F. No. J-11011/15/2015 – IA II (I)
Government of India
Ministry of Environment, Forest and Climate Change
(I.A. Division)

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Dated: 06th March, 2017

To,

The DGM (TS & HSE)
M/s Indian Oil Corporation Ltd.,
Barauni Refinery,
P O Barauni Oil Refinery,
Begusarai – 851114, Bihar

Sub: MS quality up-gradation & HSD quality up-gradation in Baruni Refinery at District - Begusarai, Bihar by M/s IOCL - Environmental Clearance - Reg.

Ref.: Your Online Proposal no. IA/BR/IND2/28027/2015; dated 27th November, 2015.

Sir,

This has reference to your online proposal no. IA/BR/IND2/28027/2015; dated 27th November, 2015 along with project documents including Form I, Terms of References, Pre-feasibility Report, EIA/EMP Report along with Public Hearing Report regarding above mentioned project.

2.0 The Ministry of Environment, Forests and Climate Change has examined the application. It is noted that proposal is for MS quality up-gradation & HSD quality up-gradation at Baruni Refinery in District - Begusarai, Bihar by M/s IOCL. Total plot area is noted to be 887.83 acres, out of which area earmarked for green belt is 148.39 acres. Cost of the project is ₹ 1879 Crore. Refinery is located at a distance of 8 km from the bank of River Ganga. Proposed upgradation unit will be installed in the existing premises.

M/s IOCL Barauni refinery has proposed following projects:

i) Replacement of reactors & allied modernization jobs of Coker A and Installation of Biturox Unit at IOCL Barauni Refinery

(a) Coker A revamp project:

ii) BS-IV Project: MS Quality Up-gradation & HSD Quality Up-gradation at IOCL Barauni Refinery in line with Auto Fuel policy.

With the above facilities, at current crude processing capacity of 6.3 MMTPA the refinery can produce about 1.3 MMTPA and 3.2 MMTPA of BS-IV MS & HSD respectively along with flexibility to produce 25 % of fuel with Euro V specifications. Comparison of units T'put in BS-IV scenario vis-a-vis current actual operating/design capacity is as follows:

Attribute Unit Capacity (Figures in MMTPA)	Design	BS-III Scenario (Actual 2013-14)	BS-IV Scenario (Post Project)
Crude T'put	6.00	6.47	6.30
High Sulphur Crude %	13-15	8.98	**19.70**
Coker A : T' put	0.60	0.38	0.26
Coker B : T' put	0.50	0.12	**0.00**
RFCCU : T' put	1.43	1.69	1.70
Biturox : T' put	0.15	-	**0.15**
DHDT : T' put	2.20	2.49	**3.30**
CRU : T' put	0.30	0.36	**0.47**
NHDT : T' put	0.18	0.25	**0.24**
ISOM : T' put	0.13	0.23	**0.25**
Prime G+	0.4 (0.32+0.08)	0.27	**0.76**
SRU	80 MTPD	28.4 MTPD	**59.54 MTPD**

iii)

Products	2013-14 (Pre-Scenario)		BS-IV (Post Scenario)	
	MT	%	MT	%
L.P.G.	316882	4.88%	301800	4.79%
S R N	124689	1.92%	92000	1.46%
MS (BS-III)	1190518	18.35%	0	0.00%
MS (BS-IV)	0	0.00%	1302300	**20.67%**
S K	820005	12.64%	118200	**1.87%**
H S D (B S - III)	3249279	50.08%	0	0.00%
H S D (BS - IV)	0	0.00%	3501300	**55.57%**
L S H S/I F O	-116	0.00%	0	0.00%
R P C	124199	1.91%	107300	1.72%
FO	67204	1.04%	114400	1.81%
B i t u m e n	-1465	-0.02%	149800	**2.37%**
C B F S	47043	0.73%	33300	0.52%
SULFUR	10253	0.16%	21400	**0.34%**
Intermediate Stock Difference	-42125	-0.65%	0	0.00%
Fuel & Loss	582170	8.97%	558200	8.88%
Total Output	6488537	100%	6300000	100.00%
	6.48 MMTPA		**6.3 MMTPA**	

3.0 IOCL Barauni refinery have limit of 1035 kg/hr SO2 emission as per EC letter dated 18.03.2008 granted by MoEF&CC. Presently Barauni Refinery SO2 emission is between 690-720 Kg/hr. After installation of proposed project, the overall SO2 emission of refinery will be 815 Kg/hr. The total fresh water requirement for post BS-IV project will be 538 m3/hr. For achieving ZLD, PP has proposed for implementing RO Plant in Barauni refinery for effluent treatment as tertiary facility whereupon the refinery shall utilize the water as alternative to fresh water intake in DM plant and/or cooling towers. Further, RO reject which will be generated during RO plant operation will be utilized for Coke cutting water & spraying in Coke yard (to be dispensed with the product) as well as make up for eco-pond, horticulture & greenbelt while maintaining TDS within permissible limit. Oily sludge is generated mainly during cleaning of storage tanks and from ETP. It is processed by "Mechanized Skid Process" for recovery of 90-95% oil from oily sludge and generation of minimum quantity of residual oily sludge. Mechanical extraction method uses solvent & steam heating and then oily sludge is processed in a plant equipped with centrifuge in order to recover maximum possible oil and water. The sludge is broken down into water, oil and base sediments.

4.0 Public hearing is exempted under section 7 (ii) of EIA Notification, 2006.

5.0 All the Petroleum Refinery Plants are listed at S.N. 4(a) under Category 'A' and appraised at the Central level.

6.0 The proposal was considered by the Expert Appraisal Committee (Industry) in its 5th, 12th, 15th and 16th meeting held during 25th -26th February, 2016, 23rd - 24th August, 2016, 10th November, 2016 and 8th – 9th December, 2016 respectively. Project Proponent and the EIA Consultant namely M/s Hubert Enviro Care Systems Pvt. Ltd., have presented EIA/EMP report as per the TOR. EAC has found the EIA/EMP Report and additional information to be satisfactory and in full consonance with the presented TORs. The Committee recommended the proposal for environmental clearance.

7.0 Based on the information submitted by the project proponent, the Ministry of Environment, Forest and Climate Change hereby accords environmental clearance to above project under the provisions of EIA Notification dated 14th September 2006, subject to the compliance of the following Specific and General Conditions:

A. SPECIFIC CONDITIONS:

i. M/s IOCL shall comply with standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R. 186(E) dated 18th March, 2008.

ii. Continuous on-line stack monitoring for SO_2, NOx and CO of all the stacks shall be carried out.

iii. The process emissions [SO_2, NOx, HC (Methane & Non-methane)], VOCs and Benzene from various units shall conform to the standards prescribed under the Environment (Protection) Act, 1986. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency of the pollution control device has been achieved.

iv. Leak Detection and Repair programme shall be prepared and implemented to control HC/VOC emissions. Focus shall be given to prevent fugitive emissions for

which preventive maintenance of pumps, valves, pipelines are required. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to. Fugitive emissions of HC from product storage tank yards etc. must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations.

v. SO2 emissions after expansion from the plant shall not exceed 815 kg/hr and further efforts shall be made for reduction of SO2 load through use of low sulphur fuel. Sulphur recovery units shall be installed for control of H2S emissions. The overall sulphur recovery efficiency of Sulphur recovery unit with tail gas treating shall not be less than 99.9%.

vi. As proposed, record of sulphur balance shall be maintained at the Refinery as part of the environmental data on regular basis. The basic component of sulphur balance include sulphur input through feed (sulphur content in crude oil), sulphur output from Refinery through products, byproduct (elemental sulphur), atmospheric emissions etc.

vii. Flare gas recovery system shall be installed.

viii. Ambient air quality monitoring stations, [PM_{10}, $PM_{2.5}$, SO_2, NOx, H_2S, mercaptan, non-methane-HC and Benzene] shall be set up in the complex in consultation with State Pollution Control Board, based on occurrence of maximum ground level concentration and down-wind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCs.

ix. The total water requirement from artesian wells after expansion of proposed project shall not exceed 651 m3/hr and prior permission shall be obtained from the competent authority.

x. As proposed, Industrial effluent generation shall not exceed 497 m^3/hr after proposed expansion and treated in the integrated effluent treatment plant. The plant shall be based on Zero Liquid Discharge and as proposed RO to be installed within the plant. Treated effluent shall be recycled/reused within the factory premises. Domestic sewage shall be treated in sewage treatment plant (STP).

xi. Automatic mechanical Oil catchers/oil traps shall be provided at all possible locations in rain/storm water drainage system inside the factory premises.

xii. The oily sludge shall be subjected to melting pit for oil recovery and the residue shall be bio-remediated. The sludge shall be stored in HDPE lined pit with proper leachate collection system.

xiii. At least 2.5 % of the total cost of the project shall be earmarked towards the Enterprise Social Commitment (ESR) based on Public Hearing issues and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office at Ranchi.

xiv. Green belt should be developed in 33% of the plot area to mitigate the effect of fugitive emission all around the plant in consultation with DFO as per CPCB guidelines. Thick green belt around factory premises should be ensured.

B. GENERAL CONDITIONS:

i. The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board (SPCB), State Government and any other statutory authority.

ii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In *case* of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.

iii. The locations of ambient air quality monitoring stations shall be decided in consultation with the State Pollution Control Board (SPCB) and it shall be ensured that at least one stations is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.

iv. The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be followed.

v. The overall noise levels in and around the plant area shall be kept well within the standards by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels shall conform to the standards prescribed under Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).

vi. The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and use the same water for the process activities of the project to conserve fresh water.

vii. Training shall be imparted to all employees on safety and health aspects of chemicals handling. Pre-employment and routine periodical medical examinations for all employees shall be undertaken on regular basis. Training to all employees on handling of chemicals shall be imparted.

viii. The company shall also comply with all the environmental protection measures and safeguards proposed in the documents submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing relating to the project shall be implemented.

ix. The company shall undertake all relevant measures for improving the socio--economic conditions of the surrounding area. CSR activities shall be undertaken by involving local villages and administration.

x. The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.

xi. A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.

xii. The company shall earmark sufficient funds towards capital cost and recurring cost per annum to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so earmarked for environment management/pollution control measures shall not be diverted for any other purpose.

xiii. A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, ZilaParisad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.

xiv. The project proponent shall also submit six monthly reports on the status of compliance of the stipulated Environmental Clearance conditions including results of monitored data (both in hard copies as well as by e-mail) to the respective Regional Office of MoEF&CC, the respective Zonal Office of CPCB and SPCB. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.

xv. The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently, shall also be put on the website of the company along with the status of compliance of environmental clearance conditions and shall also be sent to the respective Regional Offices of MoEF&CC by e-mail.

xvi. The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at http://moef.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.

xvii. The project authorities shall inform the Regional Office as well as the Ministry, the date of financial closure and final approval of the project by the concerned authorities and the date of start of the project.

8.0 The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

9.0 The Ministry reserves the right to stipulate additional conditions, if found necessary. The company in a time bound manner will implement these conditions.

10.0 The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, Air (Prevention &. Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous Waste (Management, Handling and Trans-boundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and rules.

6/3/2017

(Yogendra Pal Singh)
Scientist 'D'

Copy to:-

1. The Principal Secretary, Forests & Environment Department, Government of Bihar, 1st Floor, N. H. Bhawan, Vishweshwaraiya Complex, Bailey Road, Patna, Bihar - 800001
2. The Additional Principal Chief Conservator of Forests, Ministry of Environment & Forests, Regional Office (ECZ), Bungalow No. A-2, Shyamali Colony, Ranchi – 834002.
3. The Chairman, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi - 110 032.
4. The Chairman, Bihar State Pollution Control Board, Beltron Bhawan, 2nd Floor, Lal Bahadur Shastri Nagar, Patna – 800 023, Bihar.
5. Monitoring Cell, Ministry of Ministry of Environment, Forest and Climate Change, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi.
6. Guard File/Monitoring File/Record File.

6/3/2017

(Yogendra Pal Singh)
Scientist 'D'