18TH MEETING

HELD AT

MOP&NG,
SHASTRI BHAWAN, NEW DELHI

ON

OCTOBER 29, 1987

MINUTES OF THE 18TH MEETING OF THE SCIENTIFIC ADVISORY COMMITTEE, HELD IN THE MINISTRY OF PETROLEUM & NATURAL GAS, ON 30TH OCTOBER, 1987.

The list of participants in the meeting is enclosed as Annexure I.

18.1 Welcome:

18.1.1 Sri Mathur, Adviser(Petroleum) welcomed the members of the reconstituted Scientific Advisory Committee and thanked Prof. Sharma for agreeing to continue as the Chairman. Prof. Sharma thanked the Secretary, Ministry of Petroleum, for the confidence he has shown in asking him to continue as the Chairman for another term and also complimented the members on the excellent contributions they are making in developing ideas and scientific programmes. He also mentioned that the Scientific Advisory Committee of the Ministry of Petroleum & Natural Gas is one of the most active and effective Advisory Committees and is often cited as an example by others. In this context, he mentioned the valuable contributions made by IPCL representatives in the previous meetings of the SAC and said that it will be advisable to nominate either Mr. Venkatasubramanian or someone else from IPCL on this SAC, though petrochemicals is not a part of this industry at present. In view of the great inter-dependence of petroleum and petrochemicals and the organic link of the developments involved in these two fields, their

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association will be very valuable. The members of the SAC endorsed this view and requested the Ministry to consider nominating a representative of IPCL on the Committee.

18.2 Confirmation of the minutes of 17th meeting:

18.2.1. No comments were received on the minutes of the 17th meeting circulated earlier. The minutes as circulated were confirmed.

18.2.1. Dr.Varadarajan said the programme of work recommended for the short-path distillation of the residues by the SAC a previous meeting should be pursued and enquired about the status. It was mentioned that a formal proposal from IOC, after approval by their board, is awaited for processing for financial assistance for its implementation. CHT will process this as soon as it is received.

18.3 Proposals for manufacture of additives:

18.3.1 Sri Mathur made a brief presentation on the additive manufacturing industry in the country and the proposals of MRL and Savita Chemicals to set up additional units in collaboration with American companies and sought the considered views of the SAC on the scientific and technological contents of the proposals taking into consideration the status of production and technology in the country and the developmental efforts put in this area. It was also clarified that such consideration by the

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SAC is in accordance with the observations of the committee of Secretaries which suggested that the functions of technology forecasting, technological upgradation, identification and acquisition of technology, could be best performed through the structure of Scientific Advisory Committees of the departments and also the programme for technological upgradations could be finalised after discussion by the SAC.

18.3.2. After a detailed discussion the SAC felt that their role should be confined to assess the future technological requirements and the present status and develop a programme of work and scientific inputs to attain these objectives; the Committee should not get into the assessment of individual capabilities of collaborators and companies. Hence this may be best done by the Ministry and through established channels of the Government.

18.3.3. In the 15th meeting, the SAC had considered the proposal of LIL and identified some areas which can best be developed through indigenous R&D efforts. It is also realised that in the additive technology the formulation of additive package, their testing and evaluation both in the laboratory as well as the field, is as important as the manufacture of basic components. To discuss and formulate a detailed strategy of development for attaining technological self-reliance, Dr. Mukhopadhyay of IOC(R&D) was requested to prepare a comprehensive note on

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lubricants and lubrication requirements for the emerging high power automotive and rail-road engines, defence equipments, marine and aviation sectors, etc., their additive requirements and facilities for development, testing and evaluation. Dr.Mukhopadhyay has agreed to prepare this note before first week of January 1988 for circulation to the members before the next meeting.

18.4. Dearomatisation of kerosene:

18.4.1. The note prepared by Dr.Kothari on dearomatisation of kerosene was circulated earlier. Dr.Kothari made a brief presentation on the relative economics of hydrogenation and the extraction routes. The members felt that the investment and operating costs, expecially for the hydrogenation of kerosene, seem to be on the low side and need a reivew by an engineering consultant. EIL has agreed to review this and advise.

18.4.2. The new solvents developed have certain advantages and reduced the cost compared to the use of conventional liqui liquefied sulphur-di-oxide. Dr.Rihani of EIL informed that after the commissioning of the pilot plant in the HPCL refinery at Bombay, experiments were done with various solvent feed ratios and these have produced good quality ATC. It is necessary to develop engineering data on the feasibility of converting the existing SO_2 extraction units for use of sulpholane. It should be taken up by the operating units and the EIL immediately.

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18.4.3. The detailed data on the analysis of stocks of kerosene before and after hydrogenation is required. A note on this will be prepared by the Indian Institute of Petroleum before the fist week of January 1988 for circulation to the members before the next meeting.

18.4.4. Dr.Mukhopadhyay mentioned that new types of catalysts have been developed for hydrogenation at low pressure and they are planning to evaluate these in the unit at Cochin Refineries Limited. If this is successful the cost of hydrogenation will come down steeply due to the use of low pressures. He will report the progress later.

18.4.5. The aromatic extracts obtained through the extraction routes may contain good precursers for the manufacture of naphthalene and this should be analysed to see the potential as the napthalene requirement in the western region is much more than in the other areas. This aromatic extract is also expected to be a good feed stock for the manufacture of carbon black. This potential is also to be estimated.

18.5 Rhedological studies on waxy crudes:

18.5.1. Dr.Joshi of IIP made a presentation on the studies they have conducted on the rhedology of waxy crudes. The crude oils studied are Bombay High, Ratna, and Borholla, all of which contained over 10% of wax. The studies have shown the relationship between the flow characteristics

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and the composition. The information is shared with other laboratories and the operating companies. Members complimented the IIP on the development of this basic data which will be useful in the development of [illegible] flow improvers. Dr. Rama Rao said it is still not clear why the same flow improver works well at one time and does not respond at another time eventhough the conditions are similar. Much more information has to be developed to understand this further.

18.6 CCR Technology:

18.6.1. In its last meeting, the SAC felt the need to develop the CCR technology in the country and requested EIL to prepare a paper on the programme to be undertaken for achieving this. The paper prepared by EIL was circulated in the meeting and was discussed. Dr.Rihani informed that EIL is now of the opinion that CCR technology for reforming is not at present required and efforts should be concentrated on hydrodynamics and hardware. He also mentioned that they have entered into an agreement with IFP for the development of CCR. Members were of the opinion that this area deserves a more concentrated effort and the Chairman desired that EIL should bring specific proposals detailing the facilities required, cost, the organisation which can take up developing the CCR technology in the country. This will be discussed further in the next meeting.

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18.7 Other points:

18.7.1 Dr.Varadarajan said the natural gas and natural gas condensates will form an important raw material/feed stock for the future developments in the country. The composition of gas from various sources is also different and this is now available. He mentioned that a group has been constituted by the Planning Commission for studying in detail the future of natural gas utilisation.

18.8 Next meeting:

18.8.1 The next meeting of the SAC will be held on 12th February, 1988 at Cochin in the Cochin Refineries Limited Office. The following subjects will be taken up for discussions:-

1. Perspective of lubricants and additives.
2. ATF dearomatisation.
3. Programme for development of CCR technology.
4. Fuel and asphalt additives.
5. Status of IIP catalyst evaluation at IPCL (for reforming of naphtha).

ANNEXURE I

Scientific Advisory Committee Meeting
on 29.10.87 at 11.00 A.M. in New Delhi.

Name	Office	Signature
1. M.M.Sharma	Bombay University	
2. A.P. Kudchadker	IIT/Bombay	
3. N.K.Sharma	MD,NRDC	
4. A.V.Rama Rao	RRL, Hyderabad	
5. P.V.Krishna	Deptt. of Chem.& PC.	
6. Dr.S.Varadarajan	Planning Commission	
7.P.K.Mukhopadhyay	IOC(R&D)	
8. Dr.G.Jayaramarao	ED, HTC	
9. Dr.P.K.Goel	ED, PGRA	
10. Dr.Ram Iyengar	Addl.Secy DSR Addl.DG CSIR	
11. Dr.N.C.Kothari	IOC	
12. K.C.Jain	IOC(R&P)	
13. P.K.Kapil	IOC(R&P)	
14. D.N.Kihani	EIL	
15. S.K.Luthra	DGTD	
16. S.N.Mathur	Adv(R).M/o P&NG	
17. P.P.Nagarikar	BPCL,Bombay	
18. O.K.Juneja	-do-	
19. K.Krishan	HPCL	
20. S.K.Mukherjee	HPCL	
21. Anand Kumar	Centre for High Technology	
22. Dr.G.C.Joshi	I.I.P.Dehradun	
23. Dr.R.Krishnamurthy	EIL	

No.J-13013/1/85-Gen.X V
Government of India
Ministry of Petroleum & Natural Gas
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New Delhi, the 14th Septem-ber, 1987.

To

The Chief Executives of all Public Sector Undertakings
(by name)

The Head of all R&D Divisions of Public Sector Undertakings
(by name)

Subject: The Report of the High Powered Committee for Assessment of Research Potential in the field of Petroleum - Government decisions thereon.

Sir,

I am directed to say that Government had set up a High Powered Committee under the chairmanship of Dr.G.S. Si dhu, the then Director General, CSIR, for assessment of Research Potential in the field of Petroleum vide the then Department of Petroleum's O.M.No.J-25011/91/83-Gen. dated the 28th December, 1983. A copy of the said O.M. is enclosed.

2. The Report of the Committee was considered in the Ministry of Petroleum & Natural Gas by their Scientific Advisory Committee, relating to Processing of Hydrocarbons, and Scientific Advisory Committee for Geosciences, relating to oil exploration and production. Based on their careful consideration, having full regard to the suggestions made by the two Scientific Advisory Committees, the Government have decided that the following recommendations be accepted for implementation by various Public Undertakings in the oil sector, and the other concerned agencies:-

(i) Whenever the PSUs sponser projects with the Universities IIT's and other outside Laboratories they may consider giving grant for strengthening the analytical facilities also. Such sponsorship should also ensure that the agencies are bound by some sort of contractual obligations or memorandum of understanding to complete the projects within the estimated cost and time as might have been mutually agreed to;

(ii) Refinery Laboratories and Research & Development Centres should be equipped with adequate modern analytical facilities to meet the minimum requirements with reference to characterisation of various streams in a functional way.

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(iii) PSUs may take research scientists on deputation from the Universitiss and other Research Laboratories for a fixed period of time to work in the R&D laboratories or production units of the organisations Similary, they may consider deputing their people to work in the Universities and other Research Laboratories on short term assignments.

(iv) The task of developing programmes of work in the gaps identified in exploration and production would be entrusted to the Research Institutes through the Scientific Advisory Committee for Geosciences. Similar tasks for the Processing & Engineering would be taken care of by the recently established Centre for High Technology.

(v) The Centre for High Technology may for refinery process technology:

(a) develop detailed programmes of work in the gaps identified by the Committee and extend financial assistance to projects recommended by the Scientific Advisory Committee and monitor their progress.

(b) develop effective linkage between the laboratories, user organisations and the design organisations.

(vi) Where know-how or technologies are being imported, it should be ensured that the appropriate research institute is associated from the time of selection of know-how/ technology, so that absorption and upgrading of imported technologies becomes the responsibility of the concerned research institutions. In case of refinery process technologies, the Centre for High Technology shall be associated for such purpose.

(vii) IOC should pursue the purchase and installation of a pilot plant along with the procurement of technology for the first commercial Hydrocracker unit. CHT may coordiate in this matter.

(viii) The major organisations may consider the need for having a Director (R&D) on their Boards and make suitable recommendations to the Government.

3. The High Power Committee had recommended that the Scientific Advisory Committee could be replaced by Research & Development Boards funded by OIDB. This recommendation has not been accepted by Government.

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4. Necessary action may kindly be initiated to implement the above decisions that are related to your organisation and the Ministry may be kept informed of the progress from time to time.

Yours faithfully,

T.N. Parameswaran

(T.N.Parameswaran)
Under Secretary to the Government of India.
Tele.No.382583

Copy to:

1. All Officers and Sections in the Ministry of Petroleum & Natural Gas.
2. FA&CAO, OIDB, New Delhi.
3. Dr. G.Jayarama Rao, OSD, Centre for High Technology, New Delhi.
4. Guard File.

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