Presentation on Motihari-Amlekhgunj Petroleum Pipeline Project

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Motihari-Amlekhgunj Petroleum Pipeline Project Manager

26th August, 2020
Background:

- MoU between the India Government and Nepal Government for the construction of MAPL project was done on 24th August 2015.
- Name of project: Motihari- Amlekhgunj Petroleum pipeline project (MAPL).
- Petroleum products: HSD, MS, SKO.
- Scope: Laying of petroleum pipe line and Up gradation of existing depot at Amlekhgunj.
<table>
<thead>
<tr>
<th>Date</th>
<th>Event Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>2004</td>
<td>First MoU of petroleum Pipeline signed between NOC &amp; IOC during the India Visit of Rt. Hon’ble Prime Minister Sher Bahadur Deuba, GON.</td>
</tr>
<tr>
<td>2014</td>
<td>Joint Group of NOC-IOC discussed and proposed modality of MoU for Construction of Pipeline.</td>
</tr>
<tr>
<td>August 24, 2015</td>
<td>G2G Agreement signed in Kathmandu between Nepal &amp; India by Hon’ble Minister Sunil Bahadur Thapa, GON &amp; Hon’ble Minister Dharmendra Pradhan, GOI for Construction of petroleum Pipeline and allied facilities.</td>
</tr>
<tr>
<td>August 25, 2015</td>
<td>B2B Agreement signed in Kathmandu between NOC &amp; IOC by Er. Gopal Bahdur Khadka, MD, NOC &amp; Mr. Anish Agrawal, Director (Pipeline), IOC for construction of Petroleum pipeline and allied facilities.</td>
</tr>
<tr>
<td>April 7, 2018</td>
<td>Ground Breaking of MAPL by Rt. Hon’ble Prime minister K. P. Sharma Oli, GON &amp; Rt. Hon’ble Prime Minister Narendra Modi, GOI</td>
</tr>
</tbody>
</table>
Scope of the Project

• Construction of Raxaul – Amlekhgunj Petroleum Pipeline of International Standard

• Re-Engineering of Amlekhgunj Depot comprising of receiving facilities

✓ Storage

✓ Dispatch Station

✓ International Standard Laboratory

✓ Fire Fighting
Role Distribution

1. Role Of Indian Oil Corporation Limited
2. Role Of Nepal Oil Corporation Limited
1. Role Of Indian oil Corporation Limited (IOCL)

- To Construct the Pipeline from Indo Nepal Border (Raxaul) to Amlekhgunj Depot.
- To Carry out operation and maintenance of the Pipeline for a specified period.
- To Construct the Pipeline System of High quality confirming to the international Standard.
- Retro-Fitting of Vertical Storage Tanks with radar Gauges.
- Replacing of Inlet Piping, Motor Operated Valves.
- Construction of One MS tanks of 4100 kL.
- Revamping of Firefighting facilities etc.
2. Role of Nepal Oil Corporation Limited (NOCL)

- NOC to obtain acquisition of Land, regulatory and Statutory Approvals for construction of Pipeline.
- To Provide Security of pipeline, personnel, Construction, Operation and maintenance equipment in Nepal Territory
- Encroachment Free
- Clear Pipeline Corridor
Financing of Project (Agreed)

- Indian Oil Corporation Limited
- Estimated IRS 200 Crore
- Infrastructure to be built by IOCL
  - 10” Diameter 41 km Pipe
  - Depot Upragradation by the way of re-engineering and revamping.
  - Retrofitting of vertical Storage Tanks
  - One Number of 4100 kL capacity MS tanks
  - Firefighting Facilities
Nepal Oil Corporation Limited

- Estimated IRS 75 Crore

- Infrastructure to be built by NOCL
  - One Number of 4100 kL capacity MS tanks
  - New Automated (L2 Type) TLF Gantry (3 * 8 bays)
  - International Standard Laboratory with Full Specification and batch formation test
Motihari-Amlekhgunj Petroleum Pipeline Project (MAPL)

• Introduction:
  ➢ Pipeline Systems are safest and most environmental friendly mode of transportation of crude Petroleum, refined products and Natural Gas.
  
  ➢ Being a closed system, minimal handling and transit losses as compared to other means of transportation, hence most efficient.
  
  ➢ Safety & Reliability—minimum disruptions
## Salient Feature of MAPL Project

<table>
<thead>
<tr>
<th>Feature</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mainline Length</strong></td>
<td>India: 33 km and Nepal: 36.2 km</td>
</tr>
<tr>
<td><strong>Diameter</strong></td>
<td>OD- 10.75”, Pipe: API-5LX60</td>
</tr>
<tr>
<td><strong>Wall Thickness</strong></td>
<td>India - 0.250” &amp; Nepal - 0.307”</td>
</tr>
<tr>
<td><strong>Design Capacity</strong></td>
<td>2.0 MMTPA</td>
</tr>
<tr>
<td><strong>Max Operating Pressure</strong></td>
<td>141.2 kg/Sq.cm</td>
</tr>
<tr>
<td><strong>Flow Rate</strong></td>
<td>294 KL/hr (192 kL/hr at Initial phase)</td>
</tr>
<tr>
<td><strong>No. of Sectionalisation Valve</strong></td>
<td>India: 3 Nos. (MOV at 9.5 km, 20 km &amp; 30 km)</td>
</tr>
<tr>
<td></td>
<td>Nepal: 1 (HOV at Ch. 12 km from Indo-Nepal Border)</td>
</tr>
<tr>
<td><strong>Metering Station for Customs</strong></td>
<td>Nonea Village (Raxaul): 30 km from Motihari</td>
</tr>
</tbody>
</table>
## Chainage of MAPL

<table>
<thead>
<tr>
<th>S.N</th>
<th>Station</th>
<th>Chainage (km)</th>
<th>Altitude (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Motihari</td>
<td>0.0</td>
<td>66</td>
</tr>
<tr>
<td>2</td>
<td>Raxaul</td>
<td>33</td>
<td>78</td>
</tr>
<tr>
<td>3</td>
<td>Amlekhgunj</td>
<td>69.2</td>
<td>303</td>
</tr>
</tbody>
</table>
Fig: Road Cross-Section Showing pipeline route
Problems on Pipeline Laying

- Encroachment
- Social Issues
## Encroachment

<table>
<thead>
<tr>
<th>S.N.</th>
<th>Types of Encroachment</th>
<th>Total Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Electric Poles</td>
<td>803</td>
</tr>
<tr>
<td>2</td>
<td>Temple</td>
<td>5</td>
</tr>
<tr>
<td>3</td>
<td>Trees</td>
<td>8</td>
</tr>
<tr>
<td>4</td>
<td>Man hole</td>
<td>16</td>
</tr>
<tr>
<td>5</td>
<td>Hand Pump</td>
<td>1</td>
</tr>
<tr>
<td>6</td>
<td>Buildings (Temporary+Permanent)</td>
<td>235</td>
</tr>
<tr>
<td>7</td>
<td>Boundary Wall</td>
<td>3 places</td>
</tr>
<tr>
<td>8</td>
<td>Petrol pump</td>
<td>1</td>
</tr>
<tr>
<td>9</td>
<td>Forest</td>
<td>Almost 9 km span (Parsa National park)</td>
</tr>
</tbody>
</table>
Fig: Electric pole

Fig: Water Sewage
Petrol Pumps and Boundary Wall
Process for Pipeline Laying

- Approvals from concerned Government authorities.
- EIA Approval
- Clearance of Encroachment
- Clear Pipeline Corridor
Laying Process

- Excavation work
- Stringing of Pipes
- Welding of Pipes
- Coating of welding Joints
- Cathodic Protection
- Testing Of Welding
Excavation Work
Stringing of Pipeline
Welding of pipes
Coating of Welding
Laying of Pipeline
Pic: Safety Mat over Pipeline
Pic: Cathodic Protection
Horizontal Directional Drilling (HDD)
Testing of Pipeline

- Hydrostatic Testing
- Ultrasonic Testing
# Completion Of Project

<table>
<thead>
<tr>
<th>Date</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>June 12, 2019</td>
<td>Mainline Welding and lowering completed</td>
</tr>
<tr>
<td>June 18, 2019</td>
<td>Hydro Testing of mainline completed</td>
</tr>
<tr>
<td>June 28, 2019</td>
<td>Electronic Geomatic Pigging of Mainline Completed.</td>
</tr>
<tr>
<td>June 30, 2019</td>
<td>Mainline Sections made ready for Commissioning</td>
</tr>
</tbody>
</table>
Obstacle Faced on MAPL

• It was new for whole country so people were not aware of petroleum pipeline project due to which people on market area was not allowing for laying of pipeline project.

• Environmental Impact Assessment was conducted only after the project was initially started so that approval for EIA delayed which in result delay clearance of forest of approx 9 km (Parsa National Park). Due to delaying of forest clearance laying of pipeline was delayed.

• Initially it was considered for Horizontal Directional Drilling only for 6 location, due to presence of encroachment (Permanent/Temporary Structures) HDD was conducted on 30 different Location
Lesson Learn from MAPL

• Environmental Impact Assessment shall be conducted on earliest stage of the project so that during Public hearing and on different meetings with public, it will be easy to make understand about the project to the publics.

• Encroachment clearance shall be removed on earliest stage on every site so that work can be done very smoothly.

• Horizontal Directional Drilling(HDD) was initially proposed only on 6 location with increase in HDD numbers cost of the project was also increase. Though the initial cost of the project was estimated to be Rs 275 crore, total project cost escalated to almost Rs 325 crore due to the delay and encroachment.
Thank You