5TH MEETING

HELD AT

DEPARTMENT OF PETROLEUM, MOE, SHASTRI BHAWAN, NEW DELHI

ON

OCTOBER 16, 1982

5th

No.J-13013/3/81-Gen.V.

Government of India
Ministry of Energy
(Department of Petroleum)

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Dated New Delhi the 27th November, 1982.

To

1. All the Members of the Committee
2. All participants who attended the meeting.

Subject: Brief Record of the 5th meeting of the Scientific Advisory Committee for Department of Petroleum held on 16th October, 1982.

Sir,

A copy of the draft record of the Fifth meeting of the Scientific Advisory Committee held on 16th October, 1982 is sent herewith. Comments, if any, may kindly be furnished immediately.

2. All the organisations are also requested to send 35 copies of Agenda notes concerning them referred to in para 5.11 immediately.

Yours faithfully,

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

Encl: as above.

Copy with a copy of enclosures forwarded to:

1. All JSs
2. Adv.(Refineries)
3. Adv.(Petrochemicals)
4. Private Secretary to Secretary (L)

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

Draft Record of the Fifth Meeting of the Scientific Advisory Committee for the Department of Petroleum.

Venue : Department of Petroleum, Shastri Bhawan, New Delhi.

Date : 16th October, 1982

(A list of the participants is attached) (Annexure-I)

The minutes of the previous meeting were reviewed and confirmed. As decided in the last meeting, the programmes of IOC, R&D centre, the processing schemes for the lube oil, studies in hydro-cracking were taken up. Detailed notes on these were circulated earlier.

5.1 Indian Oil Corporation, R&D Centre

Shri P.K.Goel briefly reviewed the work done till now and presented the programme of work to be taken up in the next three years.

Secretary emphasised the need for the upgradation of lube oils and greases marketed in the country and said if any assistance is required that can be obtained from ENI, IFP and Chevron with whom we have umbrella type agreements.

A detailed discussion took place on the use of synthetic oils in the country. It was noted that the present requirements are confined to the aviation, mining and high temperature applications where these are to be inevitably used. The total share of the synthetic lubricants in India is only less than 0.15% whereas it is above 3% in western countries. Unless the synthetic lubricants are used in the automobile sector, the consumption cannot increase. In view of the inherent advantages in the use of synthetic lubricants, it was decided that detailed work should be done on the development of synthetic engine oils and their introduction in the market. Work on the synthesis and production of these synthetic base oils either ester type or polyalphaolefin type should be taken up. A detailed note should be prepared by IOC, R&D indicating a time bound programme for discussion at the next meeting.

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Dr.Tilak said that a detailed assessment of the gaps in the additives technology was made by the Self-Reliance Committee appointed about three years back. However, well defined programmes of work to be undertaken for the devd opment of these additives is yet to be prepared. IOC mentioned that they have been doing some work on this. IOC should strengthen their synthetic chemistry group to undertake extensive work on the basic chemistry and development of additives. A report on the development of additives should be prepared jointly by IOC and Lubrizol for review at the next meeting. This report should also include time bound programme for various additive systems.

The members expressed the view that though a number of R&D programmes were listed, no schedules were indicated. The whole thrust on the development work should be time bound. IOC was requested to present such a programme. This will be reviewed further at the next meeting.

IOC can also consider taking the consultancy services from other organisations or sponsor the programmes for building up basic information in any narrow and specific fields. IOC may identify such programmes.

5.2 Process technology including lube oil processes

Since none of the indigenous crude oils can produce the lubricants by the normal processes, the need for developing a suitable technology based on hydro-cracking and isomerisation were stressed. After a detailed discussions on the extraction and propane deasphalting it was agreed that the development of process technology to produce lube oils from the indigenous crude oils should be given the top most priority.

It was also noted that the indigenous crude oils are not bitumen yielding. Dr.Gulati mentioned that they have been working on the development of a process for the production of bitumen from the Assam crude oil. If the cost of production of bitumen by these processes becomes too high, then the laying of cement concrete roads becomes more economical. The use of coal tar for use for road surfacing should also be considered. These alternatives should be studied in great detail. There is a need to upgrade Bombay High based bottoms.

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A detailed discussion took place on the development of hydro-cracking technology in the country. It was decided that work on this should be started immediately. Development work on both the catalysts and equipment should be pursued simultaneously. The desirability of associating Indian expertise in the design and development when the technology is purchased for the first hydro-cracker was also stressed.

5.3 Pollution

IOC, Refineries Division was requested to prepare a detailed note on the refinery practices for the control of pollution. The stress should be on the recovery of pollutants.

5.4 KIL Research Centre

Dr.Mukopadhyaya explained the salient features of the discussion that took place during the last meeting and said that their present report incorporates all the suggestions during those discussions. Shri Beri informed that they are already acquiring the land in Gurgaon. It was stressed that KIL should go ahead with their Research Centre without any further loss of time and also generate adequate funds to run the research centre.

5.5 Feasibility Report for the creation of Pilot scale facilities for the manufacture and evaluation of catalysts used in hydro-carbon processing industry

The Feasibility Report was discussed by the Members. It was felt that in view of the proposed investment of about Rs.18 crores, this needs a detailed consideration. It was suggested that a team of IPCL officers should discuss this proposal in detail with Dr.Doraiswamy, Director, NCL, who was not able to attend the meeting. The Chairman proposed that this may be discussed further in the next meeting.

5.6 Feasibility Report for the creation of pilot scale facilities for developing process for manufacture of butyl rubber

The representative of IPCL mentioned that the process development for butyl rubber involves R&D on engineering problems and keeping this in view the reactor with a capacity of 25 Kg./day has been designed.

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Based on the results from the 25 kg./day reactor either a 1000 TPA plant would be designed or it may be possible to go straight for a large plant.

Considering the possibilities of further contacts with the process licensors of butyl rubber, it has been decided that the establishment of these facilities would be deferred for sometime.

5.7 Feasibility Report for setting up a pilot plant for development of homogeneous catalyst for polyolefines

Taking into consideration the proposed major expansion in the polyolefines production, the Committee members felt that the work should be taken up immediately on this proposals. Further the investment for setting up pilot facilities seems to quite modest particularly in comparison with benefit that would accrue to the nation, the members approved the proposal of setting up pilot plant facilities for development of homogeneous catalyst at IPCL R&D Centre.

5.8 Feasibility Report for setting up of facilities for melt spinning and wet spinning

It was brought to the notice of the Committee that though IPCL's own interest in product and process development in synthetic fibre area is limited, the need for having a synthetic fibre research facility has prompted setting up of these facilities at IPCL. The Committee expressed that linkages with other organisations like PCL, BRPL and Sasmira, etc. may be worked out so that there is inter-connection between users and the research centre. Keeping in view the cost benefits from such a centre, the SAC approved setting up of these facilities at IPCL.

The SAC also mentioned that while setting up of multiple pilot facilities like the above, IPCL should centralise the infrastructure facilities like nitrogen plant/storage, utilities, etc.

5.9 Non-space application of P-BAN resin developed by ISRO

The main applications of this resin today are with the epoxy resin manufacturers and the demand has been assessed at about 10 tonnes per year. It was decided that its potential market should be tapped further. IPCL would obtain the specifications required by the users and make a plan for

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trial marketing of the samples to be made available by the Vikram Sarabhai Space Centre. IPCL would also obtain necessary budget to take reasonable quantities of samples and work with the potential customers in the next year.

5.10 Polyols based on castor oil

Director of ISRO was requested to give his comments on the report of the BICP on polyols from castor oil. He was also requested to give his comments on the international price of castor oil and the potential for exports vis-a-vis the use of castor oil for polyols. He was also requested to comment on the cost of polyols from castor oil vis-a-vis propylene based polyols.

5.11 It was proposed that the next meeting may be held at Baroda on 15th and 16th December, 1982; the suggested agenda items for this meeting are:-

1. Background note on technology absorption and adoption scheme prepared by Department of Science & Technology.
2. Further areas of R&D in petrochemical sector taking into account already approved/discussed proposals.
3. Paper prepared by Regional Research Laboratory, Hyderabad on centralised mass spectrophotometer facilities.
4. Chemicals requirement and the R&D for chemicals in oil exploration and production fields.
5. R&D in pipeline design and construction.
6. The report of Shri Kurien and Dr.Kothari on the feedstock availability from refineries and petrochemical units for the production of chemicals.
7. The time bound research programmes of IOC, R&D Centre.
8. Pollution control measures adopted in the refineries with an emphasis on recovery.

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9. Research schemes to be sponsored to the universities, IITs, CSIR Laboratories etc.

10. Programme for the development of additives.

11. Refinery process technology development (It is possible to have separate session on the refineries) IIP will prepare a detailed note on the status of the PPDCG Programmes.

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ANNEXURE - I

List of participants who attended the Scientific Advisory Committee meeting held on 16th October, 1982.

Members

1. Shri Vasant Gowariker, VSSC, ISRO, Trivandrum
2. Dr.I.B.Gulati, Director, Indian Institute of Petroleum
3. Dr.P.K.Mukhopadhyaya, Manager, R&D, EIL
4. Prof.M.M.Sharma, Chemical Engineering, Deptt.of Chemical Technology.
5. Prof.Sukhdev, Director, Malti Chem Research Centre, Baroda.
6. Dr.G.Thyagarajan, Director, Regional Research Laboratory.
7. Dr.B.D.Tilak, Ch f Cordinator, Castford, Pune.

Invitees

8. Shri A.J.A.Tauro, Ch.& MD, Indian Oil Corporation.
9. Shri K.C.Mehta, R&D, IOC
10. Dr.S.P.Srivastava, RRD, IOC
11. Shri P.K.Goel, General Manager, IOC
12. Shri J.L.Vasudev, GM(Tech) IOC.
13. Dr.I.S.Bhardwaj, IPCL
14. Dr.T.S.R.Prasada Rao, IPCL
15. Dr.Y.N.Sharma, IPCL
16. Dr.S.Sivaram, IPCL
17. Shri R.Sethuraman, IPCL
18. Shri V.K.Beri, EIL
19. Shri R.Krishnamurthy, EIL, Process
20. Shri G.C.Joshi, IIP.

Department of Petroleum

21. Shri L.Kumar, Secretary, Department of Petroleum
22. Dr.G.Jayaramarao, Adviser (R), -do-
23. Dr.K.Aghoramurthy, Adviser(PC), -do-

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