

## CHAPTER: 3 REVIEWS

### Indian Oil Corporation Limited

#### *Branching and Capacity Augmentation of pipelines in Northern Region*

##### *Highlights*

Increase in the pipe size of Mathura-Tundla Pipeline without approved proposals for extension of the pipeline to Kanpur and Gwalior and for expansion of Mathura refinery rendered the expenditure of Rs.6.20 crore on increased pipe size infructuous.

(Para 3.1.6)

Due to delayed review of the demand-supply position, the Company incurred an infructuous expenditure of Rs.2.24 crore on the capacity augmentation of the Panipat-Ambala-Jalandhar sections of the Mathura-Jalandhar Pipeline.

(Para 3.1.7)

An expenditure of Rs.66.68 crore incurred on Phase-II augmentation of Kandla-Bhatinda Pipeline was avoidable as the throughput did not at any time justify this augmentation.

(Para 3.1.10)

Encashment of the bank guarantees of the contractor in excess of requirements resulted in payment of interest of Rs.70.29 crore.

(Para 3.1.11)

##### *3.1.1 Introduction*

The Pipelines division of the Indian Oil Corporation Limited (Company) which was earlier part of Refineries and Pipelines division became a separate division with effect from January 1998. The division had two pipelines viz. Mathura-Jalandhar Pipeline (MJPL) and Kandla-Bhatinda Pipeline (KBPL) in the Northern Region.

The functions of the pipelines are:

- delivery of crude oil to refineries through its crude oil pipelines;
- taking delivery of finished products at the refineries;
- delivery of finished products at the terminals<sup>♦</sup> of the Marketing division.

The pipelines have *en route* pump stations and delivery stations.

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<sup>♦</sup>A large storage site from where finished products are distributed to local area.

**3.1.2** Conceptualisation of pipeline projects with regard to source/characteristics/ tap-off point-wise requirement is done by the Projects (Planning and Systems) division in consultation with Corporate Planning, Marketing and Refinery divisions. The Corporate Planning division prepares product distribution plans commencing at the stage of product source at the refinery upto various consumption centres. This plan is based on various parameters including consumption of petroleum products and end-use patterns, demand and availability of products. The basis of assumption adopted by the Corporate Planning division is the report of the sub-group of the Planning Commission, which determines the demand for petroleum products during the Plan period. The major assumptions adopted by the sub-group for determining the demand for petroleum products during ninth and tenth Plans were as follows:

- Gross Domestic Product growth during the ninth and tenth Plans would be 6.5 per cent;
- Growth in the population as projected by the Planning Commission;
- Growth in the production of vehicles as per Association of Indian Automobile Manufacturers/National Council of Applied Economic Research;
- Administered prices would continue for Motor Spirit (MS), High Speed Diesel (HSD), and Superior Kerosene Oil (SKO) till the end of ninth Plan with a gradual tapering of subsidies on Liquefied Petroleum Gas (LPG).

### **3.1.3 Scope of Audit**

This review conducted during July 2003-October 2003 covers branching and capacity augmentation activities undertaken by the Company during 1998-99 to 2003-04 on two major product pipelines of the Northern Region viz.

- Mathura-Jalandhar Pipeline (MJPL) and
- Kandla-Bhatinda Pipeline (KBPL).

The objective of the review was to see whether the branching and capacity augmentation of Northern Region pipelines was well-planned and well-executed and done as per requirements.

### **3.1.4 Mathura-Jalandhar Pipeline (MJPL)**

The pipeline was commissioned during 1982 in a phased manner to cater to the requirements of petroleum products viz. SKO, MS, HSD and Aviation Turbine Fuel in the North and North-Western parts of the country comprising the states of Uttar Pradesh, Delhi, Punjab, Haryana, Himachal Pradesh and Jammu and Kashmir and strategic Defence and Aviation Centres. The Pipeline has a length of 526 kms consisting of three pipeline sections viz. (i) Mathura to Delhi 147 kms with 16" diameter pipeline (ii) Delhi to Ambala 214 kms with 14" diameter pipeline and (iii) Ambala to Jalandhar 165 kms with 12.75" diameter pipeline. MJPL was linked with KBPL at Panipat, in June 1995 to facilitate the pumping of petroleum products delivered at Panipat through KBPL and also those of the Panipat Refinery.

### **3.1.5 Project planning and implementation**

The review of branching and capacity augmentation activities of MJPL disclosed lack of coordination and monitoring and lacunae in planning amongst the various divisions of the Company for expansion of branch pipelines as detailed below:

#### **3.1.6 Lack of co-ordination amongst the various divisions of the Company in the revision of pipe size: Extra expenditure of Rs.6.20 crore.**

In January 1998, the Board of Directors of the Company, based on the proposal of the Project Appraisal Group, approved a proposal of laying 60 kms long 10” diameter feeder pipeline with a capacity of 0.8 MMTPA from Mathura to Tundla by January 2001 to deliver petroleum products at Tundla.

Subsequently, an Inter-Divisional Working Group on Infrastructure Development of the Company, suggested (May 1999) the extension of Mathura-Tundla Pipeline (MTPL) to Kanpur and laying a branch pipeline from Tundla to Gwalior. The reason cited was the expansion of Mathura Refinery by 2002-03. Considering the product requirements in Tundla, Gwalior and Kanpur the throughput in MTPL was also anticipated to increase to 1.784 MMTPA in 2002-03 and 2.72 MMTPA in 2011-12.

Based on higher throughput projections for the pipeline, the Planning and Projects Committee of the Board of Directors revised (September 1999) the pipe size of MTPL from 10” to 16” with the scheduled date of completion being September 2001. MTPL was accordingly completed in February 2002 and commissioned in February 2003 with 16” pipe at a cost of Rs.45.10 crore (including an extra expenditure of Rs.6.20 crore incurred due to use of 16” pipe size instead of 10” pipe size).

Audit observed that neither the expansion of the Mathura Refinery nor the extension of the pipeline to Kanpur and Gwalior was taken up by the Company. Resultantly, the actual utilisation of the pipeline during 2003-04 was 0.23 MMTPA only against the pipeline capacity of 1.20 MMTPA. The extra expenditure of Rs.6.20 crore incurred due to increase in pipe size was thus rendered infructuous.

The Management stated (November 2003, May -June 2004) that: -

- a proposal was moved for Tundla-Gwalior Pipeline during November 2002, but the same was not pursued as the internal rate of return of the project was very low;
- use of 16” pipe instead of 10” pipe for Mathura-Tundla Pipeline was considered keeping in view the products requirement at Kanpur and Gwalior through this branch line, but non-availability of products at Mathura Refinery for Gwalior was known from Marketing division only in March 2003. Extension of MTPL to Kanpur and Gwalior would be taken up along with future refinery expansion/evacuation plan as the present level of product movement requirement ex-Mathura did not justify immediate extension.

The Ministry stated (December 2004) that project approval was taken in June 1998 based on the then prevailing supply/demand position. However, during 2000-01 the supply/demand growth did not favour expansion of Mathura Refinery and extension of pipeline to Gwalior/Kanpur.

The reply of the Management/Ministry is not acceptable as: -

- the viability of the Tundla Gwalior project was assessed in November 2002 and not before the implementation of the MTPL project with larger diameter. The availability of products for transport, demand and supply position and internal rate of return should have been assessed before revising the pipesize and incurring the expenditure;
- approval of the Board had not been taken for execution of works of Kanpur and Gwalior branch pipelines before execution of the work of MTPL with a higher diameter pipe;
- no proposal for expansion of Mathura Refinery was initiated by the Company based on which throughput requirements for Kanpur and Gwalior were worked out and larger diameter pipeline was laid on Mathura-Tundla section;
- the proposal for extension of MTPL to Kanpur lacked justification because the requirement of petroleum products at Kanpur was already being met by Barauni-Kanpur Pipeline.

Thus, lack of proper co-ordination amongst the Pipeline, Marketing and Refinery divisions, led to wasteful expenditure of Rs.6.20 crore on increasing the pipe size.

### ***3.1.7 Inadequate monitoring of the capacity augmentation of the Panipat-Ambala-Jalandhar Section: wasteful expenditure of Rs.2.24 crore***

Based on throughput and demand growth projections made by the Marketing division (1998), the Company decided (November 1998) to augment the capacity of Panipat-Ambala (PA) section (103 kms) from 3.6 MMTPA to 4.5 MMTPA and Ambala-Jalandhar (AJ) section (165 kms) from 2.45 MMTPA to 3.1 MMTPA by installing one intermediate pump station each between the PA and AJ sections at an estimated cost of Rs.68.52 crore by May 2001.

While the work was under implementation, the Inter-Divisional Group in a meeting (December 2000) decided to defer the implementation of the augmentation work after considering the under-utilisation of PA and AJ sections and reckoning the demand position prevailing at that time. The decision was agreed to by the Board of Directors of the Company (March 2001). However, the Company had incurred an expenditure of Rs.2.49 crore, which ultimately proved to be wasteful. It was also observed that at the time of approval of augmentation, the actual throughput (1997-98) was 2.56 MMTPA in PA section and 1.56 MMTPA in AJ section which continuously declined to 1.97 MMTPA and 1.30 MMTPA respectively in 2000-01 as detailed below:

(in MMTPA)

Year	Throughput for Ambala	Throughput for Jalandhar
1997-98	2.56	1.56
1998-99	2.37	1.43
1999-00	2.12	1.37
2000-01	1.97	1.30

The Management stated (May/November 2003 and May 2004) that:

- the demand supply projections were worked out by the Company on the basis of the Planning Commission data;
- Rs.34.50 lakh had been charged to revenue since it pertained to staff costs on the project management and material worth Rs.1.48 crore was transferred to other units/projects, out of which material worth Rs.25.23 lakh had been consumed;
- when it was observed in the year 2000 that the actual demand throughput requirements for PA and AJ sections were lower, a decision was taken to defer the implementation of the project.

The Ministry stated (December 2004) that the proposal was initiated considering the buoyant situation of growth of petroleum product demand prevalent in the year 1998. Subsequently, there was reduction in growth rate of petroleum products. Since such a decline in growth was required to be evaluated on longterm basis, the project was continued.

The reply of the Management/Ministry is not tenable as the Company mainly relied on the data of the Planning Commission and initiated the work on that basis. Further, the Company took more than two years to take decision (December 2000) to defer the project (24 months had already passed, out of the scheduled completion period of 30 months) despite a continuous declining trend in actual throughput during 1998 to 2000. A regular and timely review of the project could have avoided/ minimised the procurement of stores and wasteful expenditure of Rs.2.24 crore (Rs.2.49 crore less material used Rs.25.23 lakh).

### **3.1.8 Kandla-Bhatinda Pipeline (KBPL)**

KBPL, the largest multi-product pipeline in India, traverses from foreshore terminal at Kandla through the states of Gujarat, Rajasthan and Haryana and terminates in Punjab. The pipeline has a length of 1443 kms consisting of three sections viz. (I) Kandla to Panipat (1113 kms with 22" diameter) (ii) Panipat to Bhatinda (218 kms with 14" diameter) and (iii) branch pipeline from intermediate pump station at Kot to Salawas (Jodhpur) (112 kms with 10.75" diameter). Constructed at a cost of Rs.1853 crore, the pipeline was put into operation in a phased manner during December 1995 to June 1996. The initial capacity of the pipeline was six MMTPA, expandable up to 11.5 MMTPA by providing additional pumping units. The capacity of the pipeline increased to 8.8 MMTPA after augmentation (September 2002).

### 3.1.9 Pipeline projects

The review of construction and capacity augmentation projects of the KBPL disclosed lack of planning as detailed below:

#### 3.1.10 Lack of proper planning in the capacity augmentation of KBPL-Avoidable expenditure of Rs.66.68 crore

Within a year of the commissioning of KBPL the Company felt (January 1997) an immediate need for augmentation of its capacity to 7.5 MMTPA (Phase-I) upto Panipat to meet the projected throughput requirements. The Company augmented the capacity (September 1999) by installation of one pumping unit each at Sidhpur and Sanganer at a cost of Rs.42.62 crore.

Before completion of the capacity augmentation (Phase-I) of KBPL, the Company took up (July 1998) a further augmentation of pipeline capacity from 7.5 MMTPA to 8.8 MMTPA (Phase-II). The phase II augmentation of the capacity was completed in September 2002 at a cost of Rs.66.68 crore. When the Phase-II augmentation was considered by the Company in July 1998, the pipeline had recorded only 5.67 MMTPA utilisation which was less than the capacity of 7.5 MMTPA after the first phase of augmentation and was even less than the original installed capacity of six MMTPA. Therefore, based on the actual throughput performance of the pipeline, Phase-II augmentation at the cost of Rs.66.68 crore taken up in July 1998 was not justified.

The position of installed capacity, supply plan meeting target and actual throughput for the last five years ended 31 March 2004 was as follows:

(in MMTPA)						
Sl. No.	Description	1999-00	2000-01	2001-02	2002-03	2003-04
1.	Installed capacity	6.78*	7.5	7.5	8.58*	8.8
2.	Supply Plan Meeting target	5.29	4.58	4.92	4.20	3.99
3.	Actual throughput	6.90	5.93	5.60	5.09	5.00

\*Pro-rata as the pipeline was augmented during the year.

It may be seen that the actual throughput in the pipeline during the years 1999-2000 to 2003-04 ranged between 6.90 MMTPA to 5.00 MMTPA and remained less than even the original installed capacity of six MMTPA throughout this period except during 1999-00 when it was 6.90 MMTPA. The expenditure of Rs.66.68 crore on the Phase-II augmentation was, therefore, not required.

The Management stated (December 2003 and May 2004) that:

- throughput projections were re-worked in October 1999 after augmentation that indicated marginal reduction in throughput projections as compared to the projections worked out during formulation of the expansion proposal. After reviewing the matter, a decision was taken to proceed with implementation of the augmentation scheme as by that time,
- the overall progress of work had already been achieved by 25 per cent;
- commitments of Rs.23 crore had been made;

- works at Kandla and Sanganer stations were at an advanced stage of completion and it was thought that the implementation of the expansion scheme would facilitate in meeting the peak demand.

The reply of the Management, thus, proved that the augmentation, though not required, had to be continued as *fait accompli*. Thus, the expenditure of Rs.66.68 crore incurred on Phase-II augmentation was avoidable since the throughput did not, at any time, justify such further augmentation.

The Ministry stated (December 2004) that augmentation to 8.80 MMTPA was anticipated considering increasing trend of demand prevalent in 1998. The capacity utilisation in 1999-00 was 115 per cent. Subsequently there was reduction in growth rate of petroleum products, which affected the throughput of the pipeline.

The reply is not tenable because the Company initiated both Phase-I and Phase-II augmentations simultaneously without waiting for the actual utilisation of the pipeline after Phase-I augmentation. The throughput always remained less than the capacity after Phase-I augmentation.

### ***3.1.11 Lack of proper assessment of funds before invocation of Bank Guarantees in execution of KBPL Payment of interest of Rs.70.29 crore***

The contract for design, execution and commissioning of KBPL with an initial design capacity of six MMTPA was awarded (August 1993) to a Consortium led by M/s. Skoda Export Company Limited (Contractor) as a lumpsum turnkey composite works contract for a total value of Rs.1,093.38 crore. The project was scheduled to be completed by February 1995.

While executing the project, the Contractor did not provide, as envisaged in the contract, the master project schedule, due to which effective monitoring of the project activities was hampered. The Contractors failed to keep up their commitments and, thus, the project could not be completed as scheduled in February 1995. The pipeline was taken into operation in phases starting from December 1995 to June 1996, without Supervisory Control and Data Acquisition (SCADA) system<sup>\*</sup>, and Permanent Cathodic Protection (PCP) system<sup>♦</sup>. The Contractor did not give a firm milestone to complete these balance jobs and there was extremely slow progress in the residual jobs.

Due to delays and non-completion of work by the Contractors as per schedule and to get the unfinished works completed at the risk and cost of the Contractor the Company encashed 11 Bank Guarantees (BGs) aggregating to Rs.176.96 crore in October 1996. The Company also terminated the contract (June 1997). The balance works were got completed by M/s. Corrttech International, Ahmedabad (Rs.1.50 crore) and M/s. ECIL, Hyderabad (contract value Rs.8.95 crore) respectively at the risk and cost of the Contractor. Thus the BGs of Rs.176.96 crore encashed by the Company were much in excess of the requirements of Rs.10.45 crore to complete the balance works. The Contractor invoked the arbitration clause and based on the negotiated settlement with the

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<sup>\*</sup>*System is used for monitoring and control of pipeline.*

<sup>♦</sup>*System to provide protection from corrosion.*

Contractor and awarded by the Arbitrator (February 2001) the Company had to pay an interest of Rs.70.29 crore to the Contractor due to encashment of the BGs.

The Management stated (December 2003 and May 2004) that:

- the BGs were encashed for non-performance and to provide the Company with funds to get the balance works completed at his risk and cost;
- the amount was deposited in the bank account and the Company saved interest to the extent of the prevailing SBI prime lending rate;
- interest paid on encashed BGs can be treated as compensated by the notional interest saved by the company on this amount.

The Ministry stated (December 2004) that based on the final settlement arrived at with the party, the payment of interest on the amount of BGs encashed was made.

The reply of the Management/Ministry is not tenable as

- encashment of BGs for the amount of Rs.176.96 crore was not justified as the amount of Rs.10.45 crore only was required for the execution of the balance works;
- the Company also could not utilise the money as the need did not arise. The negotiating committee felt that the demand of the Contractor for interest was genuine;
- the Company has not worked out and intimated the amount of interest actually saved on the amount of BGs encashed and deposited in its special current account;
- there was no provision in agreement regarding the payment of interest on the amounts of BGs encashed for non-performance of contract.

### **3.1.12 Conclusion**

The Pipelines division undertook the execution of the projects for laying of branch pipelines and capacity augmentation of different sections of existing pipelines based on anticipated throughput projections. However, after completion/commissioning of the projects, the actual results achieved indicated that the branching and augmentation of the major projects were executed on the basis of defective planning and lack of proper coordination amongst various divisions of the Company. Consequently, the expenditure incurred proved wasteful and the installed capacity could not be used.

The Ministry stated (December 2004) that proposals were now being put up in a comprehensive manner involving marketing/refineries and pipeline parts as a whole. Pipeline-linked marketing tap-off points were being integrated and implemented by Pipelines division. The Company had been taking initiatives to bridge the identified gaps in the performance area.

The effectiveness of fresh initiatives being taken by the Company can be commented on only after their implementation.

