

**25<sup>TH</sup> MEETING**

**HELD AT**

**CENTRE FOR HIGH TECHNOLOGY,  
NEW DELHI**

**ON**

**JULY 19-20, 1991**



No.J-13012/12/89-Gen.  
Government of India  
Ministry of Petroleum & Natural Gas

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New Delhi, dated the 18th Sept. 1991

To

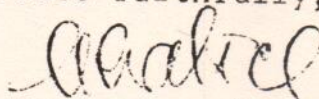
1. All members of Scientific Advisory Committee (by name)
2. All participants as at Annexure
3. CMDs of BPCL, HPCL, MRL, CRL, BRPL, LIL & IOC

Subject:- Minutes of the 25th Meeting of the Scientific Advisory Committee held at Centre for High Technology, New Delhi on 19-20th July, 1991.

Sir,

I am directed to forward herewith a copy of the minutes of the Scientific Advisory Committee meeting held at CHT, New Delhi on 19-20th July, 1991.

Yours faithfully,



(K.C. Katoch)

Under Secretary to the Govt. of India  
T.No. 384376

Copy alongwith copy of minutes to:-

1. Adv(E)/OSD, CHT
2. JS(C&A)JS(E)/JS(R)/JS(M)/FA
3. PS to Secretary(P)
4. FA & CAO, OADB, New Delhi.



MINUTES OF THE 25TH MEETING OF SCIENTIFIC ADVISORY  
COMMITTEE HELD AT CHT, New Delhi, on 19th and 20TH  
JULY 1991.

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Participants:

List of participants given in annexure

Dr. Jaya Rama Rao welcomed the Chairman and members of the reconstituted Scientific Advisory Committee(SAC) who were present for the first meeting in CHT. He also welcomed the Chief Executives and the invitees of this meeting. He recalled the constitution of the Scientific Advisory Committee under the Ministry of Petroleum & Chemicals, when the present chairman was the Secretary in the Ministry and the contribution made by the SAC in its 24 meetings. Under the guidance of the present chairman, Shri Lovraj Kumar, he hoped that the SAC will give valuable advice and recommendations to the Ministry.

Shri M.B.Lal, introduced the subjects for discussion and said that in the context of increasing deficit of products in the country and the foreign exchange position there was need to find new ways and means to exploit the full potential from crude oil and research can be directed towards this. He also said he would like to place on record the great contribution made by Mr. M.M. Sharma, the erstwhile chairman of the SAC since its inception.

25.1 Shri Lovraj Kumar, Chairman, SAC, in his opening remarks mentioned the inadequate amount spent by oil companies on research and development and stressed that this needs correction. He said that technology should be the central point for in all corporate strategy and action. The chief executives and the members, during the discussions, made the following points:

25.1.1 For the R&D to be effective, problems should be chosen on the basis of felt-need. In such a case, the utilisation of the technology will be assured.

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- 25.2 Engineering should be considered as an integral part of R&D and industry has to develop a technology development and engineering plan. The price of foreign technology has risen steeply. There are many opportunities for developing indigenous technology that is very cost efficient.
- 25.3 The chairman, in his remarks, mentioned that there is need for clarity on what to do, how to do and where to do, for proper coordinated research and development. A technology plan has to be formulated and a mechanism for rapid adoption of the development worked out.
- 25.4 Chairman briefly reviewed the decisions taken by the SAC in the previous meetings and expressed distress on the slow pace of implementation. He desired that in the next meeting:
- 25.4.1 EIL should make a presentation of the status of their R&D centre, their second phase of development, activity and the future programmes.
- 25.4.2 IOC should present a paper on the status of development of Hydrocracking Technology and Short Path Distillation and recommendation on what needs to be done.
- 25.5. The topics listed for discussion were presented. After extensive discussion, the following decisions/recommendations were made;
- 25.5.1 Development of FCC technology.
- 25.5.2 R&D requirements in FCC technology
- 25.5.2 (a) Development of catalysts for resid cracking  
It is now necessary to formulate an integrated approach for the rapid development of FCC catalysts and FCC technology domestically. The proposal of CRL in this context is appropriate. A group of experts comprising EIL/IOC/CHT should prepare an integrated plan covering hard-ware technology development and also design capability for new units as well as revamping of existing FCC units. The Group should suggest type, size and location of pilot plant. FCC units should consider adoption of residue cracking operation in their revamping programmes. IIP should take up work on catalyst development for resid cracking.



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to 12 crores will be required if it is also to be used for commercial purposes (for about 9 months in a year). This proposal was considered together with the presentation of EIL (R&D) on development of high performance sheet metal structured packings. EIL indicated that they propose to try out this packing in AU-III of Barauni Refinery; the estimated cost of this packing used in AU-3 of Barauni Refinery is Rs. 1 crore. It was also recognised that a test distillation unit will enable work on other hardware developments to be also carried out. All large oil companies with R&D in refineries have constituted such facilities.

After extensive discussion, it was agreed that a group comprising EIL, IOC, CHT and OSD / CHT should study wherever such facilities can be made available at the lowest possible cost that will permit R&D in structural packings as well other hardware improvements and formulate recommendation by Nov. 1991.

The estimated cost of Rs. 1 crore for evaluation of the new packing materials in AU-III column of Barauni Refinery was approved.

- 25.5.8 Direct conversion of Methane to Methanol by PDIL,
- 25.5.9 Direct conversion of Methane to Methanol by NCL, Pune,  
and.
- 25.5.10 Bio-technological conversion of Methane to Methanol

Dr. Chaudhary of NCL made a detailed presentation on his proposal and mentioned that the proposal was originally

submitted to DST and DST had forwarded to CHT for consideration. The SAC recognised the need for such work. But it was somewhat doubtful if such type of exploratory (speculation) scientific work should come under the purview of SAC. There are other research agencies that fund such exploratory speculative scientific research.

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25.5.14. R&D needs of Pipeline Division:

IOC (R&D)'s presentation on the above was well appreciated. A detailed programme for research needs to be developed. IOC (R&D) will prepare a detailed status note on availability/capacity of pipelines and submit a programme of technology improvement and development within 3 months.

25.6 The Chairman stressed the need for operating companies to have close cooperation with academic/research institutions. OSD/CHT in consultation with Dr. A.P. Kudchadkar, Dr. D.N.Rehani of EIL, Dr. P.K.Mukhopadhyay of IOC (R&D), and Dr. K.Vasudeva of IIT(Delhi) should identify areas of interest to refineries in which academic institutions can play a role.

25.7 ED, CHT is to prepare a paper on Catalytic Dewaxing covering the possibility of its development, evaluation of the NCL catalyst and application in our refineries.

25.8 OSD/CHT<sup>and CHT</sup> must develop a suitable monitoring programme for all research projects for close monitoring and follow up.

25.9 A check list of Action Points is enclosed.



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- b) Work on development of catalyst for resid cracking should go on priority, IIP has already started initial work on this. This should be pursued.

IIP

c) Hydrovisbreaking:

IIP to consider modifying their visbreaker pilot plant so that hydrovisbreaking studies can be carried out on this.

EIL/IIP to plan work on Soaker Technology.

EIL/IIP

- d) Study on hydrogenation of coker distillates need to be pursued on priority.

CHT/IIP Refineries.

e) Wax Crystal Morphology (Optimisation of dewaxing operations)

IIP should work in close collaboration with lube manufacturing plants and try to optimise the performance of the dewaxing/deoiling sections and assist in creating required facilities in refining laboratories for continuous studies of crude characteristics.

IIP/Lube Refineries

f) Test Distillation Unit- Tower Internals:

EIL, IOC, CHT, Adv(R) to examine feasibility of existing refineries conducting studies for evaluating new packings.

EIL/IOC/CHT/OSD/CHT

g) Methane to Methanol Conversion studies:

Deleted from consideration of SAC.

h) Quality of Gasoline:

Oxidation stability of gasoline needs to be improved.

OSD, CHT/CHT/Refineries.

i) Gasoline: Substitutes for Lead:

Know-how for MTBE/ETBE manufacture to be developed.

IIP

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LIST OF PARTICIPANTS

Chairman

1. Shri Lovraj Kumar

Members

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|---------------------------|----------------------------|
| 2. Prof K.Vasudeva        | IIT, Delhi                 |
| 3. Prof. Paul Ratnaswamy  | NCL, Pune                  |
| 4. Dr. A.P.Kudchadker     | IIT, Bombay                |
| 5. Dr. T.S.R. Prasada Rao | IIP, Dehradun              |
| 6. Shri N.K.Sharma        | NRDC, New Delhi            |
| 7. Smt. Lalitha B Singh   | M/o Chemicals & Fertilizer |
| 8. Dr. G.Jaya Rama Rao    | CHT, New Delhi             |
| 9. Shri P.K.Goel          | PCRA, New Delhi            |
| 10. Dr. P.K. Mukhopadhyay | IOC(R&D).                  |
| 11. Shri S.N.Sharma       | CSIR, New Delhi            |
| 12. Dr. I.S.Bhardwaj      | IPCL, Vadodara             |

Officials

- |                             |                 |
|-----------------------------|-----------------|
| 13. Shri C.D. Anand         | EGTD, New Delhi |
| 14. Shri Ashok parthasarthy | DSIR, New Delhi |

Indian Oil Corporation Ltd.

15. Shri K. Venkatasubramanian  
16. Shri S.C.Mehta  
17. Shri N.R.Raja  
18. Shri A.K.Mehta  
19. Dr. S.Ghosh  
20. Dr. R.I. Verma

Centre for High Technology

21. Shri A.M. Prasad  
22. Dr. A.Datta  
23. Dr. G.P. Rai  
24. Shri Venkatraman  
25. Shri M.K.Tyagi  
26. Shri G.G. Rajan  
27. Shri I.Ati  
28. Shri P.R.K. Prasad  
29. Dr. Y.K. Gupta.