GLOBAL NOTICE INVITING EOI NO: VSP/WC/R&D/70450-0/G/2010–2011
DATED 08.11.2010

VISAKHAPATNAM STEEL PLANT IS ON THE LOOKOUT FOR PARTIES WHO ARE HAVING THE KNOWHOW / TECHNOLOGY “ FOR THE DEVELOPMENT OF NEW ROLL MATERIALS FOR THE WORK ROLLS OF ROLLING MILLS OF VISAKHAPATNAM STEEL PLANT ”.

The brief description of work is placed along with the Notice in VSP’s Website www.vizagsteel.com

Interested and eligible Persons / Agencies may submit their “EXPRESSION OF INTEREST“ with all relevant details and supporting documents as mentioned in the brief Note on or before -21st December 2010 to the Dy General Manager – Works Contracts I/c, Visakhapatnam Steel Plant, Visakhapatnam – 530 031, India.
PREAMBLE FOR EXPRESSION OF INTEREST FOR DEVELOPMENT OF NEW ROLL MATERIALS FOR THE WORK ROLLS OF ROLLING MILLS

Visakhapatnam Steel Plant, an integrated shore based plant with an installed liquid steel capacity of 3.0 Mt per annum, was set up at Visakhapatnam in Andhra Pradesh State of India. The Iron and Steel making process follows the conventional route of Blast Furnace, Steel Melt Shop (SMS) and Rolling Mills for production of various long products. The Rolling Mill Complex consists of Light & Medium Merchant Mill (LMMM), Wire Rod Mill (WRM) and Medium Merchant & Structural Mill (MMSM). The blooms produced in SMS in the sizes of 250 X 320 mm and 250 X 250 mm are re-heated in reheating furnaces and rolled in LMMM, WRM and MMSM to produce Wire Rods, Rebars and various sizes of structural products.

Details of Rolling Mills:

**Light and Medium Merchant Mill:**
It consists of 7 Stands Billet mill and 22 Stands Bar mill.

**Billet Mill:**
- Mill type: 2 Hi-Single Strand Continuous Mill
- Input Size: 320 x 250 mm bloom
- Output size: 125 x 125 mm billet
- Production capacity: 2.0 MTPA (Million Tons per Annum)

**Bar Mill:**
- Mill type: 2 Hi-Single Strand Continuous Mill
- Input Size: 125 x 125 mm billet
- Output size: Rounds 16 to 38mm dia and Rebars 16 to 36mm dia
- Production capacity: 0.9 MTPA (Million Tons per Annum)
- Configuration: 8 stand Roughing Mill (2 strand rolling) 5 stand Intermediate Mill (2 strand rolling) 2 x 4 Stand Finishing Mill (Single strand rolling)

**Wire Rod Mill:**
- Mill type: 2 Hi-four Strand Continuous Mill
- Input Size: 125 x 125 mm billet
- Output size: Plain Coils 5.5 to 14mm dia Rebar Coils 8, 10, 12mm dia
- Production capacity: 1.03 MTPA (Million Tons per Annum)
- Configuration: 7 stand Roughing Mill (4 strand rolling) 6 stand Intermediate Mill (4 strand rolling) 4 x 2 stand Pre-Finishing Mill (Single Strand Rolling) 4 x 10 stand Finishing Mill (Single Strand Rolling)
Medium Merchant and Structural Mill:

<table>
<thead>
<tr>
<th>Mill type</th>
<th>2 Hi-four Strand Continuous Mill</th>
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</thead>
<tbody>
<tr>
<td>Input Size</td>
<td>250 x 250mm bloom</td>
</tr>
<tr>
<td>Output size</td>
<td>Rounds 40 to 80mm dia</td>
</tr>
<tr>
<td></td>
<td>Angles ISA 75, 90, 100</td>
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<td></td>
<td>Beams ISMB 125, 150, 175</td>
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<td></td>
<td>Channels ISMC 100, 125, 150, 200</td>
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<tr>
<td>Production capacity</td>
<td>1.08 MTPA (Million Tons per Annum)</td>
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<tr>
<td>Configuration</td>
<td>8 stand Roughing Mill</td>
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<tr>
<td></td>
<td>6 stand Intermediate Mill</td>
</tr>
<tr>
<td></td>
<td>6 stand Finishing Mill</td>
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Work Rolls made of Alloy Forged Steel, Alloy Cast Steel and Spheroidal Graphite Cast Iron are being used in different stands of our Rolling Mills. The present proposal is for developing new roll materials in place of existing roll materials for improvement in pass life, reduction in roll breakages, better fire cracking resistance etc. Some identified stands are mentioned in the annexure with existing specifications and status, and future requirement.

VSP invites Expression Of Interest from Research Organizations / Consultants / Manufacturers who meet the following criteria:

a. Who have got expertise and already executed similar proposal.
b. Who are currently engaged in development and execution of similar projects.
c. Who are interested to take and complete such assignments in a definite time frame.

The agency will study the requirement and give a suitable proposal for selection of materials for manufacturing rolls with required properties.
<table>
<thead>
<tr>
<th>S.NO</th>
<th>MILL</th>
<th>ROLL SIZE &amp; LOCATION</th>
<th>EXISTING ROLL MATERIAL &amp; SPECIFICATIONS</th>
<th>APPLICATION</th>
<th>PRESENT STATUS</th>
<th>REQUIREMENT</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>BILLET</td>
<td>730X1000mm Stand no. 3</td>
<td>Alloy Forged Steel UTS 85-100 Kg/mm² Barrel hardness 40-45 Shore C Neck hardness 40-45 Shore C Approximate Unit Wt. 5.07 Tons Minimum Elongation 10%</td>
<td>7 Stands Billet Mill For Rolling of Billet 125 X 125mm</td>
<td>Excessive pass wear out for present pass life of approx. 40000 Tons.</td>
<td>wear resistant Roll material to achieve 60,000 Tons.</td>
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<tr>
<td>2</td>
<td>BRM</td>
<td>610X1244mm Stand no.2</td>
<td>Alloy Cast Steel UTS 85-100 Kg/mm² Barrel hardness 40-45 Shore C Neck hardness 40-45 Shore C Approximate Unit Wt. 3.6 Tons</td>
<td>22 Stands BAR MILL for Rolling of Rounds &amp; Rebars Sizes from Dia 16 to 40 mm</td>
<td>Excessive pass wearout for present pass life of approx. 9000 Tons.</td>
<td>Wear resistant roll material to achieve 12000 Tons</td>
</tr>
<tr>
<td>3</td>
<td>WRM</td>
<td>490X960mm Stand no.6</td>
<td>Spheroidal Graphite Cast Iron (Pearlite) Barrel hardness 52-57 Shore C Neck hardness 38-44 Shore C Approximate Unit Wt. 1.72 Tons</td>
<td>25 Stands Wire Rod Mill For Rolling of Plain &amp; Rebar coils Sizes from dia 5.5 to 14 mm</td>
<td>a) Roll breakages. b) Fire cracking problem due to which more off is to be removed.</td>
<td>Avoid roll breakages and better fire crack resistant roll material.</td>
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<tr>
<td>4</td>
<td>WRM</td>
<td>375X740mm Stand no.11 to 13</td>
<td>Spheroidal Graphite(Acicular) Cast Iron Barrel hardness 70-75 Shore C Neck hardness 38-44 Shore C Approximate Unit Wt. 0.79 Tons</td>
<td>25 Stands Wire Rod Mill For Rolling of Plain &amp; Rebar coils Sizes from dia 5.5 to 14 mm</td>
<td>Present pass life of 2000-2500 Tons</td>
<td>Expected pass life of approx. 3000-3500 Tons.</td>
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<tr>
<td>5</td>
<td>MMSM</td>
<td>670X630mm Stand no.20</td>
<td>Spheroidal Graphite Cast Iron (Pearlite) Barrel hardness 58-63 Shore C Neck hardness 40-43 Shore C Approximate Unit Wt. 2.5 Tons</td>
<td>20 Stands Medium Merchant and Structural Mill</td>
<td>present pass life of 2500-3000 tons</td>
<td>Expected pass life of approx. 4000 Tons.</td>
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