16TH MEETING

HELD AT

IOCL, DIGBOI REFINERY

ON

MARCH 30, 1987

16th

BY REGISTERED POST

No.J-13013/1/85-Gen-XVI
Government of India
Ministry of Petroleum & Natural Gas
.....

New Delhi, the 7th May, 1987.

To

1. All the Members of the Committee (by name)
2. All the participants listed at Annexure.

Subject: Brief Record of the 16th meeting of the Scientific Advisory Committee for the Ministry of Petroleum & Natural Gas held at Digboi on 30.3.1987.

Sir,

A copy of the brief record of the 16th meeting of the Scientific Advisory Committee for Ministry of Petroleum & Natural Gas held on 30th March, 1987 is sent herewith. Comments, if any, may kindly be furnished, immediately.

Yours faithfully,

T.N. Parameswaran

(T.N. Parameswaran)
Under Secretary to the Govt. of India

Copy alongwith copy of the minutes to:

1. Adv(EPP) 2. Adv(R)/Adv(E) 3. JS(M)/JS(E)/JS(R)/JSFA
4. PS to Secretary(P&NG)
5. [illegible] for following action the proposal for [illegible]
6. FA&CAO, OIDB, 210, Ansal Bhavan, 16, Kasturba Gandhi Marg, New Delhi-110001.

T.N. Parameswaran

(T.N. Parameswaran)
Under Secretary to the Govt. of India

Minutes of the 16th meeting of the Scientific Advisory Committee(SAC) held at Digboi on 30th March, 1987.

The 16th Meeting was held at Digboi under the Chairmanship of Prof. M.M. Sharma on 30th March, 1987. The list of participants is annexed. At the outset members expressed warm appreciation congratulated Prof. Sharma for the Republic Day honour of Padma Bhushan conferred on him by the President of India.

16.1. Shri Dutta, G.M., Assam Oil Division while welcoming the members and the special invitees expressed his appreciation to the SAC holding its meeting at Digboi-birth place of oil industry in India. This is the first refinery to be started in India in the year 1901 and the first generation equipment is still in operation. He mentioned about the achievements of the Assam Oil Division in the various fields including the wide range of products produced by it to meet a variety of demands. However, he said that a time has come when the refinery has to be modernised. A proposal to this effect is under the consideration of the Govt. He also requested that SAC may deliberate on the optimum utilisation of natural resources for the development of the country and the region.

16.2 Minutes of the 15th meeting of the SAC.

No comments were received earlier and no comments were offered in the meeting. The minutes were confirmed.

16.3 Sour gas treatment

Dr.Rihani made a brief presentation of the status paper prepared by them. Dr. Krishnamurthy while elaborating further mentioned of the difficulties they had in the selection of suitable processes for ONGC facilities installed at Hazira at a cost of Rs.250 crores to treat the North Bassein gas. Dr. Vardarajan commented that a more complete survey of the processes available should be done as similar situations must have been encountered by the natural gas producing countries in the world. He also desired EIL to make a detailed assessment of the quantum ofwwork required in the adaptation and development of suitable processes for our use. He also mentioned that one should expect large variations in the composition of gas and the design of facilities should to take care of such eventualities as well as possibilities of treating the imported natural gas. He also enquired about the total quantity of hydrogem sulphide that will be recovered and whether it will be adequate for a viable heavy water plant. He suggested that a brainstorming session should be organised with organic chemists to develop process for the preferential absorption

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of hydrogen sulphide. Prof. Sharma suggested consideration and development of membrane technology especially because of availability of gas at high pressure and possible tolerance of large pressure drops.

The refineries also mentioned of their exnereience is the operation of Claus units and the problems of corrosion in sulphur, special problems are involved at lower capacity utilisation.

After a detailed discussion, it was agreed that we must and develop programmes and identify the agencies to work on:

1). catalyst for the Claus process.

2) materials of construction, particulars in condensers of the Claus Plant.

3) selective solvents.

4) basic data on solvents; and phase equilibrium studies.

5) to direct conversion at high pressures, to sulphur.

For the above course of action, EIL will prepare the requisite information.

It was agreed that an intensive discussion will also be organised with the organic chemists, expecially Dr.Rama Rao.

The Chairman in this context mentioned that instead of overburdening only a few research laboratories with all the work, we must look into the possibilities of widening our base by talking to other research organisations.

16.4 Napthalene from petroleum sources.

Dr. Kothari while making a presentation mentioned that demand for napthalene is estimated to be about 50,000 tonnes per year and the present production from the coal tar distillation is not adequate to meet the requirements. The extracts and the cycle oils from the refineries are the potential raw materials for increasing the production of napthalene substantially.

Dr. Vardarajan mentioned that there is a large potential to produce additional quantities of napthalene in the steel plants and suggested that an overall view of production from SAIL and

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petro-chemical raw materials should be taken. Chairman gave a detailed assessment of napthalene requirements in various industries and the potential from the steel plants and opined that there is a clear need to produce additional quantities from the petrochemical sources. On the possibilities of installing additional facilities in the refineries, to remove aromatics from BH kerosene, it was indicated that this may not be necessary as it is also possible to so distribute the BH crude to maximise the ATF production to meet the requirements. Hence it may be desirable to plan the production of napthalene only on the kerosene aromatic extracts available in the North-East refineries. After a detailed discussion, it was concluded that the additional work is required on:

1) assessing the quality of aromatic extracts from Digboi, Gauhati, BRPL and Barauni refineries.

2) assessing the effect of olefine content in cycle oils on the extraction.

3) development of suitable solvent for FCC cycle oils.

4) developing processing conditions-especially hydro-treating for the cycle oils/extracts from cycle oils

16.5 Conversion of olefins to middle distillates.

Dr. Venkatkrishnan of NCL made a presentation of their proposal and also mentioned about the discussions they had with EIL and BPCL regarding the setting up of a 5 tonne per day pilot plant at a cost of Rs.5.34 crores for this purpose. Initially the olefinic components from the FCC production will be utilised as a feedstock. It is possible to integrate the facilities later for conversion of natural gas into the middle distillates. He said it will take about three years to set up these facilities. It is mentioned that due to environmental constraints, it may be difficult to install any additional facilities in the BPCL premises. In that case alternative locations have to be looked into. It was agreed that this part of the proposal i.e., conversion of olefine to middle distillates can be pursued. There was long discussion on the desirability of integrating the facilities starting from natural gas, The consensus seems to be that the known economics of the presently developed process does not justify the integration of such a pilot plant facilities at this stage. Further work is required to develop an economic alternative.

16.6 Bitumen from Assam Crude

Shri Goswami of AOD made a presentation of the studies they had conducted and the economics of short path distillation/thin film evaporation for the production of bitumen. Very elaborate discussion took place on this interesting subject and the experiences of various

/24-hour a day and 365 days a continuous

organisations using such thin film evaporation techniques in the production of high value products were mentioned. Whether the same techniques can be used in the production of low value bulk petroleum products like bitumen is to be investigated and established. Also the real development is in the bearing from which the rotating mixing mechanism is suspended. Also this thin film evaporation is generally used for intemittent operations and its suitability for continuous/ operations is to be established. The products obtained from such thin film evaporation are to be properly analysed and characterised. The scope for producing some specialised products should be examined. Such analytical data may throw more light and insight into the products. It was agreed that in view of the possible application in other fields and the possible energy conservation that can be achieved through thin film evaporation, a demonstration plant should be set up and utilised to build up the data and the experiences. Further our objective of getting more useful products from bottom of the barrel is expected to be fulfilled through this approach// it is recommended that OIDB may fund such demonstration plant costing about Rs.4 crores. IOC(AOD) will prepare a detailed proposal for the same.

//In view of its importance

It is known that various additive systems are available for improving the performance of asphalts. These include some rubbers and other materials. Shri Rudra said that an American company associated with Lubrizol is effectively marketing large quantity of asphalt additives. These also will be used to develop data on the bitumen produced from Assam crude oil.

16.7. Apart from the other topics, status papers on the following subjects will be prepared and circulated well in advance for discussion in the next meeting:

1) Conversion of olefinic FCC gasoline fractions into ethers through reaction with methanol-EIL/IIP
2) additives gasoline and middle distillates-LIL
3) asphalt additives-LIL
4) new strategies in reforming-IIP
5) possible replacement of sulphur dioxide as a solvent for kerosene extraction-EIL
6) pilot plant for short path-IOC/AOD in consultation with IIP, EIL and RRL distillation. EIL and RRL.

16.8 It was agreed to hold the next meeting of the SAC on 3rd July 1987 in MRL's Office, Madras.

Annexure

LIST OF PARTICIPANTS - SCIENTIFIC ADVISORY COMMITTEE MEETING HELD AT DIGBOI ON 30.3.87.

1.	Prof. M.M.Sharma,	Chairman, UDCT, Bombay.
2.	Dr.S.Varadarajan,	Member Planning Commission, N.Delhi.
3.	Dr.R.Krishnamurthy,	Member EIL
4.	Dr.J.N.Baruah,	Member RRL, Jorhat
5.	Dr.A.P.Kudchadker,	Member IIT, Bombay.
6.	Dr. .V.Krishna,	Member, Adv(PC),Deptt.of Chem.& Petrochemicals, New Delhi.
7.	Dr.P.K.Goel,	Member PCRA, New Delhi.
8.	Dr.N.C.Kothary,	~~X~~ OIDB, Bombay
9.	Shri J.Sen,	~~GM, Indian Oil Blending Ltd., Bombay.~~
10.	Shri S.K.Awasthi,	Head,R&D, IOCL
11.	Shri P.M.Mani,	Acting DGM(T.S), CRL
12.	Shri S.K.Mukherjee	Chief Projects Manager, HOCL
13.	Shri K.L.Mallik	LIL, Bombay.
14.	Shri G.Balamalliah,	IIP, Dehradun.
15.	Dr.D.N.Rihani,	EIL, New Delhi.
16.	Shri G.R.Venkitakrishnan,	NCL, Pune.
17.	Dr.P.K.Rudra,	CMD, LIL, Bombay.
18.	Shri K.K.Malhotra,	ED, Oil Industry Safety Dte.
19.	Shri A.Rebello,	Sr.Manager(QC), CRL.
20.	Shri A.Varadarajan,	Sr.Manager(Dev), MRL
21.	Dr.G.Jayarama Rao,	OSD, Min.of Petroleum & Natural Gas
22.	Shri B.N.Dutta,	GM, AOD
23.	Shri A.N.Das	AOD
24.	Shri S.Sen, AOD	
25.	Shri B.K.Sharma, AOD	
26.	Shri P.K.Chaudhury, AOD	
27.	Shri S.N.Bajerjee, AOD	
28.	Shri I.Chandra, AOD	
29.	Shri K.C.Gogoi, AOD	
30.	Shri R.K.Dutta , AOD	
31.	Shri D.Chakravorty, AOD	
32.	Shri B.K.Das, AOD	
33.	Shri G.C.Goswami, AOD.	

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