33RD MEETING

HELD AT

INDIAN INSTITUTE OF PETROLEUM, DEHRADUN

ON

APRIL 21 – 22, 1995

No. J-13012/1/92-Gen.
Government of India
Ministry of Petroleum & Natural Gas

CHT/1869

New Delhi, the 18th May, 1995

To

1. The members of the Scientific Advisory Committee on Hydrocarbons of the Ministry of Petroleum & Natural Gas (By name)

2. The Chief Executives of Oil Companies

Sub: **Meeting of the Scientific Advisory Committee on Hydrocarbons of the Ministry of Petroleum & Natural Gas - Circulation of the minutes**

Sirs,

I am directed to forward herewith a copy of the minutes of the meeting of the Scientific Advisory Committee on Hydrocarbons of this Ministry held at IIP, Dehradun on April 21-22, 1995, for information and necessary action.

Yours faithfully,

18/5/95

(Harpal Singh)
Under Secretary to
the Govt. of India,
Tel.No. 388764 (O)

Copy to.

Prof. M.M.Sharma, Professor of Chemical Engineering and Director of Chemical Technology, University of Bombay, Matunga, Bombay - 400 019

Copy also to:

1. JS(E)/JS(R)/JS(M)/Adv.(E)/OSD(R)-Sh.K.P.Shahi/DS(CC)
2. ED, CHT, New Delhi
3. FA&CAO, OIDB, New Delhi
4. PS to Secretary (P&NG)

18/5/95

(Harpal Singh)
Under Secretary to
the Govt. of India,

MINUTES OF THE 33RD MEETING OF THE SCIENTIFIC ADVISORY COMMITTEE (SAC) OF THE MINISTRY OF PETROLEUM AND NATURAL GAS HELD AT IIP, DEHRADUN ON 21- 22 APRIL , 1995

List of participants is attached.

Dr. T.S.R. Prasada Rao, Director, IIP, Dehradun extended a warm welcome to the Chairman and other distinguished members of the Committee and invitees and apprised them about some of the achievements made by IIP.

Prof. M.M. Sharma, Chairman, SAC thanked Dr. Prasada Rao and IIP for hosting the meeting and informed the participants that Dr. V. Kelkar, Secretary P&NG will join the meeting on 22nd April .

Shri A.P. Chaudhri, ED, CHT informed the participants that Governing Council of CHT held its meeting on 1st March 1995 where the following proposals have been approved:-

(i) IIP's proposal on diesel fuel quality:
Requirements for meeting future emission standards.

(ii) IOC (R&D) 's proposal on Hydrocracker Pilot Plant / Laboratory project.

(iii) EIL's proposal on Burners:
Performance testing & Development.

(iv) IIT Kanpur's proposal on Research & Development work on Advanced Control.

He also informed that Secretary, P&NG, had desired that approvals for the proposals recommended by SAC should be sought expeditiously and requested that the concerned institutions should furnish all required information on priority so that the approvals can be obtained faster.

As there were no comments from any members of the SAC, the Minutes of the 32nd meeting were taken as approved as such.

The Agenda items were taken up for discussions.

33.1 Proposal of EIL for ' Development of cooling tower technology'

EIL informed the Committee that they considered the possibility of using the cooling tower at EIL (R&D) or IOC (R&D) as suggested by them and found that it would be quite difficult to convert them into test models. However, they had revised the size of the cell and made it smaller. The revised cost of the proposal is Rs. 95.0 lakhs as against the earlier cost of Rs. 172.0 lakhs.

The Committee recommended the proposal for approval.

The Committee also recommended that EIL should extend revamp services to refineries after the completion of the study to derive benefits from the existing cooling towers.

33.2 Proposal of IIP for 'Modification of Jatropha Curcus Oil for Lubricating oil base stocks and additives'

The Committee recommended the proposal for approval with the following observations:-

- Modification to additives should be given low priority.
- The study need not be limited only to Jatropha Curcus Oil and similar oils can also be considered.
- The properties required in the oil can be indicated to Wasteland Development Board at an appropriate time so that they may try to develop hybrid varieties with such properties.

33.3 Proposal of IIP for ' Catalyst and Technology development for Hydrodesulphurisation of Gas oil / Diesel oil' and ' Catalyst and Technology development for hydrotreating of Vacuum Gas oil '

The Committee recommended that both these proposals should be combined and catalyst and technology development should be carried out for hydroprocessing of all gas oils. The first priority should be given to hydrodesulphurisation of gas oils keeping in mind that the specification of sulphur in HSD will be 0.25 % from April 99. The developmental work should aim at 0.05 % sulphur in the desulphurised product rather than going steps to 0.5 % to 0.25 % and finally to 0.05 %.

It was further emphasised that EIL should develop the process package simultaneously along with the catalyst development work. It was informed to the Committee that it should be possible to develop catalyst and technology for the desulphurisation of straight run gas oil in two years time.

The Committee agreed that the developmental work in hydroprocessing of all gas oils should be taken up and the revised proposal can be submitted directly to CHT for obtaining necessary approvals.

33.4 Proposal of IIP for ' Pilot plant studies for the production of LPG and High octane gasoline from Naphtha / NGL '

The Committee observed that this proposal is quite attractive and promising and recommended that it should be taken up as a collaborative project with one of the refineries. CRL and BPCL who had shown interest in this should study it in detail and firm up their views in about two months time.

33.5 Proposal of IIP for ' Development of drag reducers for petroleum crude / products transportation in Pipelines'

RRL, Jorhat also had a similar proposal.
The Committee observed that these institutes can go ahead with their work in this area but no funding is recommended at this stage. Funding will be considered only after promising progress has been made considering the previous work done at NCL, Pune in this area.

33.6 Proposal of IIP for 'Etherification of C5-olefins light FCC gasoline (IBP-110 °C)'.

The Committee recommended the proposal for approval with the following observations:-

(i) Only the Etherrification of FCC gasoline to be pursued.
(ii) The gasoline cut could be narrowed to cover only C5 & C6 if found to be attractive.

33.7 Note on 'Dearomatisation of diesel content and production of naphthalene' prepared by IIP.

As an option for reducing the aromatic content in HSD this route does not seem to be attractive as the naphthalene content is sizeable in LCO from FCC and in Heavy Aromatic Extract from kerosene treating unit. However, production of feed stock for Carbon residue by extraction could be an option in one or two refineries. IIP was requested to study the feasibility and submit a note / proposal on the same.

33.8 Alkylation of benzene in the reformate - Study carried out be NCL, Pune

From the reformate sample received from Haldia refinery 65 - 85 °C was separated to concentrate benzene and then alkylated with methanol. The alkylate was then blended with the remaining stream. The benzene content which was 3.6 % in the reformate had reduced to 1.1 % and can be further reduced to less than 1% on recycle. There was a loss of about 3% in MS and corresponding increase in LPG. The octane number of MS had increased by 2-3 units. Eventhough the benzene content has come down the aromatic content has gone up marginally. Considering the fact that a limit may be laid down for aromatics itself in future for MS it was decided not to pursue in this direction further. A preliminary cost analysis also did not favour this route.

The Committee requested EIL and CHT to study the various routes available for achieving the same and select the optimum one. The processes to be considered are reforming, hydrogenation & isomerisation of benzene rich stream from reformate or SR naphtha and isomerisation of C5 - C6 stream.

33.9 Fugitive emission of hydrocarbons from refineries based on the loss survey conducted by BP, UK at MRL

A presentation was made by the MRL representative on the survey conducted by BP, UK.

The Committee recommended that rigorous audits should be conducted in each refinery and these could be carried out by the refineries themselves with the right type of measuring instruments similar to the ones used by BP.

CHT was requested to prepare standard procedure for the measurement and quantification of fugitive emissions. After measurements have been made in all the refineries target could be fixed for fugitive emissions.

33.10 Other points

The Committee requested CHT to obtain a copy of the Environmental audit reports prepared and made available for public by companies like BP and circulate the same to the Members. After review a similar practice can be considered for our refineries also.

33.11 The Chairman of the Committee welcomed the Secretary, P&NG who joined the meeting on 22nd April and thanked him sincerely for his keen interest in SAC and then introduced the participants to him. The Chairman then invited members to share their views on various topics with the Secretary. The salient points of views expressed by members were as follows :-

- SAC of Ministry of Petroleum and Natural Gas was a pioneering step and a number of successful projects have fructified through the deliberations of SAC. The support given by the OIDB is laudable and research laboratories, refineries, EIL etc. have worked in unison. Meetings of the SAC are held in different locations in the country.

- Marketing operations and increasing consumer satisfaction can also be included in scope of SAC.
- The environmental guidelines which are being laid down for Mathura refinery may be extended to all the other refineries also in due course of time and therefore the other refineries should gear themselves up for the same.
- Mathura refinery should project their image in various consumer forums with respect to the measures taken by them in mitigating the environmental impact.
- A special assessment study should be carried out to identify possible impact of Numaligarh refinery on Kaziranga National Park and the steps to minimise the same.

Secretary, P&NG made the following observations :-

- ONGC and GAIL should be made permanent invitees for the meetings.
- Marketing and Distribution sector can give a presentation to SAC.
- With regard to environment the Committee could identify the reversible and non-reversible damages and select the right path for environmental protection.
- As regards study for Kaziranga National Park, it will be taken up with the appropriate agencies to initiate the studies at the earliest.
- Environmental audit should be carried out for exploration and refining sector. EIL, IIP and CHT should be involved in this and funds can be provided through OIDB.

- Eventhough Natural Gas may not be abundantly available in India the same can be made available from nearby countries for a long time.

33.12 This being the last meeting of the present Committee, Secretary, P&NG thanked the members of SAC for their valuable contribution and informed that the term of the Committee is being extended by 2 years. He requested Prof. M.M. Sharma to be the Chairman of the new Committee which will be reconstituted in June '95.

ANNEXURE

33rd Meeting of SAC held at IIP, Dehradun on 21 - 22nd April, 1995 - List of Participants

MOP&NG	Dr.V.L.Kelkar, Secretary (Partly)
Chairman:	Prof. M.M. Sharma
Members:	Dr.S.Varadarajan, Ex - Consultant, Planning Commission Dr.R.S.Venkatraman, EIL Prof. K. Vasudeva, IIT (Delhi) Smt.Lalitha B Singh, Deptt.P&C Dr.T.S.R.Prasada Rao, IIP, Dehradun Dr. Anil C Ghosh, RRL, Jorhat Dr.Paul Ratnasamy, NCL Shri. A.P. Chaudhri, CHT, New Delhi Shri J.K.Das, PCRA Shri S.N.Sharma, CSIR
Invitees	
IOC	Shri R.K.Narang Shri A.K.Arora
IOCL(R&D)	Dr.A.K.Bhatnagar Dr. Sobhan Ghosh
IOCL (AOD)	Shri A.N.Das Shri S.Kundu
BRPL:	Shri B.K.Gogoi Shri Bezbarua Shri Nepak
RRL, Jorhat	Dr. K.V.Rao Dr. S.A.A Rizvi
EIL (R&D)	Dr. S.J. Chopra Shri S.C.Gupta
MRL	Shri A.Varadarajan Shri N.Nachiappan
CRL	Shri Muthukutty Cyriac
BPCL	Shri V.K.Agarwal
HPCL	Shri K.Murali Shri A.S.Rao
PCRA	Shri Sanjay Gupta
CHT	Shri M.Kannan