES

5.1 All coated line pipes as per Line Pipe specifications shall be issued on linear measurement basis. The line pipes shall be issued in available lengths and shapes and no claim for extra payment on account of issue of non-standard length and shape will be entertained. Contractor shall store and maintain the line pipes in proper manner to avoid mixing of different classes of pipes. Contractor shall maintain complete identification and traceability at all times. All cut pieces when returned to Owner's storage points after bevelling, shall be considered as serviceable material provided:

5.1.1 Corrosion Protection Coating is intact.

5.1.2 Pipe pieces have pipe specifications, manufacturer's logo/name and heat number duly authenticated with hard stamp of the authorized inspector as per approved procedure. All cut pieces of pipes measuring less than 2 M will be treated as wastage/scrap.

5.2 For the purpose of accounting of coated line pipes, following allowances shall be permitted:

a)	**Unaccountable wastage**	**0.1%**
b)	**Scrap (All cut pieces of pipes measuring**	**0.25**

% Less than 2 Meter)

c) Serviceable materials (All cut pieces of pipe **0.5**

% Measuring 2 Meter and above)

Scrap shall be accounted at actuals as per site assessment subject to maximum limits as stated above.

The percentage allowance shall be accounted on the basis of pipe book chainage for main pipeline.

5.2.1 Material appropriation shall be done & allowable scrap quantity calculated. The wastage generated by the Contractor in excess of the allowable percentage shall be charged at the penal rates as given in the contract.

6.0 OPTICAL FIBRE CABLE

For the purpose of accounting of optical fibre cable, all cut pieces measuring in length of 40 m and above when returned to Owner's storage points shall be treated as serviceable materials. All cut pieces of cable measuring less than 40 M will be treated as scrap.

For the purpose of accounting of OFC (Optical Fibre Cable) following allowances shall be permitted:

2.5

(i)	**Unaccountable wastage**	**0.1%**
(ii)	**Scrap (All cut pieces of cables measuring Less than 40 M)**	**0.25%**
(iii)	**Serviceable material (measuring 40 M And above)**	**0.25%**

Material appropriation shall be done & allowable scrap quantity calculated. The wastage generated by the Contractor in excess of the allowable percentage shall be charged at the penal rates as given in the contract.

PE PIPELINE WORK

1.0 CONDITIONS FOR ISSUE OF MATERIALS

Whenever any material is issued by Owner, following conditions for issue of material in addition to other conditions specified in the contract shall be applicable.

1.1 Necessary indents will have to be raised by the Contractor as per procedure laid down by the Engineer-in-charge from time to time, when he requires the above material for incorporation in permanent works.

1.2 Materials will be issued only for permanent works and not for temporary works, enabling works etc. unless specifically approved by the Engineer-in-charge and the same shall not be taken into account for the purpose of materials reconciliation.

1.3 The contractor shall bear all other cost including lifting, carting from issue points to work site/ contractor’s store, custody and handling etc. and return of surplus/ serviceable scrap materials to Owner’s storage points to be designated by the Engineer-in-charge etc. No separate payment for such expenditure will

be made.

1.4 No material shall be allowed to be taken outside the plant without a gate pass.

1.5 The contractor shall be responsible for proper storage, preservation and watch & ward of the materials.

1.6 **Reconciliation of Owner supplied materials**

1.6.1 Every month, the contractor shall submit an account for all materials issued by Owner in the proforma prescribed by the Engineer-in-charge. On completion of the work the contractor shall submit "Material Appropriation Statement" for all materials issued by the Owner in the proforma prescribed by the Engineer-in- charge.

Waste materials like part lengths of pipes and other partly used items are the property of HNGPL Ltd. and must be returned to the store with the appreciate documentation so that they can be considered as part of the material reconciliation.

Item	Unaccountable	Scrap
Regulators & Meters	0%	0%
PE Pipes	2%	2% (less than 2.0 mtrs.)
GI Pipes*	2%	2% (less than 0.5 mtrs.)
Consumables	Discretionary	-

* In case supplied by Owner

Unaccountable wastage / scrap shall be at actual as per site assessment subject to maximum as stated above.

The percentage allowance shall be accounted on the basis of final measurement book.

1.6.2 All unused, scrap materials and salvageable materials shall be the property of the Owner and shall be returned by the Contractor category-wise at his cost to the Owner's designated store yard(s). In case the Contractor fails to do so/ or exceeds the limits of allowances specified above for scrap/ serviceable materials, then recovery for such quantities not returned as well as returned in excess of permitted limit by the Contractor will be done at the penal rate i.e. 125% of landed cost at the time of final bill/ closing of contract by Engineer-in- charge shall be effected from the Contractor's bill(s) or from any other dues of the Contractor to the Owner. Contractor shall be responsible for the adjustment/ weighment/ measurement of the surplus materials to be returned to the store. Contractor shall also be responsible for suitable segregation of returned materials into separate stacks of serviceable and scrap materials.

1.6.3 Wherever certain material is covered under Contractor's scope of supply whether part or in full for any item of work covered under SOR, no allowance towards wastage / scrap etc. shall be accounted for during execution stage.

MINIMUM NO. OF MAJOR EQUIPMENTS/ MOBILISATION EQUIPMENT SCHEDULE TO BEDEPLOYED

(Annexure- 9)

ANNEXURE-9 TO SCC

LIST OF MINIMUM NOS. OF CONSTRUCTION EQUIPMENT TO BE DEPLOYED

Sl. No.	Equipment Description	Qty. (Nos.)
1.	JCB Or, Excavator/ Back-Hoe (Hitachi 60 or equivalent)	As required
2.	Hydra-(8-15 MT)	2
3.	Diesel Welding Machine	4
4.	DG Set 120 kVA + Stabilizer	As required
5.	Bevelling Machine	1
6.	a) External Clamp ND 6" / 4" (as per the scope & project requirement)	2 Nos. foreach size
7.	External X-ray Unit (Complete)	Nil
8.	Gamma Ray Unit (Complete)	1
9.	Radiography Film Viewer	1
10.	Blasting cleaning Unit (Complete)	1
11.	Air Compressor (Minimum 300 CFM)	1
12.	Air Compressor (Minimum 600 CFM)	1
13.	Holiday Detector	2
14.	Dewatering Pump	As Required
15.	Water Filling Pump of Adequate Capacity	1
16.	Dosing Pump of Adequate Capacity	1
17.	Pressurization Pump – Motorised (Adequate capacity)	1
18.	Complete hydro testing kit (dead weight tester, pressure instrument, temperature inst. Etc.)	1
19.	Pipe Bending Machine	1
20.	Horizontal Augur Boring Machine	1
21.	HDD Machine with adequate pipe pulling capacity ≥ 10T minimum Along with complete accessories/ equipment	As Required
22.	Pipe Trailers of adequate size	As required

Note:

1. Detail of minimum equipments in good working condition suitable to lay the Pipeline, required to be mobilized by the execution contractor to complete the work within schedule is given above for each Section. Contractor is required to augment the above list with additional numbers / categories of equipments as per actual requirement and instruction of Engineer-In-Charge without any additional financial implication to client.
2. Contractor to ensure **WELDING & NDT** procedure and welders are qualified within **15 DAYS** time after award of contract.
3. Contractor shall replace any defective / damaged equipments promptly to complete the work without any time & cost implication to the client / owner.
4. After completion of certain activities, in case equipments are not required the same can be demobilised with prior approval of Engineer-In-Charge.
5. For all the above listed equipments, bidder is required to give an undertaking for deploying the equipments during execution of the contract.

MINIMUM NO. OF SKILLED MANPOWER TOBE DEPLOYED

(Annexure-10)

ANNEXURE-10 TO SCC

MINIMUM NUMBER OF SKILLED MANPOWER TO BE DEPLOYED

Sl. No	DESCRIPTION	REQUIREMENT
1.	Resident Construction Manager / Section Incharge	1 (Note-4)
2.	Planning engineer	1 (Note-4)
3.	QA/ QC engineer	1 (Note-4)
4.	Safety officer	1 (Note-4)
5.	Qualified Surveyor	1
6.	Welding/ NDT engineer	2
7.	Discipline Engineer's (Civil/ Mech)	1/ 2
8.	Foreman / Supervisor	5
9.	Civil surveyor / liaison team	1
10.	Document controller	1
11.	Store keeper / store in-charge	1 (Note-4)
12.	Welder (Manual)	8
13.	Fitter	4
14.	Grinder	4
15.	Machine operator	8
16.	Blast cleaning crew	3
17.	Electrician / Machine mechanic	1
18.	Rigger	12
19.	Drivers	As Required
20.	X-ray / Gamma Ray crew	1
21.	Hydrotesting crew	1
22.	Field joint coating crew	1
23.	Holiday testing crew	1
24.	HDD crew	1 (Refer Note1)
25.	HDPE Jointing Crew	1
26.	Civil survey crew (with equipment)	1
27.	Station civil works (carpenter/bar-bender/mason/fitter etc.)	As Required
28.	Unskilled workers	20
29.	Station mechanical, pre-fabrication / erection crew	1
30.	Civil engineer	1

The above proposed list of skilled manpower is the minimum to be deployed by Contractor for each part, however as per the requirement to meet the target schedule contractor shall augment workforce.

NOTE :-

(1) HDD equipment and Crew as required shall be deployed based on the SOW finalized and as per instruction of EIC.

(2) The details of minimum manpower required to be mobilized by the execution contractor to complete the work within schedule is given above for each section and is not exhaustive. Contractor is required to augment the above list with additional numbers/categories of workmen as required and directed by Engineer-In charge to complete the work within the completion time schedule and quoted price.

(3) The Manpower as identified above, should have required qualification and adequate relevant experience.

(4) These manpower are to be mobilized per section within 15 days of award of work

HIRING / RECOVERY RATE FORDEPLOYMENT OF MANPOWER
(Annexure-11)

ANNEXURE –11 TO SCC

HIRING / RECOVERY RATE FOR DEPLOYMENT OF MANPOWER

1. The Labour rates are "all inclusive". These rates include but are not limited to all payroll costs and allowances, payroll taxes, fringe benefits, protective and/or special clothing, construction supplies required for work of a nature included in this contract, overhead & profit , service tax, insurance, transportation and travel time.

2. The rates are inclusive of providing hand tools and consumables such as electrodes, filler wire, gases, grinding wheels where the concerned category of labour is expected to use in execution of the job but exclusive of all major equipment and machineries.

3. The normal time labour rates shall apply for all hours worked up-to eight (8) hours in a day. The payment for part of the day shall be made on prorata basis.

Sl. No.	Classification Personnel	Rates per day ofNormal Hours (in Rs.)	Rate per hour for OT, Sunday & Holiday (in Rs.)
1.	Foreman	2000	430
2.	Supervisor	2000	430
3.	Engineer	2500	650
4.	Gas Cutter	700	170
5.	Grinder	700	170
6.	Brick Mason	520	120
7.	Stone Mason	520	120
8.	Structural welder	1000	260
9.	Qualified Arc welder – manual / semi automatic	1500	260
10.	Qualified Arc welder – automatic	2000	430
11.	Welder helper	470	120
12.	Pipe Fitter /Bender / PE Technician	750	150
13.	Structural Fitter	650	120
14.	Pipeline Fitter	850	190
15.	Coater	520	120
16.	Mechanic	520	120
17.	Site Equipment / Machine	520	120

	Operator		
18.	Electrician	600	150
19.	Fabricator	650	150
20.	Carpenter	500	130
21.	Plumber	500	120
22.	Painter	500	120
23.	Cable Jointer	780	190

Sl. No.	Classification Personnel	Rates per day ofNormal Hours (in Rs.)	Rate per hour for OT, Sunday & Holiday (in Rs.)
24.	Instrumentation Technician	1000	190
25.	Insulator	600	120
26.	Rigger	400	110
27.	Bhisti (water man)	390	60
28.	Heavy duty driver	700	170
29.	Civil Surveyor	750	130
30.	Document Controller	1000	300
31.	Account Officer	1500	360
32.	Store Keeper / Incharge	1000	300
33.	AUT Interpreter	5000	750
34.	Liasioning Team (2 persons)	2000	430
35.	Light duty driver	500	120
36.	Sand Blaster	500	130
37.	Qualified Surveyor	750	130
38.	Un skilled Worker	390	80
39.	Construction Manager	10000	1000
40.	QA/QC / Safety / Planning / NDT Engineer	5000	750

(SIGNATURE OF BIDDER)

NOTES:-

1. Rates are final and Tenderer is to sign only without deviation.
2. In case of foreign bidder, conversion rate applicable on one day prior to price bidopening date published by the State Bank of India will be considered.
3. The recovery rates shall be the rates provided above plus 20% (twenty percent).

EQUIPMENT HIRING/RECOVERY RATES
(Annexure-12)

ANNEXURE-12 TO SCC

EQUIPMENT HIRING/RECOVERY RATES

SL. NO.	DESCRIPTION OF EQUIPMENT	HIRING/RECOVERY RATES(ININR) PER DAY(MINIMUM 8 HOURS) INCLUDING CONSUMABLES & FUEL
1.	Back Hoe-Ex 280 / 300 & Above or Equivalent	Rs. 16000
2.	JCB Excavator	Rs. 6000
3.	DG along with Welding Machines	Rs. 4000
4.	Hydra (8 – 10 MT)	Rs. 6000
5.	Bevel Cutting Machine –Manual	Rs. 600
6.	Tyre Mounted Cranes (10 MT & above)	Rs. 15000
7.	HDD Rig with All Equipments & Accessories (Cap. 25 T and above)	Rs. 40000
8.	X-Ray M/C – External	Rs. 5000
9.	Gamma Source	Rs. 4000
10.	Water Lifting Pump	Rs. 1200
11.	Filling Pumps	Rs. 1500
12.	Pressurization Pump – Motorized	Rs. 3000
13.	Induction/Resistance Heating Equipment or LPGMulti Torch.	Rs. 3000
14.	Air Compressor – (300CFM)	Rs. 2000
15.	Air Compressor –(above 300 CFM)	Rs. 15000
16.	D.G. Sets : 62.5 KVA to 200 KVA (inclusive ofgenerators)	Rs. 7000
17.	Blast Cleaning Machine	Rs. 1000
18.	Pipe Trailers (FB / Semi Low Bed)	Rs. 10000
19.	Mono drill crawler mounted	Rs. 3000
20.	Hand drill (pneumatic) for rock breaking/JCBbreaker	Rs. 4000
21.	Rock breaker attachment	Rs. 3000
22.	Dosing Pump	Rs. 1000
23.	UT Machine with operator	Rs. 1000
24.	Dewatering Pump	Rs. 1000
25.	Holiday Detector Unit	Rs. 1000
26.	Dead WT Tester	Rs. 1000
27.	Dumper / Tippers	Rs. 11000
28.	Pipe locator	Rs. 2000
29.	Pipe Clamp – External	Rs. 500
30.	Pipe Trailer for Coated Line Pipe	Rs. 12000
31.	Rock Breaking Machine with Excavator	Rs. 25000/-
32.	Grinding machine	Rs. 1000/-
33.	Gas cutting set with cylinders	Rs. 1500/-
34.	Trucks	Rs. 4000/-

SL. NO.	DESCRIPTION OF EQUIPMENT	HIRING/RECOVERY RATES(ININR) PER DAY(MINIMUM 8 HOURS) INCLUDING CONSUMABLES & FUEL
35.	Car/Jeep	Rs. 2000/-
36.	Tractor with trolley	Rs. 4000/-
37.	Tripod with 5 Tons Chain Pulley Block	Rs. 700/-

(SIGNATURE OF BIDDER)

NOTES:-

1. Rates are final and Tenderer is to sign only without deviation.
2. Rates are inclusive of operators / drivers as applicable.
3. Rates are all inclusive of all taxes and duties, including service taxes /GST etc., contractor's overheads & profit.
4. The recovery rates shall be the rates provided above