

11TH MEETING

HELD AT

**MOP&NG,
SHASTRI BHAWAN, NEW DELHI**

ON

DECEMBER 13, 1985

Handwritten signature/initials

By Registered Post

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

Dated New Delhi the 8th Jan. 1986.

To

- 1. All the members of the Committee (by name)
- 2. Sh. J. V. Tauro, Chairman, IOC. 3. Sh. S. K. Nayak, Dir (R&P), IOC
- 4. Shri S. R. Setlur, Consultant, OCC.

- Sub: 1. Brief Record of the 11th meeting of the Scientific Advisory Committee for Ministry of Petroleum & Natural Gas held on 13th December, 1985.
2. Next meeting on 22nd January, 1986 - agenda for.

Sir,

A copy of the brief record of the eleventh meeting of the Scientific Advisory Committee for Ministry of Petroleum and Natural Gas held on 13th December, 1985 is sent herewith. Comments, if any, may kindly be furnished immediately.

2. The next (12th) meeting of the Scientific Advisory Committee will be held on wednesday, the 22nd January, 1986 at 11.00 A.M. in the Ministry of Petroleum & Natural Gas Conference Room No. 202, 'A' Wing, Hastri Bhawan, New Delhi to discuss identification and acquisition of high technology.

3. A copy of 'Report of the Study Group on Centre for Technology upgradation and forecasting' is sent to all the members of the Committee. This will form part of agenda items to be discussed during the meeting. Kindly make it convenient to attend the meeting.

Yours faithfully,

Encl: as above.

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

Copy alongwith copy of the minutes to:

- 1. Adv. (BPP) 2. All JSs 3. Adv (R)/Adv. (E)
- 4. PS to Secretary (Petroleum)
- 5. FA&CAO, OIGB, 704, Surya Kiran Building, 19-K.G. Marg, New Delhi with the request to make arrangements for payment of TA/DA etc. to the non-official members at the time of meeting.

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

104

MINUTES OF THE ELEVENTH MEETING OF THE SCIENTIFIC
ADVISORY COMMITTEE HELD ON 13TH DECEMBER, 1985

This is the first meeting of the re-constituted Scientific Advisory Committee. The list of Members present is at Annexure-I

11.1 Secretary's Opening Remarks :

Secretary welcomed the members and thanked prof. Sharma for accepting his invitation to continue as the Chairman of the SAC for a further period of two years. Secretary said they consider this a very important committee of the Ministry and pay great attention to the deliberations and recommendations of the Advisory Committee and look to it for ideas and guidance in future as well. He mentioned that this Committee should deal with petro-chemicals also as it has been doing all along/this can be a Scientific Advisory Committee jointly for the Ministry of Petroleum and Department of Chemicals and Petro-chemicals. The Petro-chemicals industry should develop together for the best results to be secured both from refining and petro-chemicals. In this connection he mentioned that nearly Rs.500 crores worth of intermediates for petro-chemicals are being imported and there is an urgent need to substitute them by their indigenous production utilising the refinery streams. Hence an integrated development on the basis of the advice offered by the SAC will be the most appropriate one.

and if the Deptt of Chem-icals & Petro-chemicals agree

Secretary also informed the members of the importance the Government is laying on the adoption of high technology in the refining industry and mentioned that they are creating a task force to develop a blue-print for a centre of high technology. He also said that he is keeping a close track on implementation of ideas from the SAC including those financed through funds from IOIDB. As the funds from OIDB are limited, there is greater need to select most suitable projects in basic and applied research for funding.

11.2 Scope of Scientific Advisory Committee :

Prof. Sharma expressed his sincere thanks to the Secretary for his presence and his opening remarks and giving great importance to the recommendations of the SAC. Dr. P.V. Krishna, Dr. Ramaswami, Dr. Gulati, Shri Venkatasubramaniam and other members joined the Chairman in recommending that the Petroleum and Petro-chemicals problems should be deliberated together by this Scientific Advisory Committee. Dr. P.V. Krishna said that he will take up with the Secretary, Department of Chemicals to consider this Scientific Advisory Committee as a Scientific Advisory Committee for Petroleum and Petro-chemicals. It was recommended that JS(PC) should be co-opted as a member.

11.3 TECHNOLOGY IN INDIA.

11.3.1 FCC OPERATIONS:

The Committee discussed in detail the problems concerning upgradation of technology in the refineries. Dr. Krishna of IIP elaborated the work, initiated in the refineries, to optimise the operations of FCC. He mentioned that all the refineries are co-operating in developing these optimisation programmes. He will be able to report to the SAC at its next meeting the progress made in this regard.

✓ 11.3.2 TECHNOLOGY FOR AROMATICS EXTRACTION :-

Chairman expressed appreciation for the successful commercialisation by the BPCL of the benzene/toluene extraction technology developed by IPP/EIL; this technology was strongly supported by the SAC in its earlier meetings for adoption by BPCL. The Committee also noted that the same technology is being adopted by CRL in their benzene unit and expressed the hope that all future units in India will utilise the same technology.

✓ 11.3.3. TECHNOLOGY FOR ISOMERISATION :-

Chairman also expressed his appreciation for the development of xylenes isomerisation catalyst, which is of world class development, and its use by the IPCL. Shri Venkatasubramaniam mentioned that they had changed this catalyst in June, 1985 as a replacement of an Engiehard-- Mobil catalyst. It is giving very good results. The yield of benzene is higher and they are continuing the operations of their unit with this new catalyst developed by NCL - ACC.

11.3.4 PILOT PLANT FOR CATALYSTS :-

Shri Subramaniam informed that the pilot catalyst plant being set up in IPCL will be ready by March, 1987. In this connection discussion took place on the facilities required for surface analysis of catalysts. Chairman informed of the excellent facilities developed at Bangalore by PROF. CNR Rao. IPCL is also developing good facilities for this purpose. It was reiterated that for new technologies to be adopted in refineries and petrochemicals pilot plants will be established along with the main plants.

11.3.5 REFINING TECHNOLOGIES :

Dr. Rihani presented the developments that are taking place in the column internals and the status on refining technology in India.

Dr. Jayarama Rao mentioned that high technology in the refining industry would involve (a) incorporation of energy conservation projects to reduce the fuel and loss,

(b) better fractionation to improve the yield of middle distillates, (c) improved instrumentation for better and safer operations/control, (d) development and adoption of conversion processes including direct conversion of residues to value added products and (e) development and adoption of processes to improve the quality of products. - Efforts have to be made in all these directions; some are already under way while it is necessary to select suitable technologies and also initiate research programmes for the development of others. Dr. Krishnamurthy laid particular emphasis on the instrumentation as per contemporary requirements and utilisation of the existing microprocessor based instrumentation to develop optimisation programme.

11.4 UTILISATION OF HYDROGEN :

Chairman said particular emphasis should be on integrated development of the petro-chemicals industry, laying stress on the utilisation of co-product streams available within the refineries/petro-chemical units. He particularly laid stress on the utilisation of hydrogen generated in the reforming process while producing aromatics. He said that this can be conveniently used for converting benzene to cyclohexane and said these conversion processes should be an integral part of the aromatic complex to utilise economically the low cost hydrogen. In this connection it was desired that Dr. Kothary will prepare an up-dated paper on the availability of hydrogen at various locations and also obtain notes from BPCL, CIL on the use of hydrogen from reformers.

✓ 11.5 UTILISATION OF BUTANE-BUTYLENE STREAMS :-

The note prepared by Dr. Kothary on the availability of C₄ fraction from the refineries was discussed in detail. It was strongly recommended that C₄ fraction from 2 or 3 refineries - at least two refineries should be pooled together for setting up viable butadiene manufacturing facilities. The pooling of the availability from 2 or 3 refineries is an economic necessity. The production of butyl rubber also involves the separation of isobutylene and hence the production of butyl rubber can and should also be taken up by pooling the availability from 2 or 3 refineries. The availability of propane at difficult locations will be considered at the next meeting and Dr. Kothary will collect the relevant data and prepare comprehensive note. It was once again reiterated that C₃ / C₄ fractions from different sources will be considered as feedstocks for chemical industry on merits of the case.

11.6 NEXT MEETING :-

It was agreed that the next meeting of the SAC should be held by about middle of March, 1986.

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Annexure-I

List of participants who attended the Scientific Advisory Committee meeting held on 13th December, 1985 in Shastri Bhawan, New Delhi.

Members

1. Prof. M.M. Sharma, Chemicals Engineering, Deptt. of Chemical Technology, Bombay.
2. Dr. I.B. Gulati, Director, Indian Institute of Petroleum, Dehradun.
3. Dr. H.S. Rao, Managing Director, NRDC, 20 Zamrudpur Community Centre, Kailash Colony Ex.t, New Delhi.
4. Dr. A.P. Kudchadker, Professor, IIT, Powai, Bombay.
5. Shri S. Ramaswamy, Dy. Director General, DGTD, Udyog Bhawan, New Delhi.
6. Dr. P.V. Krishna, Adv. (Chem & Petrochem.), Deptt. of Chemical & Petrochemicals, Shastri Bhawan, New Delhi.
7. Dr. R. Krishnamurthy, Manager (Process Designings), EIL, HT House B1, 18-20, K.G. Marg, New Delhi.
8. Dr. P.K. Goel, General Manager, PCRA, 306, Sethi Bhawan, 7, Rajindra Place, New Delhi.
9. Shri K.N. Venkatasubramanian, Executive Director, JPCL, Gujarat.

Invitees

10. Dr. N.C. Kothary, IPCL/ODB.
11. Shri S.K. Awasthi, Head-R&D, IPCL, Gujarat.
12. Shri G. Raghavendran, General Manager (Dev.) MRL.
13. Shri S.K. Nayak, Director (R&P), IOC, New Delhi.
14. Shri S.R. Setlur, Consultant, OCC, New Delhi.
15. Shri D.N. Rihani, Manager-R&D, EIL.
16. Shri R. Ramakrishnan, Dy. Manager (Research), IOC (R&D), Faridabad.
17. Dr. R. Krishna, Dy. Director, IIP, Dehradun.
18. Shri K.S. Anand, Chief Research Manager, IOC (R&D), Faridabad.
19. Dr. K.K. Bhattacharyya, Dy. Director, IIP, Dehradun.

Ministry of Petroleum & Natural Gas

20. Shri G.V. Ramakrishna, Secretary (Petroleum)
21. Dr. G. Jayaram Rao, Adviser (R)
22. Shri J.S. Misra, Adviser (Exploration)
23. Smt. Lalitha B. Singh, Project Officer.

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