# 20TH EETING

# HELD AT

# NATIONAL CHEMICAL LABORATORIES, PUNE

# ON

# MAY 23, 1988

Immediate

No.J-13013/1/87-Gen.XXI
Government of India
Ministry of Petroleum & Natural Gas
....

Dated New Delhi the 19th August,1988.

To

(1) All members of Scientific Advisory Committee (by name)
(2) All participants as at Annexure(by name)
(3) CMDs of BPCL, HPCL, MRL, CRL, BRPL and Dir.(Refineries),IOC

Sub: (i) Minutes of the 20th Meeting of the Scientific Advisory Committee held at National Chemical Laboratory, Pune on 23rd May,1988.

(ii) Next(21st) meeting of the SAC on September 19-20, 1988 at Indian Institute of Petroleum, Dehradun - Agenda for.

Sir,

I am directed to forward herewith a copy of the minutes of the Scientific Advisory Committee meeting held at National Chemical Laboratory, Pune on 23rd May,1988.

2. The next (21st) meeting of the Committee will be held on September 19-20, 1988 at 9.30 A.M. at Indian Institute of Petroleum, Dehradun. The following items will be discussed:

1. Fuel specifications for Diesel - IOC(R&D)
2. " " " Gasoline - LIL
3. " " " Kerosene - IIP
4. Fugitive emissions from refineries - CHT
5. Review of Status of Hydrocracker Pilot Plant - IOC(R&D)
6. Status Report of Sub_Committee on Lube additives:
   (a) Development of Technology for additives
   (b) Testing/certification on indigenous engines - IOC(R&D)
   (c) Future improvements in lubricants
7. Carbon Black Feedstock - Adviser(Chemical)

3. Notes on agenda items will be sent shortly.

4. Kindly make it convenient to attend the meeting.

Encl: as above.

Yours faithfully,

T N Parameswaran

(T.N. Parameswaran)
Under Secretary to the Govt.of India
(Tel: 382583)

Copy alongwith copy of minutes to:
1. Adv(E)/Adv(R) 2. JS(E)/JS(R)/JS(M)/JSFA 3. PS to Secy.(P)
4. FA&CAO, OIDB, New Delhi.

MINUTES OF THE 20TH MEETING OF THE SCIENTIFIC ADVISORY COMMITTEE HELD AT NATIONAL CHEMICAL LABORATORY, PUNE ON THE 23RD MAY, 1980.

The list of participants in the meeting is attached as Annexure.

20.1 Welcome

20.1.1. Dr. L.K. Doraiswamy, Director, NCL, Pune, welcomed the members and invitees to the meeting of the Scientific Advisory Committee(SAC) of the Ministry of Petroleum and Natural Gas. He expressed hapiness that the Committee members could visit NCL, Pune, and see the facilities existing at the Laboratory. He briefly described the range of activities and important highlights of the work done by NCL, Pune. He particularly referred to the work being done for catalyst development for the petroleum and petro-chemical industry. The members of the Committee took this opportunity to visit the various laboratories and pilot plants at NCL.

20.2 Confirmation of the minutes

20.2.1 In view of the comments received from Lubrizol India Limited(LIL), on the discussions held during the last meeting on the Perspective for Lubricants and Additives, the Committee took note of the following:

a) LIL is currently manufacturing Dispersants predominantly of Succinimide types as well as Neutral and Overbased Sulphonates upto 300 TBN and overbased Phenates upto 200 TBN.

(refer item 19.3.4)

...2/-

b) LIL has just concluded a Technology Transfer Agreement with Lubrizol Corporation, USA, under which newer types of Dispersants, namely, overbased Phenates upto 250 TBN and also Magnesium Sulphonate Detergents upto 400 TBN will be taken up for indigenous manufacture.

(refer item 19.3.4)

c) Lubrizol India Limited will be setting up indigenous manufacturing facilities for the major large volume components for S/P compounds for gear oils.

(refer item 19.3.6)

20.2.2. The minutes of the previous meeting circulated earlier were confirmed noting the above comments of LIL.

20.3. <u>Development of CCR Technology & Moving Bed Systems</u>

20.3.1. EIL made a brief presentation on the items that required to be taken for developing the Continuous Catalyst Reforming technology. The basic issue was the development of suitable catalysts for use in the CCR systems and developments in certain aspects of engineering/design of CCR systems.

20.3.2 There was some discussion about the relevant merits of CCR technology. IIP mentioned that there appeared to be distinct merit for using the CCR technology for Benzene and Motor Spirit Production and for dehydrogenation of propane and isobutane. However, the merits are questionable for Xylenes production. It was also mentioned that with

...3/-

the large quantities of natural gas available and surplus of $C_3/C_4$ particularly in Assam, there was a possibility of using the CCR technology for the production of isobutylene and MTBE.

20.3.3. IPCL mentioned that for Xylene production the catalyst activity in the conventional system was not a problem. However, because of pressure drop build up, outages of the reformer reactors were required periodically. Considering that CCR technology would eliminate such outages, there was a definite potential for using this technology for Xylene production also.

20.3.4. NCL expressed the view that development of catalysts and their characterisation for CCR systems must be taken up simultaneously with engineering developmental work.

20.3.5. It was agreed that a composite proposal covering both development of catalysts and engineering of the moving bed system should be considered. In this context EIL, NCL, IIP and IPCL were requested to prepare a position and approach paper covering all the important aspects of the CCR technology.

20.4. <u>Dearomatisation ATF</u>

20.4.1. The Committee complimented HPCL for their assistance and continued participation in this project which was taken jointly by IIP, EIL and HPCL.

20.4.2 The Committee felt that this work should enable the progressive replacement of the $SO_2$ extraction technology being used in the eastern region for dearomatisation of kerosenes produced from Assam crude.

....4/-

20.4.3 It was also suggested that the possibility of replacing the existing food grade Hexane plant based on treatment with oleum at HPCL, Bombay by extraction with sulfolane should also be expeditiously examined.

20.4.4 EIL mentioned that some more work was required to study the impact of kerosene end point; problems associated with the re-generation of the solvent also require further work.

20.5 Enhanced oil recovery

20.5.1 Dr.Barua briefly described the work done by RRL, Jorhat, on enhanced oil recovery. A detailed presentation on the the subject was then made by Shri Subramaniam.

20.5.2 The Committee noted that by and large the work done by RRL, Jorhat, indicated that the enhanced oil techniques may not be economically attractive at the current international oil prices. Inspite of this situation, work is necessary in this area due to our own needs to maximise oil production.

20.5.3 The Committee appreciated the work done by RRL, Jorhat, and members felt that there was a need for developing the capabilities for synthesizing chemicals for EOR and for preparing formulations. A meeting between RRL, Jorhat, Ministry of Petroleum & Natural Gas, ONGC and OIL will be organised to arrive at future course of work.

20.6 Preliminary Report of Sub-Committee on Lube Additives

20.6.1 The Committee noted the comments of Lubrizol India Limited mentioned in para 20.2.1.

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20.6.2. The Committee appreciated that quick follow-up action had been taken by IOC(R&D), IIP, LIL, NCL, RRL, Hyderabad, and RRL, Jorhat, in preparing an interim status report on the subject and noted with keen interest that work was continuing on this subject.

20.6.3. The Committee expressed concern over the hydrocarbon levels in the emissions from 2-wheelers and wanted some concerted work to be done in this field.

20.6.4. Shri R.A. Rao of LIL mentioned that LIL are working with IIP and NCL, Pune, in certain areas as well as in their own R&D Centre to develop indigenous components wherever possible. It was agreed that all relevant products developed by the CSIR laboratories would be given to LIL for testing.

20.6.5. The Committee suggested that the work on future outlook and technology requirements in the field of lubes and additives should be completed quickly and the final report should cover the following:

a) Development of technology for additives, including need for immediate import of components/packages; plans for progressive indigenous production; and manufacturing support required for indigenous components developed.

b) Augmentation of testing/certification facilities particularly on indigenous engines.

c) Plans for future upgradation in quality of lubricants marketed.

d) A plan of action for a new range of additives which will be comparable, if not better, to those that could be anticipated for 1993-1995 on the basis of Scientific Literature or patents.

.....6/-

Carbon Black Feedstock

The paper prepared by Adviser(Refineries) on Carbon Black Feedstock was noted. He highlighted the need for preferentially using CBFS of high BMCI for producing the harder grades of carbon black and for utilising the lower BMCI feedstock material for producing softer grades of carbon black in view of the limited indigenous availability of high BMCI grade CBFS. This matter will be further examined at the next meeting.

20.8. Next Meeting

20.8.1. The next meeting of the Scientific Advisory Committee will be held at IIP, Dehradun on September 19-20, 1988. The following items will be discussed:

1. Fuel specifications for Diesel- IOC(R&D)
2. " " " Gasoline- LIL
3. " " " Kerosene- IIP
4. Fugutuve emissions from refineries- CHT
5. Review of Status of Hydrocracker Pilot Plant- IOC(R&D)
6. Status Report of Sub-Committee on Lube Additives
   a) Development of technology for additives
   b) Testing/Certification on indigenous engines
   c) Future improvements in lubricants
   } IOC (R&D)
7. Carbon Black Feedstock- Adviser(Chemical)

20.9. The meeting ended with a vote of thanks to NCL, Pune for hosting the meeting and the Chairman for conducting the proceedings.

## ANNEXURE

### List of participants

| | | |
|---|---|---|
| 1. | Prof. M.M. Sharma | - Chairman |
| 2. | Dr. G. Jayarama Rao | - Centre for High Technology |
| 3. | Dr. L.K. Doraiswamy | - NCL |
| 4. | Dr. P.K. Mukhopadhyay | - IOC |
| 5. | Shri J.N. Baruah | - RRL, Jorhat |
| 6. | Dr. R. Krishnamoorthy | - EIL |
| 7. | Prof. A.P. Kudchadker | - IIT, Bombay |
| 8. | Shri P.K. Goel | - PCRA |
| 9. | Shri R. Sethuraman | - IPCL |
| 10. | Shri S.N. Mathur | - Adv.(R), M/o Petroleum & N.G. |
| 11. | Shri T.N. Parameswaran | - US(C) |
| 12. | Dr. K.L. Mallik | - LIL |
| 13. | Dr. G. Balamalliah | - IIP |
| 14. | Dr. G.C. Joshi | - IIP |
| 15. | Shri R.A. Rao | - LIL |
| 16. | Shri S.K. Mukherjee | - HPCL |
| 17. | Shri A. Datta | - EIL |
| 18. | Shri S.J. Choptra | - EIL |
| 19. | Dr. D.N. Rihani | - EIL |
| 20. | Shri V. Subramanian | - RRL, Jorhat. |

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