TENDER FOR APPOINTMENT OF CONSULTANTS/PROFESSIONAL AGENCIES FOR ASSESSING & ADVISING ON INSURANCE REQUIREMENTS OF RINL/ VISAKHAPATNAM STEEL PLANT

Competitive Bids are invited from Management Consultants/Professional Agencies for rendering Advisory Services on the Insurance Coverage needs vis-a-vis minimization of Insurance Costs of RINL/Visakhapatnam Steel Plant (Including Captive Mines & Branch Offices).

Tender documents viz., terms & conditions are placed at our Website - http://www.vizagsteel.com/tenders/others.

Interested Parties may download the tender documents or collect the same and participate in the tender by submitting their competitive bid at the following address

Asst General Manager-Finance
RASHTRIYA ISPAT NIGAM LIMITED
VISAKHAPATNAM STEEL PLANT
INSURANCE SECTION
FINANCE & ACCOUNTS DEPARTMENT
II FLOOR, ADMINISTRATION BUILDING
VISAKHAPATNAM - 530 031.
TELE NO. (0891)- 2518564/Mobile-9849700814
E-Mail: sadguna_s@vizagsteel.com
Notice inviting bids for Appointment of Consultants for assessing & advising on insurance coverage needs of the RINL/Visakhapatnam Steel Plant

1. Purpose of this Notice
Rashtriya Ispat Nigam Limited (referred hereinafter as RINL or the Company) invites bids from Management Consultants/Professional Agencies (referred hereinafter as the Consultant) to assess the risk exposure of various assets/expansion units/operations of RINL and Advise the Company on insurance requirements and assist the Company to finalize the insurer for the year 2011-12. The existing insurance coverage is up to 30-09-2011.

2. About the Company
2.1 RINL is a 100% Government of India Undertaking incorporated in 1982. The Company operates Visakhapatnam Steel Plant, a Port based integrated Steel Plant located at Visakhapatnam in the State of Andhra Pradesh, Visakhapatnam.

2.2 The total investment in the existing plant at Visakhapatnam is over IN Rs.8,500 Crores (Over US$ 2 Billion) and is in the process of expansion of the plant with a capital out lay of about Rs.14,000 Crores (over US$ 3.3 Billion). The expansion is likely to be completed within another 6 to 9 months time.

2.3 The Company is professionally managed with ISO 9001-2000 certification covering all plant facilities and independently the Finance & Accounts and Personnel Departments. It has also been certified for ISO 14001 & OHSAS 18001.

2.4 The Plant follows Blast Furnace, Basic Oxygen Furnace and Continuous Casting route for production of steel. The finished products are long products like wire rods, re-bars, angles, channels, billets etc.
2.5 The major production units of the plant are operating at considerably above 100% rated capacities for the last five years. It is presently producing over 3 million long steel products and likely to add another 3.5 million steel production in coming 6-9 months time, immediately after completion of expansion. The company’s turnover and other details for 2009-10 are as follows:

<table>
<thead>
<tr>
<th>Description</th>
<th>` (In million)</th>
<th>Value in US$ million (Approx)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Imports</td>
<td>37376.00</td>
<td>840.00</td>
</tr>
<tr>
<td>Exports</td>
<td>3517.30</td>
<td>79.00</td>
</tr>
<tr>
<td>Turnover - Total</td>
<td>106346.30</td>
<td>2390.00</td>
</tr>
<tr>
<td>Net Profit (Before Tax)</td>
<td>12476.50</td>
<td>280.00</td>
</tr>
<tr>
<td>Fixed Assets – Gross Block</td>
<td>94739.00</td>
<td>2129.00</td>
</tr>
<tr>
<td>Fixed Assets – Net Block</td>
<td>14653.50</td>
<td>330.00</td>
</tr>
<tr>
<td>Gross Current Assets (excluding cash &amp; bank balances)</td>
<td>41351.20</td>
<td>930.00</td>
</tr>
</tbody>
</table>

2.6 The Company has its Plant located at Visakhapatnam on the shores of Bay of Bengal. The Company also has Captive Limestone & Dolomite Mines at Jaggayyapeta (A.P) & Madharam (A.P.) respectively.

2.7 The following are the major manufacturing items (2009-10):

<table>
<thead>
<tr>
<th>Product</th>
<th>Installed Capacity (`000 Tonnes) per annum</th>
<th>Actual Capacity (`000 Tonnes) per annum</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wire Rods</td>
<td>850</td>
<td>1015</td>
</tr>
<tr>
<td>Bar Products</td>
<td>710</td>
<td>870</td>
</tr>
<tr>
<td>Medium Merchant &amp; Structural Products</td>
<td>850</td>
<td>1073</td>
</tr>
</tbody>
</table>

2.8 The company operates at about 120% of its capacity. Capacity of the plant is being expanded to about 7.3 Million Tonne of Liquid Steel.
3. Present Insurance Coverage

<table>
<thead>
<tr>
<th>Nature of Policy</th>
<th>Assets Covered</th>
<th>Value coverage Basis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Fire &amp; Special Perils Policy &amp; LOP, Terrorism</td>
<td>All fixed assets excluding land</td>
<td>Reinstatement</td>
</tr>
<tr>
<td>Burglary Policy</td>
<td>Stores &amp; Spares</td>
<td>Procurement Cost</td>
</tr>
<tr>
<td>Marine Policies</td>
<td>Inland &amp; Imports of Coal, Lime, Spares etc.</td>
<td>Procurement Cost</td>
</tr>
<tr>
<td>Mediclaim Policy for Retired Employees</td>
<td>Covering retired employees</td>
<td>For Specified amount</td>
</tr>
<tr>
<td>Group Personal Accident Policy for Employees</td>
<td>Covering employees</td>
<td>For Specified amount</td>
</tr>
</tbody>
</table>

Apart from above, the Company obtains policies like Medical Establishment for Hospital, 3rd Party Insurance for vehicles, Public Liability, Fidelity for cash, Boiler Policy, etc. The Insurance Coverage is obtained for each year through an open tender.

Existing Insurance tender terms and conditions for the policies obtained for the period 01-10-2010 to 30-09-2011, list of policies and report of earlier consultants is placed at Annexure-I. Present Lead Insurers are M/s. New India Assurance Co. Ltd. with 60% share and M/s. HDFC Ergo General Insurance Co. Ltd. with 40% share as co-insurers.

4. Consultancy Services

The Company has earlier availed the services of consultants for assessing the risk exposure and advice on the insurance coverage during 2007-08 and based on their report, present insurance coverage is obtained.

Considering the substantial increase in the value of assets in the coming years, the Company is planning to revise the insurance coverage. Such revision is proposed to be made with the professional advice of Consultants/Professional Agency who are to assess the risk exposure faced by various assets/operations/commissioning of expansion units of the Company and advise the Company on suitable insurance policies to be taken against the risks vis-à-vis minimization of insurance costs.
5. **Scope of Services**

5.1 The Consultant/Professional Agency appointed shall render the following services:

5.1.1 To study and analyze the existing insurance risk coverage and forecast the risks to be faced by the Company and suggest suitable insurance coverage for the risks identified and its value considering available facilities etc. To advise on the integration of the new expansion project assets within the Insurance coverage opted prior to commissioning & commercial use. The tenderer shall meet various personnel of the Company, wherever located in the process of assessing/forecasting the risks faced.

5.1.2 To suggest the assets to be excluded from insurance coverage

5.1.3 To suggest methodology for arriving insurable value of different assets and to value the same, policy excesses, limits of liability under liability policies, terminology & policy wording etc.

5.1.4 To suggest eligibility criteria of insurer/re-insurer and distribution of risks between/among insurers.

5.1.5 Design terms & conditions to be included in the tender to be floated for insurance coverage for the year 2011-12 (for the period from 01-10-2011 to 30-09-2012) or any other period as decided.

5.1.6 Assist the Company in selecting a suitable insurer(s) at an optimum cost including vetting of the insurance policies issued by the Insurer appointed for the year 2011-12 or any other period as decided.

5.1.7 To suggest methods to claim for any losses that may arise under different insurance polices and the documents to be attached therewith.

5.1.8 To furnish opinion/advise on matters relating to IRDA notifications, circulars from Insurance companies and other issues/notices pertaining to Insurance matters.

5.2 The Appointed consultant/Professional Agency is to submit suitable report to the Company covering the above aspects within 45 days from the date of Letter of Intent (LOI) or such extended period as approved by the Company.
5.3 Scope of services required on post-placement of insurance policies:

5.3.1 (a) To assist RINL in preparing representations where admissibility of a claim denied by the insurer not in line with policy terms.

(b) To provide opinion & advice on the claims referred and assist documentation preparation as per policy terms & conditions where Insurer has admitted the claim prima facie and on survey accepts/repudiates the claim fully or partly.

The above services shall be rendered at our request for claims valuing > Rs.10 lakhs per claim (other than Group Personal Accident Policy and Group Mediclaim Policy for Retired Employees) for a maximum consultations of 10.

5.3.2 To visit VSP on our request/calling to render the services mentioned at 5.3.1 (a) & (b) above, where ever required subject to a maximum of 5 visits. Rate per visit shall be all inclusive i.e. traveling, lodging, boarding & conveyance etc.

5.3.3 If number of consultations or visits exceeds the limit as specified at 5.3.1 and 5.3.2 above, proportionate amount will be paid for the consultations/visits exceeded the limit.

6. Qualification of the Consultants/Professional Agencies

The tender is open to Management Consultants/Professional Agencies with expertise in risk management and general insurance field. The Consultants/professional agency should have carried out such jobs as given in the scope of services in the foregoing paragraphs to any manufacturing company having annual turnover of Rs.6,000 crores or more in any one of the previous financial years i.e. 2007-08, 2008-09, 2009-10. **The bids shall be rejected if this criteria is not met by any tenderer.** The bidders shall submit copies of work order(s), or Letters of Intent or a certificate and satisfactory performance
certificates from their Clientele Companies duly stating their annual turnover etc.

7. **Bidding**

The Consultants/Professional Agencies have to submit their bids in two parts i.e. Qualification bid and Price bid. Submission of these bids is as follows:

7.1 **Qualification Bid** – The following documents are to be submitted with the qualification bid.

i) Covering letter of the bidders explaining their background, experience etc.

ii) Proof having done similar services/jobs mentioned in the scope at para 5 above for manufacturing companies having turnover of Rs. 6,000 crores or more for at least one financial year during last 3 financial years ending with 2010. The bidders shall submit copies of work order(s), or Letters of Intent and satisfactory performance certificates from their Clientele Companies duly stating their annual turnover etc.

(a) Copy of Work Order(s) or Letters of Intent issued by clientele.

(b) Copy of letter issued by Clientele indicating Satisfactory performance and their turnover etc.

iii) Copy of Service Tax Registration Certificate issued by Service Tax Authorities

iv) Copy of PAN No. allotted by Income Tax Authorities.

v) NEFT/RTGS Details

vi) Contact person’s Name & Official Address, e-mail address, Phone No., Cell No., Fax No.

vii) Unfilled price bid document along with tender document duly signed on all pages by authorized representative as a token of acceptance of terms and conditions of RINL.

Qualification bid containing the above documents are to be kept in a sealed cover duly super scribining “Qualification Bid”.

7.2 **Price Bid** – The bidders shall quote their price only in the price bid format given at Annexure-II to these tender documents. The duly filled in Price Bid at Annexure-II is to be kept in a sealed cover duly super scribining
“Price Bid”. The Price quoted shall be inclusive of all taxes including service tax.

7.3 The appointed consultant are to submit their invoices with suitable break-up for the taxes included therein for the purpose of claiming input tax credit like CENVAT by RINL. No payment for any services, what so ever will be made other than those quoted in the price bid. No terms and conditions are to be stipulated in the price bid.

7.4 The covers containing “Qualification Bid” & “Price Bid” are to be kept in another sealed cover duly super scribing with the words “Bid for Tender No.VSP/FIN/30/2010-11/04, dated 07-02-2011.

8. Payment Terms – The appointed consultants/Professional Agencies will be paid as follows subject to submission of necessary invoice (The invoice shall contain details of service tax registration No. Classification of service, PAN No). Payment shall be made through electronic mode i.e. EFT/RTGS or Cheque

8.1 Payment terms for the services covered under scope of work mentioned at 5.1 and 5.2

(i) 60% of the fee quoted for advisory services in assessing the risk would be paid on 30th day from the date of submission of final report and accepted by VSP.

(ii) 30% of the fee quoted for advisory services in assessing the risk would be paid on 30th day from the date of preparation of final draft tender documents for the insurance requirement of RINL.

(iii) 10% of the fee quoted for advisory services on selecting suitable insurance company and on vetting of insurance policies issued by the insurer for the year 2011-12.

8.2 Payment terms for the services covered under scope of work mentioned at 5.3.1 & 5.3.2 respectively:

(i) 100% within 30 days after providing opinion/advise.

(ii) 100% for each visit for providing opinion/advise with in 30 days after completion of visit,

9. The bidders are suggested to study the existing insurance coverage, facilities of the Company etc. making necessary visit at their own cost the Company at
Visakhapatnam, Mines at Madharam, Jaggayapeta and Garividi and various Branches located all over India.

10. Tenders will be finalized based on lowest price quoted from the qualified bidders for all the services covered under this tender.

11. The offers by the bidders shall be kept valid for acceptance by RINL for a period of 90 days from the date of opening of the tender for evaluation and finalization.

12. The successful tenderer shall make his own arrangement for traveling including local conveyance, food and accommodation etc. during execution of contract. No additional payment whatsoever on any account shall be made by RINL/VSP except the price quoted.

13. Income tax and other taxes/levies will be recovered from the payment made to the Consultants/Professional Agencies.

14. The successful consultants/Professional Agencies on appointment shall keep confidential all the data/information/documents etc. they obtain about/from RINL. The reports submitted to RINL shall also be kept confidential and is the property of RINL and free to use in any manner it chooses.

15. Any dispute arising under this tender shall be subject to the jurisdiction of courts at Visakhapatnam only.

16. **Right to reject quotation:** RINL reserves the right to reject any one or all tenders without assigning any reason, thereof.

17. The cover containing “Qualification Bid & Price Bid” are to be submitted latest by; 03.15 PM on 25-02-2011 at the following address:

   **Asst General Manager-Finance**
   RASHTRIYA ISPAT NIGAM LIMITED
   VISAKHAPATNAM STEEL PLANT
   INSURANCE SECTION
   FINANCE & ACCOUNTS DEPARTMENT
   II FLOOR, ADMINISTRATION BUILDING
   VISAKHAPATNAM - 530 031.
   TELE NO. (0891)- 2518564/Mobile-9849700814

18. The “Qualification Bid” shall be opened on 25 -02-2011 at 03-30 PM.
### Price Bid for Tender No.VSP/FIN/30/2010-11/04  Dated 07-02-2011

<table>
<thead>
<tr>
<th>Nature of Service</th>
<th>No of Consultations /Visits</th>
<th>Unit Rate</th>
<th>Total Basic Price (Rs.)</th>
<th>Service Tax (Rs.) on Total basic price</th>
<th>Total (Rs.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A. Insurance Risk Assessment and other advisory services as per the scope given in the tender mentioned at 5.1 &amp; 5.2</td>
<td>N.A.</td>
<td>Lumpsum</td>
<td>4 (2*3)</td>
<td>5</td>
<td>6 (4+5)</td>
</tr>
<tr>
<td>B. Consultancy services covered under scope mentioned at 5.3.1(Total = 10* per opinion/advise)</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Visiting Charges (i.e. traveling, food, accommodation, conveyance etc. all inclusive) covered under scope mentioned at 5.3.2 - (Total=5*per visit)</td>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Grand Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
RASHTRIYA ISPAT NIGAM LIMITED
VISAKHAPATNAM STEEL PLANT
VISAKHAPATNAM-530031

Tender No.VSP/FIN/30/Insurance/2010-11/02 Dated 31-07-2010

Notice inviting bids for Insurance Coverage of Risks of RINL

Rashtriya Ispat Nigam Limited (RINL) wish to obtain insurance cover for Fire, Boiler, Motor, Marine, Burglary & House Breaking, Third Party Liability, Consequential Loss (Fire) Insurance Policy, Group Personal Accident Insurance (GPAI) for its Employees, Mediclaim Policy for its Retired Employees, Cash and Other Miscellaneous Risks for its units located at Visakhapatnam Steel Plant, Marketing outlets and Mines. You are requested to submit your sealed quotations on or before 11.00 hrs of 25-08-2010 addressed to AGM (F&A), Insurance Section, Finance & Accounts Department, RINL, Visakhapatnam Steel Plant, Administration Building, Visakhapatnam-530 031 as per the following terms and conditions given below:

1.0 SCOPE OF RISK COVERAGE

Insurance Policy shall cover Fire (Standard Fire & Special Perils) including Terrorism, Consequential Loss (Fire), Boiler, Motor, Marine, Burglary & House Breaking, Third party Liability, Group Personal Accident Insurance (GPAI) for Employees, Group Mediclaim Policy for Retired Employees, Cash and Other Miscellaneous risks/policies for Visakhapatnam Steel Plant, Marketing outlets & Mines as per details enclosed to Technical Bid at Enclosure B.

2.0 PERIOD OF RISK COVERAGE:

The insurance policy cover under this Tender shall be for a period of one year commencing from 00.00 hrs of 01.10.2010 to 24.00 hrs of 30.09.2011.

3.0 PAYMENT OF PREMIUM

3.1 Annual premium for all the Policies except for Marine & Fire Policies shall be paid in advance i.e. on or before 30-09-2010.
3.2 **Payment of Insurance Premium for Marine Policies:**

For Marine Policies/Cover three months advance premium shall be paid, combined for all marine policies: Marine (Special Declaration) Policy-for Inland Transit, Marine Policy-Third Country Imports & Customs Duty

Policy, Marine policy-for all types of Coal & Coke, Marine Policy-for Lime Stone, Marine Policy-Inland-Second Hand Machinery and Marine Policy-Export & Import-Second Hand Machinery. Thereafter on receipt of declarations, the Insurance Company shall raise bills periodically and adjust the premium so paid in advance and while issuing the cover notes, shall indicate balance deposit available. The payment shall be made on or before 7th day from the date of receipt of statements, which are in order.

3.3 **Payment of Insurance premium in respect of Special Contingency (Declaration) Policy for Coal:**

For Special Contingency (Declaration) Policy for coal as per Annexure no.24 the premium payable shall be subject to adjustment based on monthly declarations by RINL.

3.4 **Payment of Insurance premium and policy cover in respect of Burglary Policies:**

For the Burglary Policy as per Annexure No.5, the Insurance cover required is on “First Loss Basis” for 25% value of full value at risk. RINL shall file monthly declarations of inventories and the premium payable shall be subject to adjustment based on monthly declarations by RINL. The premium to be quoted in the price bid shall be subject to this clause.

3.5 For Policies mentioned at Annexures-1, 2, 3 and 4 the Insurance Company shall extend credit against Bank Guarantee for an amount equal to the agreed & due premium to be arranged by RINL for the period from 01-10-2010 to 30-11-2010. On expiry of bank guarantee period, premium quoted against these policies will be paid. However, for annexure-3 the premium payable shall be subject to adjustments based on monthly declarations by RINL.

3.6 Mode of Payment for all premiums shall be through NEFT/RTGS/Account Transfer/any other mode of e-payment implemented by Banks as per RBI Guidelines from time to time. Successful Insurer shall submit details of Bank Account Number, etc., as per prescribed format of RINL.
4.0 **SETTLEMENT OF CLAIMS**

Marine Claims: Procedure prescribed below shall be followed for settlement of MARINE CLAIMS:

4.1 RINL shall not lodge insurance claims where the individual monetary value of the claim is equal to or less than Rupees Two Thousand (Rs.2000/-).

4.2 Claims having individual monetary value between Rupees Two Thousand one (Rs.2,001/-) and Rupees twenty thousand (Rs.20,000/-) shall be settled by the Insurance Company within two (2) working days based on a statement of claims submitted by RINL to Insurance Company in the mutually agreed format without survey. The relevant documents would be available with RINL and be shown/submitted if called for specifically within 30 days from the due date for settlement of claim.

4.3 Claims having individual monetary value above Rupees twenty thousand (Rs.20,000/-) shall be settled by the Insurance Company within 30 days from the date of submission of Claim Bill along with documents.

4.4 **CLAIMS OTHER THAN MARINE:** These shall be settled by the Insurance Company as per policy conditions within 30 days from the date of submission of Claim along with documents.

4.5 In case claims are not settled by the Insurance Company within the prescribed time limit the Insurance Company shall pay interest @ 17% p.a., till the time of payment. Interest shall be calculated from the day the payment falls due.

4.6 Immediately on award of Insurance Coverage, an MOU will be entered into as to the documents required to be furnished along with each claim.

5.0 **ADDITIONS/DELETIONS OF ITEMS/SUM INSURED:** RINL reserves the right to add/withdraw the items/sum insured from the scope of coverage during the policy period. When the item(s) or sum insured from the scope of coverage is/are withdrawn during the policy period, the proportionate premium shall be refunded by the insurance company to RINL. Similarly, when an item is added or the scope of coverage is increased/included during the policy period, the proportionate premium will be paid to the insurance company by RINL. Premium payable by RINL shall be made as per clause 3.0 above. Insurance Company shall refund the premium within seven
(7) working days from the date of withdrawal or change of coverage intimation.

6.0 The Insurance Company may, in their own interest, quote the rates and premium for Policy items in line with rules, regulations and guidelines of applicable Statutory Bodies viz., IRDA. In case of any deviation, violation and/or discrepancy (how so ever described) is observed by any Authority on the rates or discounts or premium quoted or terms & conditions etc., responsibility to address/resolve the issues will be solely that of the Insurance Company. RINL shall not be responsible and liable for any implications whatsoever i.e. additional premium or penalty, consequential delays or penalty etc. The Policy cannot be revoked/cancelled by the Insurance Company for the afore-stated reasons. Insurance Company will be solely responsible / liable for any implications, financial or otherwise arising out of any such eventuality.

7.0 ALTERNATE ARRANGEMENTS AT RISK & COST OF THE INSURANCE COMPANY

If the Insurer fails to perform his obligations agreed upon or fails to fulfill any part of this contract, it shall be open to RINL to make alternate arrangements through any other Insurance Company at the risk and cost of the Insurance Company without any notice. In such case, the Insurance Company shall in addition be responsible for any losses which RINL may suffer due to Insurance Company’s failure. This will be without prejudice to the rights of RINL under the contract for any other action(s) including termination of the policy or policies.

8.0 ASSIGNMENT OF RISK COVERAGE

No part of the policy or policies other than Re-insurance permissible as per guidelines/directions of IRDA, shall in any manner, directly or indirectly be shared with any other insurance Company subject to clause no 9.2.

9.0 FINALISATION OF TENDER

9.1 Tenders will be evaluated based on overall lowest premium (L1) offered for all the Policies.

9.2 RINL would distribute the coverage to two insurance companies in 60:40 proportions. The lowest (L1) bidder would get 60% of the value of total premium quoted and next lowest (L2) would get 40% of total premium subject to L2 party agreeing to match the L1 total premium quote. In case L2 does not match the L1 total premium quote then L3 would be offered for matching with L1 total premium quote and so on. L1 bidder will be the Lead Insurer.
9.3 In case, none of the Insurance Companies (L2 and so on) are willing to match with L1 quote, then L1 Insurer shall be awarded 100% coverage. In such an instance L1 insurance company should be in a position to arrange 100% insurance cover from the effective date mentioned in the tender and shall have prior arrangement with their re-insurers, if any, accordingly. Confirmation to this effect shall be given in the technical bid. If no re-insurance arrangement is required confirm self insurance. Bids shall be rejected, if such confirmation is negative.

9.4 Insurance companies shall indicate solvency ratio submitted to IRDA for the year ending 31.03.2010 & for the 1st quarter of 2010-2011. The minimum solvency ratio shall be 150%. Bids shall be rejected, if the solvency ratio is less than 150%.

9.5 Insurance companies shall indicate rating given by an accrediting agency to the Insurance Company. The Rating shall be at least BBB of Standard & Poor’s (accrediting agency) or equivalent given by other accrediting agencies. As a proof of this the insurance company should enclose copy of the latest rating certificate issued by accrediting agency. However, such rating certificate shall not be prior to 31-12-2008. Bids shall be rejected, if the rating given by the accrediting agency is less than ‘BBB’ of Standard & Poor’s (accrediting agency) or equivalent or if there is no rating or the rating is issued prior to 31-12-2008.

9.6 In case Insurance Company has reinsurance arrangement for subject tender, indicate name of the reinsurer and risks re-insured & rating given by an accrediting agency. The Rating shall be at least BBB of Standard & Poor’s (accrediting agency) or equivalent given by other accrediting agencies. However, such rating certificate shall not be prior to 31-12-2008. Bids shall be rejected, if the rating given by the accrediting agency is less than ‘BBB’ of Standard & Poor’s (accrediting agency) or equivalent or no rating or issued prior to 31-12-2008. In case of no re-insurance such fact is to be stated.

9.7 No intermediate agency/brokers/consultant has been appointed by RINL to deal with the Insurance Company for policy servicing. RINL would deal directly only with Insurance Companies.

10.0 OTHER TERMS & CONDITIONS:

10.1 Qualification Criteria: The tender is open only to Insurance Companies (Non-life category) under the Insurance Act, 1938 and
are registered with IRDA. The Insurance Company should be in the insurance business of Non-life category, at least, for last 3 financial years i.e. 2007-08, 2008-09 and 2009-10. Offers from Intermediaries, Brokers and Insurance Consultants will not be considered.

10.2 Insurance companies having an Office in Visakhapatnam City and/or at Ukkunagaram will be preferred. For this purpose Office would be defined as given below.

10.3 A premises located in Visakhapatnam City or Ukkunagaram from where policy administration work i.e., Policy underwriting, claims settlement etc., would be carried out. For this purpose printed company letter head clearly showing the address and land line telephone bill and/or office premises lease document or ownership title document is to be submitted.

10.4 Any communication sent to or served on this office would be deemed to be served on the Insurance Company on that date.

10.5 It should have the facilities of Telephone, Fax, Computer with internet connection etc.,

Note: In case of an insurance company who have no Office (as stated above) at Visakhapatnam City or Ukkunagaram, their quotes will be loaded by 2% of their quotes for the purpose of evaluation of offer only i.e. for the purpose of ranking with the quotes of bidders who have office at Visakhapatnam City or Ukkunagaram.

10.6 The decision of RINL will be final and binding in respect of an Insurance Company whether such company is “having Office in Visakhapatnam city or Ukkunagaram-530 032” or otherwise.

10.7 If an Insurance Company has Offices in different places in India and also at Visakhapatnam or at Ukkunagaram, the Bidder preferably submit the tender through their Office at Visakhapatnam or Ukkunagaram.

10.8 The successful Insurance Company shall make its own arrangement to ensure collection of declarations, collection of premium on submission of bills and claim bills along with documents from respective departments of RINL and also for handing over the insurance policies, proceeds of claim settlement and other documents from insurance company. The successful Insurance Company shall appoint one individual/agency for the above purpose who will visit VSP on all VSP working days.
10.9 The insurance Company shall appoint a surveyor immediately on receipt of claim(s) intimation from RINL and shall coordinate for immediate settlement of claim as per 4.0 above.

10.10 The Insurance Co. shall promptly attend the meeting(s) called by RINL at Finance and Accounts Department, Visakhapatnam Steel Plant, Administration Building, Visakhapatnam-530 031 to review the issues pertaining to claim settlement. RINL would endeavor advice for such meetings 24 hours prior to the time of the meeting.

10.11 Interested Insurance Companies can inspect various plant assets of Visakhapatnam Steel Plant units and its Mines, if they so desire at their cost, for which insurance cover is proposed to be obtained with prior permission of AGM (F&A)-Insurance on any date from 16-08-2010 to 17 -08-2010 & they may seek clarifications if any, in respect of this tender up to 17-08-2010. No clarifications thereafter will be entertained.

11.0 **TWO PART BID SYSTEM:**

11.1 The tender is a two bid system. The tender shall be submitted in two parts i.e. (1) Technical Bid; and (2) Price Bid. The details of these bids shall be as given hereunder.

11.2 The information and documents sought from the bidders in the tender document shall be submitted in sealed envelopes separately for Technical bid & Price bid, super scribing with the words “Technical Bid for Tender No. VSP/FIN/30/Insurance/2010-11/02 dated 31 -07-2010 for Insurance” and a separate envelop for Price Bid super scribing the words “Price Bid for Tender No. VSP/FIN/30/Insurance/2010-11/02 dated 31-07-2010 for Insurance”. Both the sealed envelopes are to be kept in another sealed envelope super scribing with the words “Quotation for Tender No. VSP/FIN/30/Insurance/2010-11/02 Dated 31-07-2010 for Insurance”.

11.3 **Technical Bid:** The Technical Bid shall be to confirm acceptance of Terms & Conditions, details of policies including policy excesses stipulated by RINL in the List of Insurance Policies. Therefore, the bidders have to submit the entire tender documents together with un-priced (blank) price bid at page number …. enclosed to the tender documents, duly signed in token of acceptance. The premium is not to be quoted in the documents submitted in Technical Bid. The premium is to be quoted only in price bid, the details of which are given elsewhere in this document. The bidder shall sign on all the pages of these tender documents in token of acceptance of terms and conditions and submit as part of technical bid.
11.4 **Price Bid:**

11.4.1 The bidder shall quote lump sum premium in the price bid (i.e. column no. .. of Sl. no.... of price bid at page no.125). Break-up of the lump sum premium into individual risk-wise premium is to be quoted against insurance policies given at Sl no. ..... of price bid at page no...... The bidder shall quote premium net of discounts, if any offered and applicable taxes & duties (net of Cenvat credit). In case of arithmetical error in lump sum premium quoted at column.... of sl no..... of the price bid, the correct lump sum premium shall be arrived based on the individual amounts quoted at column no ..... & .... of price bid for the purpose of tender evaluation. Incase of over-writing/corrections in any of the figures quoted, the same shall be indicated in words. In case of discrepancy between words & figures, words would prevail.

11.4.2 *The interested Insurance Companies shall quote for all risks. The bids without quotation for any risk(s)/ shall be rejected.* Further, mere indication of rate per mille or lakh etc. shall not be considered as premium quoted. The premium quoted shall be for the sum insured indicated against each annexure including taxes and duties applicable (net of Cenvat credit). Failure to quote as above shall be treated as incomplete bid and rejected.

11.4.3 The premium quoted by the Insurance Company shall be binding on them and it should remain firm for the period of policy.

11.5 Last date and time for receipt of tender is **25-08-2010 at 11.00 hrs.** The Technical bid shall be opened on **same day at 11.15 hrs.** Bidder shall ensure that the quotation is submitted in the format duly signed and sealed and sent well in time, either in person or through registered post/courier to reach the undersigned on or before the due date and time. No postal delay or any other delay what-so-ever will be entertained. Tenders received after the due date and time will be rejected.

11.6 If any of the dates mentioned in the tender is a holiday for Visakhapatnam Steel Plant or becomes a holiday for RINL, then at the same time of the next working day for Visakhapatnam Steel Plant will be considered.

11.7 Bidders are to note that clauses contained herein, will form part of insurance Policy/Cover, that may be obtained under this Tender. The bidder shall strictly quote as per the specifications and terms & conditions of the tender. Tenders containing any deviations from the specifications and terms & conditions shall be rejected.
11.8 The details of Sum Insured against each Policy is enclosed at List of policies.

11.9 The value of imported/indigenous cargo covered for Marine risks is inclusive of taxes and duties paid/payable, packing and freight charges, and incidental charges @ 10% on landed cost.

11.10 Rates and discount quoted by the insurance company for all items shall remain firm and net premium arrived at, shall remain unchanged during the currency/pendency of policy subject to clause 5.0. This will not obstruct the settlement of the claims.

11.11 Rates to be quoted shall be with “Policy excess clause” at annexure 1 to 29 as indicated by RINL.

12.0 Details for offering Discounts-Claim statistics & other details:

12.1 Details of Claims Statistics (wherever applicable) is enclosed, vide Enclosure-C for calculating the claim experience discount.

12.2 Copy of Risk Inspection Report submitted by the consultants is placed at enclosure-D, addressing the areas of Physical features and Process description, PML, Fire safety & prevention measures employed by RINL

13.0 Insurance companies may offer Add-on covers at their cost in-addition-to the coverage sought in this Tender. No weightage will be given to such Free Add-on covers in evaluation of Tenders.

14.0 Errors & omissions in this bid would be to the account of the Insurance Company.

15.0 Imposition of any fresh levies in taxes & duties or enhancement in existing taxes & duties after the date of opening of Technical Bid shall be to VSP Account. Similarly, in case of withdrawal of any taxes & duties or decrease in taxes & duties, after the date of opening of technical bid, the consequential benefit shall be passed on to VSP by the Insurance Company. Terrorism Damage reduction benefits if any shall be passed on to VSP if the same is reduced by IRDA during the currency of the policy period.

16.0 The insurance Company shall submit in the 1st week of every month a statement of “Claims pending for settlement” (with reasons/requirements) as well as “Claims settled in the previous month” as per format mutually agreed between the Insurance Company and RINL.
17.0 The cargo movement against Marine Policy/Cover shall be either by road/rail/sea/air/post package/personal luggage/courier service.

18.0 **VALIDITY OF QUOTATION/BID**

The offer should be kept valid for acceptance by RINL for a period 90 days from the date of opening of the technical bid. Tender with lesser validity shall be rejected.

19.0 **RIGHT TO REJECT QUOTATION**

RINL reserves the right to reject any one or all tenders without assigning any reason, thereof.

20.0 In case the Contract is terminated for any reason, the Insurance Company shall be under obligation to refund pro-rata premium for the un-expired period apart from settling all pending claims.

21.0 The tender terms and conditions put forth by VSP shall prevail over the clauses/conditions mentioned in the policies issued by the Insurance Company.

22.0 Bidders are free to download the tender document from the website for the purpose of perusal and to use the same as the tender document, if so desired for submitting their offer. If the offer of any bidder who has submitted the tender document down loaded from the website is accepted, the contract agreement will be prepared based on the master copy of the document and will be binding on the Insurance Company. RINL does not own any responsibility for any alteration/omission in the contents of the Tender form uploaded on the website or purported to be downloaded from the website. No claim on this account will be entertained. RINL will not own any responsibility, if website is not opened for downloading the tender documents due to any technical snag.

23.0 The additional terms and conditions for Group Personal Accident Insurance (GPAI) for Employees of RINL/VSP are at Annexure–28 which shall form part of this tender. These additional terms & conditions will override the other terms & conditions to the extent they are not applicable or in conflict.

24.0 **MEDICLAIM POLICY FOR RETIRED EMPLOYEES**
The additional terms and conditions for Mediclaim Policy for Retired Employees of RINL/VSP are at... which shall form part of this tender. These additional terms & conditions will override the other terms & conditions to the extent they are not applicable or in conflict.

25.0 **ARBITRATION & JURISDICTION**

If any dispute or difference shall arise as to the quantum to be paid under this contract/any policy covered under this contract, such difference shall independently of all other questions be referred to the decision of a sole arbitrator to be appointed in writing by the parties to or if they cannot agree upon a single arbitrator within 30 days of any party involving arbitration, the same shall be referred to a panel of three arbitrators comprising of two arbitrators, one to be appointed by each of the parties to the dispute/difference and the third arbitrator to be appointed by such two arbitrators and arbitration shall be conducted under and in accordance with the provisions of the Arbitration and Conciliation Act, 1996. The proceedings of the arbitration will be held at Visakhapatnam.

All matters in respect of this tender shall fall within the jurisdiction of Visakhapatnam Courts only.

(R VENUGOPALA RAO)
AGM (F & A)
Visakhapatnam Steel Plant
## List of Policies

<table>
<thead>
<tr>
<th>Policy Particulars</th>
<th>Sum Insured (Rs Lakhs)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Fire &amp; Special Perils Policy for VSP Assets</td>
<td>2222818.63</td>
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<tr>
<td>Consequential Loss (Fire) Insurance Policy</td>
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<td>Standard Fire &amp; Special Perils policy for Stocks (on Declaration Basis)</td>
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<td>Terrorism Insurance Policy (Property Damage Risks)</td>
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<tr>
<td>Terrorism Insurance Policy (Business interruption Risks)</td>
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<td>Burglary &amp; Theft Risk Policy For All Stores</td>
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<td>Electronic Equipment Insurance Policy</td>
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<td>Boiler Pressure Plant Insurance Policy for Coke Dry Cooling Plant (CDCP) Boilers</td>
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<td>Boiler &amp; Pressure Plant Insurance Policy for Thermal Power Plant(TPP) Boilers</td>
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<td>Gas Safety Van</td>
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<td>Vehicles Policy (Third Party Insurance)</td>
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<td>Medical Establishment Indemnity Package Policy</td>
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<td>All Risks Policy-Platinum Crucibles</td>
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<td>All Risk Policy for Photography &amp; Video Equipment</td>
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<td>Cash Insurance Policy –Head Office-Cash Section</td>
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<td>Cash Insurance Policy –VSGH-Medical Department</td>
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<td>Cash Insurance Policy of Garbham Manganese Ore Mines</td>
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<td>Public Liability (Act &amp; Industrial Risk) Policies</td>
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<td>Marine (Special Declaration) Policy-Inland transit</td>
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<td>Marine Policy Third Country Imports &amp; Custom Duty (Declaration) Policy</td>
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<td>Marine Policy for Coal</td>
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<tr>
<td>Marine Policy for Limestone</td>
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<tr>
<td>Marine Policy -inland-Second Hand Machinery</td>
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<tr>
<td>Marine Policy - Second Hand Machinery (Export &amp; Import)</td>
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<tr>
<td>Special Contingency Policy (Declaration) for Coal -Storage risk</td>
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<tr>
<td>Special Contingency Policy (Declaration) for Coal - transit risk</td>
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<tr>
<td>Special Contingency Policy for Fogging Machine</td>
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<tr>
<td>Comprehensive Insurance Policy for Thermal Imaging Camera</td>
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<td>Workmen compensation &amp; Group Personal Accident Insurance (GPAI) Policy for Service Contracts</td>
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<td>Group Personal Accident Insurance (GPAI) Policy for VSP Employees</td>
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<tr>
<td>Group Medi-claim Insurance Policy For Retired Employees of RINL/VSP &amp; Their Spouses etc</td>
<td>2931.00</td>
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</tbody>
</table>
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4. Plant details
5. General Description
6. Process Description
7. Utilities
8. Safety, Security and Plant Management
9. Fire Protection System
10. General Recommendations
11. PML Calculation
12. Insurance Recommendations
Visit Details

Date of Visit
26th November – 1st December 2007

Executives Involved
From Rashtriya Ispat Nigam Limited, Visakhapatnam Steel Plant

<table>
<thead>
<tr>
<th>Name</th>
<th>Designation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mr. J. Keshava Rao</td>
<td>GM (F &amp; A)</td>
</tr>
<tr>
<td>Mr. G. N. Murthy</td>
<td>DGM (F &amp; A)</td>
</tr>
<tr>
<td>Mr. A. V. Ranganatha</td>
<td>DGM (F &amp; A)</td>
</tr>
<tr>
<td>Mr. R. Venugopala Rao</td>
<td>AGM (F &amp; A)</td>
</tr>
<tr>
<td>Mr. S. Sadguna</td>
<td>Dy Chief Manager (F&amp;A)</td>
</tr>
<tr>
<td>Mr. Ch Venkata Ramana</td>
<td>Jr. Manager</td>
</tr>
<tr>
<td>Mr. D. S. Kalsi</td>
<td>DGM (SMS) / I/C</td>
</tr>
<tr>
<td>Mr. Subrata Chakraborty</td>
<td>Head of Dept - LMMM</td>
</tr>
<tr>
<td>Mr. A. Sadayappan</td>
<td>DGM, Coal Chemical Plant</td>
</tr>
<tr>
<td>Mr. K. K. Ghosh</td>
<td>DGM (Operations), Wire Rod Mill</td>
</tr>
<tr>
<td>Mr. E. Kaliprasad</td>
<td>DGM (Elect.) MMSM</td>
</tr>
<tr>
<td>Mr. N. G. L. Narayan</td>
<td>AGM, Coal Chemicals Plant</td>
</tr>
<tr>
<td>Mr. K. N. Venkatesan</td>
<td>AGM(O), Coke &amp; Coal Chemicals Dept</td>
</tr>
<tr>
<td>Mr. S. E. Murthy</td>
<td>DGM (TPP), Thermal Power Plant &amp; Blower House</td>
</tr>
<tr>
<td>Mr. R. V. Satyanarayana</td>
<td>DGM(O), C&amp;CCD</td>
</tr>
<tr>
<td>Mr. T. Prabhakar Rao</td>
<td>GM (Mills)</td>
</tr>
<tr>
<td>Mr. Gurudev R. V. S.</td>
<td>DGM(Elec.) Blast Furnace (W) Dept</td>
</tr>
<tr>
<td>Mr. K. Subba Rao</td>
<td>DGM (Utilities)</td>
</tr>
<tr>
<td>Mr. S. Jayaraman</td>
<td>GM(Steel)</td>
</tr>
<tr>
<td>Mr. U. V. L. Murthy</td>
<td>T.A. to GM (Mills)</td>
</tr>
</tbody>
</table>

From Edelweiss Insurance Brokers Limited

<table>
<thead>
<tr>
<th>Name</th>
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</tr>
</thead>
<tbody>
<tr>
<td>Mr. O. T. Ghurka</td>
<td>Risk Management Engineer</td>
</tr>
<tr>
<td>Mr. Srikanth Boddu</td>
<td>Executive – Marketing</td>
</tr>
</tbody>
</table>
Company Profile

Introduction

Visakhapatnam Steel Plant (VSP) is the only shore-based Indian integrated Steel Plant, with a rated capacity of 3.4 Mt Hot Metal, 3.0 Mt Liquid Steel and 2.656 Mt Saleable Steel. The plant was commissioned in the year 1990.

VSP has 7 M tall Coke Ovens with Dry Quenching facility, the 3,200 cu.m Blast Furnace and the 100% Bloom Casting technology and fully computerized Rolling Mill.

Presently the Plant is operating at higher efficiency levels surpassing the rated capacities

Current capacity is as below:

- Hot Metal: 4.15 Mtpa
- Liquid Steel: 3.6 Mtpa
- Saleable Steel: 3.2 Mtpa

VSP has achieved 122%, 120% & 122% of the respective rated capacities during 2005-'06.

VSP has planned expansion in capacity by 2008-09 is as below:

- Hot Metal: 6.50 Mtpa
- Liquid Steel: 6.30 Mtpa
- Saleable Steel: 5.72 Mtpa

The following major facilities are proposed to be added under expansion stage.

1. Blast Furnace of capacity 3800 M³
2. Sinter Machine of capacity 400 M²
3. Steel Melt Shop
   a. 2 LD Converters of capacity 150 M³ Cap
   b. 2 Six Strand Billet Casters
   c. 1 Six Strand Round Caster
   d. Secondary Steel Making Facilities
4. Rolling Mills
   a. Wire Rod Mill of capacity 6.0 Mtpa
   b. Special Bar Mill of capacity 7.5 Mtpa
   c. Structural Mill of capacity 7.0 Mtpa
   d. Seamless Tube Plant of capacity 3.0 Mtpa
5. Wire Rod (Plain) - 5.5 mm to 20 mm in coils
6. Special Bars (Plain) - 16 mm to 40 mm – in coils and straight lengths
7. Seamless pipes - 139 mm to 365 mm
8. Semis - Blooms, Billets
9. A seamless pipe mill is also envisaged.
10. The Project is estimated to cost Rs.8259 Crores
Location

The VSP works is located at Visakhapatnam (Vizag) in the state of Andhra Pradesh. The total area of the works is about 52 sq kms.
Nearest Airport – Airport at Vizag 25 kms
Nearest Railway Station – Vizag Railway station about 35 kms away
Nearest Sea Port – Vizag Port is around 30 kms away
Plant Details
The major plants and facilities at VSP are:
1. Raw Material and Iron Making
   a. Blast Furnace – 2
   b. Coke Plant with 3 Batteries
   c. Sinter Plants – 2
   d. Refractory Department
   e. Raw Material Handling Yards and Associated facilities
2. Long Product
   a. Medium Merchant Mill
   b. Light Merchant Mill
   c. LD shop
   d. Rebar mill
   e. Wire and Rod Mill
3. Secondary Products
   a. Benzene Plant
   b. Ammonium Sulphate Plant
   c. Tar Plant
   d. Slag Plant
4. Shared Services
   a. Power Plant
   b. Blowers and Pump Houses
   c. Industrial Gases
   d. Fuel Management
   e. Waste Recycling Plant
   f. Environment and Occupational health
5. Miscellaneous
   a. Information Technology Services
   b. Canteen Services
   c. Safety and Ergonomics
   d. Security and Fire Brigade
e. Research and Development
f. Laboratory
g. Hospital

**Construction**
All the Iron and Steel making plants like the Blast Furnace, Steel Melting /shop, medium and light merchant shop, wire rod mill etc are constructed of AC sheet walls and AC sheet roofs on iron beams. The Coke and Coal Chemicals plant is open. The office buildings are constructed of RCC roofs with brick walls.

**Vizag Steel Plant Overview**
General Description

Basic steel is a mixture of iron, carbon and other alloying elements. There are four common grades of steel: low carbon steel, mild carbon steel, medium carbon steel, and high carbon steel (the higher the carbon content, the stronger and harder the steel). Low carbon steels used to make car bodies, whereas high carbon steels are used to make cutting tools and rails.

Steel often is mixed, or "alloyed," with other elements (e.g., chromium, nickel, manganese, molybdenum, selenium, tungsten, titanium or vanadium) to give it special properties, such as increased strength, durability or resistance to heat and corrosion. Steel alloys contain from 5% to 50% of one or more alloy metals; alloys with less than 50% iron content are considered ferro-alloys rather than steel. The most common steel alloy is stainless steel (a combination of basic steel, chromium and nickel), a corrosion-resistant metal that has a variety of applications.

Integrated steel mills are typically vast complexes with three major sections: blast furnaces that transform iron ore, coke (a purified form of coal) and limestone into iron; steel-making furnaces that refine iron into semi finished steel; and finishing mills that turn semi finished steel into basic steel products (e.g., bars, pipes, sheets, rods or wire).
Integrated steel mills operate their own power generation facilities, water treatment plants, fire brigades and medical services. Integrated steel companies operate private iron and coal mines to supply their mills.

Integrated steel mills are huge complexes that consume enormous amounts of water, coal, iron ore and limestone.

**Materials and Equipment**
The following are the major materials required for Steel Mills
- Iron ore, limestone, coal, alloy additives, scrap metal
- Fuel oil, Natural gas, water, oxygen.
- Coke ovens and coke oven gas, blast furnaces, basic oxygen furnaces, reheating furnaces, conditioning furnaces.
- Continuous strand casting machines, rolling mills (hot), blooming mills.
- Gear sets.
- Fans, blowers.
- Ladles, kettles, bins, tongs, molds.
- Conveyors, forklifts, cranes, railcars, rail lines
- Electric power generation facilities

Most of these materials are delivered to the site by rail or ship; iron ore, coal and limestone. Steel mills store up to six weeks' supply of certain raw materials (e.g., coal, limestone) in the premises.
Process Description
The steel-making process at VSP entails the following processes

1. **Sizing of Iron Ore, Coke, Dolamite, Limestone, etc**

   The raw materials are stored in material yards. The raw material is picked up using conveyer belts and sent for crushing. Using 2 levels of crushers (primary and secondary) the ore is crushed to the required grain using filters.

   Similarly, coal, limestone and Dolamite is also crushed to the required grade. Using a magnetic separator ferrous impurities are separated out.

2. **Refining coal into coke**

   The first step in steel making is the transformation of coal into a purer form known as coke. Coke provides heat, provides permeability, supports burden materials and also acts as a reducing agent. Coke is a hard, dark grey material that burns longer, hotter and cleaner than coal and is the fuel used to smelt iron ore into iron.

   Major units of Coke Ovens are

   a. **Coal Preparation Plant**

   Coal from storage yard is sent to foreign objects separation section where in Ferromagnetic articles and coal lumps of above 150 mm size are removed. Coal is transported by conveyors to 16 Nos. of storage bins (capacity 800 tons each). Coals from various sources are stored in separate storage bins and are mixed in definite proportions with the help of propositioning devices located at the bottom of each storage bin (also called silo).
The coal-blend is crushed to -3mm size using impact crushers. Thus coal, thus crushed & blended, is conveyed to two coal towers, each of 4000 t capacities.

**b. Coke Oven Batteries**

A coke oven battery is a monolithic structure of refractory brickwork, primarily of high quality Silica and Fireclay bricks of different shapes and sizes. There are 3 coke oven batteries, each of 67 ovens and 7m height. Each oven has an effective volume of 41.6 M$^3$

Coking coals after crushing and blending is subjected to destructive distillation (heating in absence of air) in the ovens. Heating is done for a pre-determined coking period (about 16-18 hrs.) up to the required temperature (1050 +/- 50 $^\circ$C).

Adjacent to each oven there are two heating chambers. The coal charged into the oven is heated indirectly by burning fuel gases, in the heating chamber. Conduction/Convection thus transmits heat to the coal mass through the refractory brick walls. Beneath the ovens and heating chambers, regenerators are located. The hot combustion gases from the heating chambers pass through these separators, which are filled with refractory brickwork, before they are sent out through chimney. By this, heat energy in recovered from the waste gases and the same in used in heating the ovens.

After continuous heating of coal for 16-18 hours coke is formed. The coke mass at a temperature of 1050 +/- 50 $^\circ$C is pushed out of the coke oven by means of a pusher car and sent to Coke Dry Cooling Plant.

**c. Coke Dry cooling Plant**

Each battery is provided with one dry cooling installation comprising 4 cooling chambers. Each cooling chamber can cool 50-52 coke/hr. The red-hot coke from a battery is transported to the top of the cooling chamber in a bucket and charged into it. The residence time of coke in the chamber is 2 to 2.1 Hrs. Circulating gases are forced by mill fan into the distribution channels in the lower part of the cooling chamber. The gases flow upward and coke moves downward in the cooling chamber. The heated gases coming out from the cooling chambers at about 750 – 800 $^\circ$C go to primary dust catchers, waste heat boilers and secondary dust catchers. The temperature of cooled coke is in the range of 180 – 200 $^\circ$C.

**d. Coke Chemicals Recovery**

The chemicals that need to be removed from coke oven gas are benzene, ammonia and benzol hydrocarbon. Tar is removed first by cooling of the coke oven gas by spraying liquor over coke gas. Nearly 60% of the tar gets condensed and is separated out. The remaining gas flows to Primary Gas Coolers (PGC), where it is subjected to cooling water and the gas is cooled to 25$^\circ$C and nearly all the tar gets removed.
The gas is then passed through saturators where 5% sulphuric Acid solution is maintained. Then the gas bubbles through it, ammonia reacts to form ammonium sulphate and is separated out and dried.

The gas is then passed through final gas coolers that removed naphthalene and then passed into benzol scrubbers that remove benzol from the gas which is distilled to remove benzene, toluene, Sol-110 and CB-II. Passing hydrogen gas of required purity does this. Hydrogen is extracted from coal gas by using a molecular sieve.

e. Coke Sorting Plant

Coke is crushed and sorted to make it of size 25-70mm which is used in the blast furnace.

3. Sintering Plant

Sintering is the process of agglomeration of fine ore particles into porous mass due to incipient fusion caused by the combustion of fuel present within the mass. The Sinter plant manufactures sinter as per blast furnace requirement and recycles the metallurgical waste that is generated in the process. The usage of sinter in the furnace improves the productivity, reduces the coke requirements and allows fine control over the slag chemistry. Since the fine iron ore particles cannot be directly charged in the furnace by making sinter, natural resources are saved.

Raw materials for the sintering process are Iron ore fines, Limestone, Dolomite, Coke breeze, Quartzite/River sand, Lime Fines, Metallurgical waste and Manganese Ore fines. There are 2 sinter-making machines each of 312m² grate area. The pallet is filled with sinter mix and ignited. 2 suction fans blow in the air at 1500m³/min, which flows down from the hot top layer to the colder bottom layers. The sinter is then crushed, cooled and sent to the BF.

Raw Material composition is as below (kg per tonne of sinter)
- Iron Ore Fines – 848
- Dolomite – 109
- Limestone – 97
- Coke Breeze - 56
- Sand - 9
- Lime - 7
- LD Slag - 4
- Met. Waste - 63
4. **Blast Furnace**

The raw materials for iron making (iron ore, limestone and coke) are stockpiled in outdoor storage yards. The charge travels along a conveyor belt, up a ramp, and finally is dumped into a blast furnace to smelt the charge into molten iron and slag. The 2 blast furnaces are called Krishna and Godavari with a rated capacity of 3.4 MT annually.

Before the charge is dumped into the blast furnace, a series of tank-shaped stoves next to the furnace are heated. In these stoves, air is heated to 2,000 degrees Fahrenheit and blasted into the furnace at approximately 400 miles an hour. Normally, the stoves are used on a staggered basis; while some are "on blast" (forcing hot air into the blast furnace), others will be "on gas" (heating air); this maintains a continuous rate of production.

When the charge is dumped into the blast furnace, it is suspended in midair by continuous blasts of hot air rushing up from the bottom of the furnace. Continuous exposure to the extremely hot air causes the charge to melt and slowly drop to the bottom of the blast furnace. Approximately halfway down the furnace, the limestone in the charge reacts with the impurities present in the coke and iron ore, drawing them out to form a lava-like material called slag; as slag forms, pure iron is left behind. Eventually, the molten charge (which has been separated into slag and pure iron at this point) collects in a brick-lined reservoir at the bottom of the furnace, called the hearth. Because slag is lighter than iron, the slag lies above the iron in the hearth.

The hot reduction gasses of combustion ascends through the furnace through the charge falling from top and imparts its heat to the charge. This gas contains high amount of carbon monoxide and is reused.

When enough iron has accumulated, the hearth is tapped. First, a hole is drilled through a clay-filled taphole in the hearth above the iron to let the slag pour out. The slag is collected in a slag ladle. Once the slag has been tapped, a lower taphole is opened to allow the molten iron to flow into ladles. While most iron made at a steel plant is used to make steel, some part is cooled into crude ingots known as "pig iron" and sold directly to foundries.

The main features of the furnace are
- Circular cast house with cranes
- Four tapholes
- Cast house slag granulation
- Useful volume of 3200m3 with 12m diameter hearth
- PLC controlled PW charging system
- Gas expansion turbine station for gas recovery
There are 4 double strand pig casting machines with capacity of 1700 tonnes per day each. There are 30 open ladles of capacity 140 tonnes and 7 TLC’s of 300 tonnes capacity.

5. Steel Melting Shop (SMS)

There are 4 BOF at VSP. In the first step of the basic oxygen process, the BOF is tilted toward a charging platform where scrap steel is charged into the furnace. Then, a ladle of molten iron is moved by crane and poured into the BOF; the molten iron will make between 60% and 80% of the total charge. Fully charged, the BOF is returned to an upright position, and a long, water-cooled pipe called an "oxygen lance" is lowered into the furnace near the surface of the molten charge. Once in place, the oxygen lance blows pure oxygen into the furnace at extreme pressure and speed (in excess of the speed of sound). The molten charge, saturated with oxygen, begins to burn at a very high temperature. A measured amount of lime is then released into the furnace; the lime reacts with the charge's impurities and forms a slag, which rises to the top of the molten charge and is discarded. After the oxygen "blow" has ended (usually after 20 minutes), the BOF is tilted toward the "teeming platform" where the refined molten charge rushes through a taphole into a rail-mounted ladle. Carbon and other alloying agents (e.g., tungsten, titanium, molybdenum) are added to the charge to create molten steel. The steel moves through the curved casting machine to a horizontal position, it solidifies throughout, and roller machines flatten the steel to a predetermined thickness. Finally, at regular intervals, mechanical shears cut the continuous strand of steel into "blooms."

LD gases, emitted from the mouth of the converter are collected and cleaned. Each converter is provided with a separate gas cleaning system. The gas is extracted at the converter mouth through an adjustable skirt, movable cooling hood and a fixed cooling
hood where the gas is cooled down to temperature of about 1100 deg. C and then led to a two-stage venturi scrubber where the gas is cleaned and further cooled to about 70 degC with dust content below 100 mg/m³. With electrostatic precipitators, the gas can be cleaned to a dust content of <5 mg/N m³ for use as a fuel inside the works. The slag generated from LD converters is cooled dry and sent to Waste Recycling Plant for recovery of metallic and fluxes.
6. **Wire Rod Mill and Merchant Mill**

Blooms are reheated in walking beam furnace and steel slabs are shaped into rods, bars, rails, angles, channels etc of different sizes. Steel wire is wound around the coiler into a tight coil.

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**Utilities**

The major utilities, which are critical for the manufacturing process, are Steam, Power, Water, Air, Oxygen, Argon and Nitrogen.

**a. Power**

The power requirement of VSP is around 221 Mw at full load. The captive power generation of VSP is 270 Mw i.e VSP is self sufficient to meet all the power need of the plant under normal working. In case partial power failure of the captive power plant due to break down or under maintenance there is an agreement with APSEB to supply the power.

At VSP power is generated through steam turbines. Steam is produced for power generation by burning coal in four boilers boilers. Super heated steam at a pressure 107 kg/cm² is supplied to steam turbines for generation. There are 3 turbines of 60 mega watts and one of 67.5 mw. Power generated at 6.6 kv is stepped up to 220KV through out door transformers in switch yard.
Power is received from Andhra Pradesh Electricity Board at 220 KV from 2 lines fed to 220 kv bus. Power is also generated by waste heat recovery in CO & CCP plant & BF plant.

- Thermal Power Plant(TPP) – 3x60 MW
- back pressure turbine(CO & CCP) -2x7.5 MW
- Gas expansion turbine (BF plant) – 2x12 Mw

The entire plant load of plant is divided in five blocks (LBSS 1 to 5). In each LBSS power is stepped down to 33/11/3.3 kv

Power is supplied to the various department and machinery at 230V, 440V, 6.6KV and DC supply. Most of the transformers are indoor in separate cubical. Transformer, which outdoor baffle wall is constructed between the transformers. There is a separate central maintenance department to look after maintenance of H.T. motors, L.T. motors and D.C. motors above 200 kw

**b. Fuel**

There are 3 major fuels used in the manufacturing process – namely Blast Furnace Gas (BF gas), Coke Oven Gas (C.O. Gas) and L.D. Gas. All the three fuels are generated in – house and are used as heating medium at various points in the plant.

<table>
<thead>
<tr>
<th>Fuel</th>
<th>Generating Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>BF Gas</td>
<td>1 and 2 blast Furnaces</td>
</tr>
<tr>
<td>L.D. Gas</td>
<td>L.D. Shops</td>
</tr>
<tr>
<td>C.O. Gas</td>
<td>Coke Plant</td>
</tr>
</tbody>
</table>

**c. Water**

The water is received from Yelluru reservoir about 150kms from the plant site through gravity channel. There is a reservoir inside the plant that has 45 days storage capacity. Daily water requirement is 3000 metric tonnes.

**d. Air**

There is adequate generation of Instrument Air in the works with redundancy and storage to cater to the requirement of the works.

**e. Industrial Gases**

There is an air separation plant at VSP for generating Oxygen, Nitrogen and Argon. The air is compressed and chilled. Various gasses are then separated out.
Oxygen requirement is 3000 tonnes per day. Oxygen is stored in tanks and supplied. Nitrogen is used for cooling in COCP and SMS plant. It is supplied via pipeline. Argon is used in the Steel Making process.

Acetylene is generated by reacting calcium carbide with water. Acetylene is required for gas cutting of steel.

Safety, Security and Plant Management

SAFETY MANAGEMENT

Safety Department is in place since 1990. Each of the process plants has a dedicated safety officer who is responsible for advising the plant with regards to safety. He is stationed in the process plant itself. There is an apex safety committee consisting of Managing Director / Deputy Managing Director / Deputy Managing Director / Vice – President supported by chiefs of Safety, Environment & OHS,

There are 10 Safety sub committees as follows:

- Audit Observation Committee
- Training Committee
- Contractor Management Committee
- Incident Analysis Committee
- Rail / Road Safety Committee

Area wise implementation committee consists of Department chiefs/Head/Sectional Leaders / Safety Officers

The Management – Employee relationship is excellent and VSP has an impeccable record of no employee unrest in the last 17 years of operation.

Building of Safety Policies and Principles is part of the employee working conditions which every employee has to sign after reading and understanding them. VSP Safety department has placed the following on the intranet so that they are available on-line.

- Safety Manual – Process
- Safety Manual – Construction
- Safety Standards
- Training Modules

Safety Training
Various Safety Training Programs are conducted from time to time by the Safety Department to cover broadly the following topics
- Emergency Preparedness and response
- Safety at works
- Incidents – causes and prevention
- CPR and First Aid
- Gas Safety
- Fire and its prevention
- Use of Personal Protective Equipment
- Safety and Housekeeping

**Safety Awards**

VSP has received the following safety awards.

<table>
<thead>
<tr>
<th>Award</th>
<th>Purpose</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prime Minister’s Trophy</td>
<td>Best integrated steel plant</td>
<td>2005-06</td>
</tr>
<tr>
<td>Commendation prize for strong commitment to Excellence – CII Exim Bank Award for Business Excellence 2006</td>
<td>Overall Excellence in all activities of the company</td>
<td>2006</td>
</tr>
<tr>
<td>Strong Commitment - CII HR Excellence 2006</td>
<td>Excellence in HR processes and practices</td>
<td>2006</td>
</tr>
<tr>
<td>Organizational Excellence Award</td>
<td>Efficient suggestion scheme operation given by INSSAN</td>
<td>2004</td>
</tr>
<tr>
<td>Business Achievement Award for Excellence</td>
<td>Environmental Conservation &amp; Pollution Control presented by Confederation of Asia Pacific Chamber of Commerce &amp; Industry</td>
<td>2004</td>
</tr>
<tr>
<td>CII –GBC National Award</td>
<td>Excellence in Energy management</td>
<td>2004</td>
</tr>
<tr>
<td>Energy Conservation Award by AP</td>
<td>Best organization in Energy</td>
<td>2004</td>
</tr>
<tr>
<td>Award</td>
<td>Description of Achievement</td>
<td>Year</td>
</tr>
<tr>
<td>----------------------------------------------------------------------</td>
<td>-------------------------------------------------------------------------------------------</td>
<td>------------</td>
</tr>
<tr>
<td>Certificate of Appreciation by Institution of Engineers, AP chapter</td>
<td>Excellence in energy conservation</td>
<td>2003-04</td>
</tr>
<tr>
<td>National Award for Excellence in Water Management by CII</td>
<td>Excellence in water management</td>
<td>2002, 2003</td>
</tr>
<tr>
<td>Leadership &amp; Excellence Award in SHE (Safety, Health &amp; Environment)</td>
<td>Excellence in SHE by CII South Zone</td>
<td>2002-03</td>
</tr>
<tr>
<td>CACCI Business Achievement Award</td>
<td>For environmental conservation &amp; pollution control by FICCI</td>
<td>2002-03</td>
</tr>
<tr>
<td>World Quality Commitment International Star Award</td>
<td>Performance excellence, quality management &amp; quality achievement, given by Business Initiative Directions, Paris in the Gold category.</td>
<td>2002</td>
</tr>
<tr>
<td>ICWA National Award</td>
<td>Good performance for excellence in Cost management</td>
<td>2002</td>
</tr>
<tr>
<td>Best Enterprise Award</td>
<td>For surpassing MOU Targets, awarded by SCOPE</td>
<td>2001-02</td>
</tr>
<tr>
<td>Rolling shield for &quot;Environmental Protection&quot;</td>
<td>To recognize efforts in environmental protection, by Directorate of field publicity, Ministry of Information &amp; Broadcasting</td>
<td>2000-01</td>
</tr>
<tr>
<td>Prime Minister's Trophy</td>
<td>Best integrated steel plant</td>
<td>2000-01</td>
</tr>
<tr>
<td>Indira Priyadarshini Vrikshmitra Award</td>
<td>For massive afforestation efforts. Given by Ministry of Environment &amp; Forests</td>
<td>2001</td>
</tr>
<tr>
<td>Best HR Practices</td>
<td>Given by Indian Society for Training &amp; Development (ISTD)</td>
<td>2000</td>
</tr>
<tr>
<td>Environment Excellence Award</td>
<td>For Energy conservation by Greentech Foundation, Delhi</td>
<td></td>
</tr>
<tr>
<td>Best Enterprise Award, WIPS</td>
<td>Given by SCOPE</td>
<td></td>
</tr>
<tr>
<td>Award for Best Turnaround</td>
<td>Given by SCOPE</td>
<td></td>
</tr>
<tr>
<td>Best Management Award</td>
<td>for outstanding contribution in management of industrial relations, labour welfare and productivity given by Govt. of AP</td>
<td></td>
</tr>
<tr>
<td>Shield for &quot;Best efforts in Rain water Harvesting&quot;</td>
<td>AP Pollution Control Board</td>
<td></td>
</tr>
<tr>
<td>SAIL Chairman's Silver plaque</td>
<td>for no fatal accidents (for regular employees category)</td>
<td></td>
</tr>
</tbody>
</table>
Security

There is 20 km boundary wall to the VSP works. There are total about 300 Security Personnel including 25 officers. Security Department is headed by Head – security and assisted by Managers, Inspectors, Sub-inspectors, Assistant Sub-inspectors and sepoys. All gates and control rooms are manned 24 hours. There is communication every hour by wireless with all towers. The following are the security functions:

- To guard Company Property
- Gate Management – Material Gates (Employees & Contractor)
- Gate Pass Management

Security Points
- Perimeter Towers for Surveillance
- Patrolling track along the boundary wall (Cross Patrolling)
- Sniffer dog squad
- Intruder alarm system
- CCTV

Management

The management has in place the following policies for which it has programs and executives responsible to monitor / implement them.

The policies are:
- Quality Policy
- Environmental, Occupational, Health and Safety Policy
- Human Resource Policy
- Alcohol and Drugs Policy
- Research Policy
- Corporate Social Responsibility
- Social Accountability Policy
- Energy Policy

Audit Program

There are the following Audit programmes as part of the review process:
- Internal / External Financial Audits
- Internal / External ISO – 14001 Audit
- Internal / External OHSAS Audit
- Internal / External Social Accountability - 8000 Audit

In addition there are Energy efficiency and Renewable Energy initiatives, Water management program including recycling and reuse of water, Program for skill management of employees and Green Cross movement for tree plantation.

**Maintenance**
A comprehensive maintenance program is implemented to ensure minimum machinery breakdown in each individual plant and related utilities. The testing and maintenance frequency is ranged from once in week (week holiday) to once every six months, depending on nature of equipment and testing items. Regular maintenance activities are carried out on yearly basis as per scheduled program. A complete yearly maintenance program is available. Records of maintenance activities are well maintained. Housekeeping standard is very well maintained on the various shop floor areas.

**Employee Work Force**
There are total about 16000 trained people are working in the plant and about 8000 contract people are working in the plant.
**Fire Protection System**

The risk falls under 'LIGHT HAZARD' category as per FP manual of TAC. The following Fire Fighting Facilities are provided for the protection of the risk.

1. Hand appliances distributed and erected as per TAC rules.
2. Fire Hydrant System as per TAC rules.
3. Automatic Sprinkler spray system for various facilities
4. Manual Call Points with Fire Alarm System through out the plant
5. Smoke Detection and Alarm System for the Control Room in cable galleries, hydraulic system
6. Halon 1301 system for Control room.
7. Automatic CO2 flooding system

The operation and maintenance of fire fighting equipments and systems is entrusted to CISF.

Apart from the above fire fighting facilities, a fully equipped Fire Station is located inside the premises with the following equipments.

<table>
<thead>
<tr>
<th>Sr</th>
<th>Description</th>
<th>Water Capacity</th>
<th>Foam Capacity</th>
<th>Pump Capacity</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Water Tender</td>
<td>3000 Ltr.</td>
<td></td>
<td>2250 LPM at 7 Kg/Cm2</td>
<td>02 Nos.</td>
</tr>
<tr>
<td>2.</td>
<td>Foam Tender</td>
<td>3000 Ltr.</td>
<td>300 Ltr.</td>
<td>2250 LPM at 7 Kg/Cm2</td>
<td>01 No.</td>
</tr>
<tr>
<td>3.</td>
<td>Foam Tender</td>
<td>4500 Ltr.</td>
<td>550 Ltr.</td>
<td>2250 LPM at 7 Kg/Cm2</td>
<td>01 No.</td>
</tr>
<tr>
<td>4.</td>
<td>Foam Tender</td>
<td>3000 Ltr.</td>
<td>550 Ltr.</td>
<td>2250 LPM at 7 Kg/Cm2</td>
<td>03 Nos.</td>
</tr>
<tr>
<td>5.</td>
<td>Mini Foam</td>
<td>1200 Ltr.</td>
<td>250 Ltr.</td>
<td>1800 LPM at 7 Kg/Cm2</td>
<td>01 No.</td>
</tr>
<tr>
<td>6.</td>
<td>Trailer Pumps</td>
<td></td>
<td></td>
<td>1800 LPM at 7 Kg/Cm2</td>
<td>04 Nos.</td>
</tr>
<tr>
<td>7.</td>
<td>Trailer Pumps</td>
<td></td>
<td></td>
<td>1600 LPM at 7 Kg/Cm2</td>
<td>02 Nos.</td>
</tr>
<tr>
<td>8.</td>
<td>Portable Pumps</td>
<td></td>
<td></td>
<td>1200 LPM at 7 Kg/Cm2</td>
<td></td>
</tr>
</tbody>
</table>

There is One Hydraulic Platform 'Snorkel' make capable of reaching 40 Meters Height

**Fire Hydrant System**

Fire Hydrant System has protected the following blocks.

- Thermal Power Plant
- Air Separation Plant
- Acetylene Plant
- Water Electrolysis Plant
The Hydrant Mains are Mild Steel Tubes Heavy grade as per IS:1239, laid 1 M below ground with anticorrosive treatment as per IS:10221. 2 hose reels and one branch pipe are kept in a glass fronted hose box near each hydrant point as per rules.

The hydrant points are as below-

<table>
<thead>
<tr>
<th>Type of Hydrant</th>
<th>No of Points</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yard Hydrants</td>
<td>616</td>
</tr>
<tr>
<td>Landing Hydrants</td>
<td>2123</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2739</strong></td>
</tr>
</tbody>
</table>

There are 20 Fire Water Pump Houses feeding the hydrant points. A list of locations served by each pump house is as below. All the pump sets are operating on flooded suction condition.
<table>
<thead>
<tr>
<th>Sr</th>
<th>Location</th>
<th>Discharge in M/ Hour</th>
<th>Head in meters</th>
<th>Make</th>
<th>Quantity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>COBPP - FPH-1</td>
<td>400</td>
<td>105</td>
<td>M&amp;P</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td>COBPP - FPH-2</td>
<td>320</td>
<td>95</td>
<td>B&amp;C</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
<td>Sinter Plant</td>
<td>600</td>
<td>95</td>
<td>M&amp;P</td>
<td>2</td>
</tr>
<tr>
<td>4.</td>
<td>BF-1</td>
<td>630</td>
<td>95</td>
<td>M&amp;P</td>
<td>2</td>
</tr>
<tr>
<td>5.</td>
<td>BF-2</td>
<td>630</td>
<td>95</td>
<td>M&amp;P</td>
<td>2</td>
</tr>
<tr>
<td>6.</td>
<td>BF-BHS (GROUP-1)</td>
<td>630</td>
<td>95</td>
<td>M&amp;P</td>
<td>2</td>
</tr>
<tr>
<td>7.</td>
<td>BF-BHS (Group-2)</td>
<td>200</td>
<td>95</td>
<td>KBL</td>
<td>2</td>
</tr>
<tr>
<td>8.</td>
<td>BF-BHS (Group-3)</td>
<td>400</td>
<td>105</td>
<td>M&amp;P</td>
<td>2</td>
</tr>
<tr>
<td>9.</td>
<td>Benzyl Plant (Group-I)</td>
<td>475</td>
<td>88</td>
<td>M&amp;P</td>
<td>2</td>
</tr>
<tr>
<td>10.</td>
<td>Benzyl Plant (Group-II)</td>
<td>70</td>
<td>105</td>
<td>M&amp;P</td>
<td>2</td>
</tr>
<tr>
<td>11.</td>
<td>COCCP (TAR Dist)</td>
<td>273</td>
<td>88</td>
<td>M&amp;P</td>
<td>2</td>
</tr>
<tr>
<td>12.</td>
<td>TPP Group I</td>
<td>410</td>
<td>88</td>
<td>M&amp;P</td>
<td>2</td>
</tr>
<tr>
<td>13.</td>
<td>TPP Group II</td>
<td>410</td>
<td>88</td>
<td>M&amp;P</td>
<td>2</td>
</tr>
<tr>
<td>14.</td>
<td>ISBH</td>
<td>96</td>
<td>100</td>
<td>M&amp;P</td>
<td>2</td>
</tr>
</tbody>
</table>

**Water Source**

Above ground Water tanks of total capacity 7000 M3 out of which 3000 M3 is exclusively reserved for fire fighting in two equal compartments inter connected by a suction header of 250 mm dia with isolating Valves. In addition to the above, 11 static tanks are provided.

**Sprinkler System**

The following facilities have been provided with sprinkler system.
- Lube oil enclosure MMSM
- BF- 1 Conveyor Cable Gallery
- BF - 2 Conveyor Cable Gallery
- BHS -1 Conveyor Cable Gallery
- TPP AA Bay & BC Bay
- SP Conveyor and cable gallery
- CO & CCP Conveyor and cable gallery
- Benzol plant shell spray
- TOP NAFC godown
- BHS-NAFC conveyor and cable gallery
General Recommendations

The following recommendations are to be considered for safety and housekeeping:

1. In the parts of the plant where molten metal is handled, the steel structure of the Buildings and Equipment must be protected with suitable heat resistant material.
2. Adequate water draining channels must be provided around all the buildings where molten metal is handled.
3. Less flammable hydraulic oil must be used for all machines and equipments.
4. The AC sheet roof should be properly maintained so that entry of water is avoided from the roof during rains and storms.
5. Refractory linings of various equipments operating at high temperature such as Coke Ovens, Blast Furnace, Oxygen Converters etc to be monitored / regularly inspected and replace in time as failure of which can cause severe explosion due to contact of molten metal with cooling water.
6. Thermography of the critical equipments should be carried out in a regular basis.
7. Various forms of corrosion of steel pipes and equipment due to the presence of Ammonia and Sulfur should be regularly monitored. Also the content of tar in the Coke Oven Gas should be kept as low as possible to avoid choking of the pipes and valves.
8. All the AC sheets may be whitewashed internally on a regular basis to increase the internal visibility inside the plant.
Probable Maximum Loss (PML)

Fire & Allied Perils is defined as the maximum loss potential for the facility from a single incident such as fire and / or explosion within the realms of probability with public and primary protection equipment and service available and operative under abnormal situation where one or more of the protection factors could be ineffective. This estimate excludes catastrophic events such as impact by aircraft, terrorism, tidal waves and for subsidence leading to property damage which is possible but remain unlikely and gives credit to passive protection such as fire walls, space separation, non – continuous combustible loading etc. and human response such as effective emergency response team and fire department response etc.

At VSP there are three most vulnerable and critical plants where if fire / explosion occur all the process come to a stand still. They are:

- 3 detached Coke Oven batteries – 1907Cr
- 2 blast furnaces separated by a fair distance of more then 30 mts distance – 2562 Cr
- 3 steel melting shops – 2676 Cr

(Above sum insured values includes – Plant & Machinery, Building, Office building inside the plant, Electrical Installation, Furniture Fixture Fittings are based on Reinstatement Values)

Out of these in the SMS shop 3 LF furnaces are in one shed placed in one line. There is a possibility of fire and explosion in this shop due to presence of hot liquid molten metal at 1600 degC, water-cooling for skirts, carbon monoxide presence in the LD furnace gases and oxygen lances. If in the middle furnace any fire or explosion occurs there is a possibility of the adjacent furnaces may get affected. Due to any fire or explosion here the Blast Furnace working and the down the line Wire Rod and Merchant Mills may also get affected.

Major fire and explosion will create material damage to the extent of 35% of the SMS Plant and its auxiliary’s sum insured i.e. 35% of 2676 Cr, approximately 937 Cr. Loss of profit impact on the PML working has not been taken into consideration.