



**NUMALIGARH
REFINERY
LIMITED**
A GOVERNMENT OF INDIA UNDERTAKING
CIN : U11202AS1993GOI003893



Annexure F

BRIEF DESCRIPTION OF PARADIP- NUMALIGARH CRUDE OIL PIPELINE

Numaligarh Refinery Limited (NRL) a Government of India Enterprise, operates a 3.0 MMTPA Refinery at Numaligarh in the District of Golaghat, Assam since 2000.

Now, NRL is expanding its refining capacity from existing 3.0 MMTPA to 9.0 MMTPA to cater to the growing demand of petroleum products namely Petrol, Diesel, LPG, Kerosene etc. in the Eastern and North eastern States and parts of West Bengal, Bihar and Jharkhand.

The additional Crude Oil required for the expansion will be imported at Paradip Port in Odisha and transported via a cross country Pipeline to Numaligarh.

Government of India vide Ministry of Petroleum and Natural Gas's (MOP&NG) letter No. F. No R-11023/01/2015-OR.dated 28th January 2019 has approved the capacity expansion project of NRL along with Crude Oil pipeline from its proposed Crude Oil Terminal at Paradip (Odisha) to Numaligarh (Assam).

The pipeline shall be laid by acquiring the Right of User (RoU) as per the provisions of Petroleum and Mineral Pipelines (P & MP) Act, 1962.

The proposed 1630 km long Paradip-Numaligarh Crude Oil Pipeline (PNCPL) will be laid across non forest land. The pipeline will be laid 1.2 m (approx) below the natural ground level and the land shall be restored back to its normal position after laying the pipeline. The pipeline project also includes associated facilities such as Sectionalizing Valve (SV) / Tap off/ metering /receiving/ dispatch/intermediate pigging and intermediate pumping stations.

Route Investigation: -

The route has been carefully selected to minimize total length of the pipeline based on desktop study and reconnaissance survey.

The Right of Use (RoU) is proposed as a minimum of 18 mts. width (which is the minimum requirement).

The alignment is selected in such a way that while crossing the area under forest cutting of trees is minimized / avoided.

Design:

The entire pipeline will be designed to withstand a Maximum Allowable Operating Pressure (MAOP) of 87 Kg per Sq Cm(approx.). All applicable design standards like OISD 141/ ASME B31/PNGRB GSR etc shall be complied.

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Pipe material:

Pipe material would be of Carbon steel conforming to American Petroleum Institute (API) 5L with Grade X-70 PSL -2, inspected at mills through third party inspection agency. Entire pipeline would be piggable for cleaning of Pipeline. All pipe fittings would be matching type and class.

Corrosion protection:

The pipeline will be coated with 3 layers of PE coating. All field joints will be coated with Raychem sleeve or equivalent followed by Holiday detection to ensure continuity of corrosion protective layer. A suitable, impressed current Cathodic protection system will be provided as an additional protection to the pipeline.

A competent pipe laying contractor will be engaged for this work. The project will be monitored at site and office levels through latest project management software like MS.

The pipeline will be constructed as per the latest international standards. All good engineering practices will be followed during fabrication and laying of the pipe including usage of approved welding procedures, qualified welders and other approved consumables. Radiography of weld joints will be carried out as per applicable standard. Pigging of the pipeline system during construction will ensure expeditious completion and smooth commissioning. Entire execution will be supervised by a competent Third-Party Inspection (TPI) agency that will in turn test and certify the pipeline trial commissioning.

Investment:

The estimated total cost of the project is Rs. 22594 Crores (Approx.)

Time Schedule:

The project is expected to be completed within 4 years. Pre- project activities such as detail route survey, engineering design, obtaining ROU etc, are expected to be completed by January 2023. M/s Numaligarh Refinery Limited has already conducted pre-project activities like Detail Route Survey and Engineering Design till date. The further, obtaining RoU and Statutory permission activities is going on and at advance stage.

Date:

Place: Paradip

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