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No.21-383/2007-IA-III
Government of India
Ministry of Environment and Forests
(IA-III Division)

BR
SLU

Paryavaran Bhawan,
CGO Complex, Lodhi Road,
New Delhi - 110003.

Dated the 3rd April, 2008

Sub: Environment clearance for setting up of Phase-I of Special Economic Zone at Mangalore - regarding.

Reference is invited to letter No.FEB01CRZ2008, dated 22.1.2008 from Forest, Ecology and Environment Department, Government of Karnataka, letter No.MSEZL/BG/ENV/2007, dated 23.2.2007, dated 9.4.2007, No.MSEZL/COO/MLR/2007-08, dated 2.6.2007, No.MSEZL/COO/187/2007-08, dated 24.12.2007, No.MSEZL/BG/ENV/2008, dated 3.1.2008, No.MSEZL/COO/02/2008, dated 4.1.2008, No.MSEZL/COO/13/08, dated 13.1.2008, No.MSEZL/COO/2007-08, dated 23.2.2008 and No.MSEZL/BG/06/ENV/2008, dated 7.3.2008 from Mangalore SEZ Limited regarding the subject mentioned above. Subsequently, letters No.Nil, dated 5.3.2007 from Infrastructure Development Corporation Limited, D.O.No.O-27013/1/2005-ONGC.II (Pt.II), dated 14.3.2007, No.O-27013/1/2005-ONGC-II(Pt.2), dated 6.6.2007 from Ministry of Petroleum & Natural Gas, No.17CAT/MRPL/2007-08/1185, dated 14.3.2008 and No.17CAT/MRPL-SEZ/2007-08/1230, dated 25.3.2008 from Karnataka State Pollution Control Board (KSPCB) and No.Nil, dated 19.3.2008 from Mangalore Refinery and Petrochemicals Limited (MRPL) has been taken into consideration. High Tide Line has been demarcated by NIO, Goa and has super imposed the project layout on the Coastal Regulation Zone map. Public Hearing for the project was held as per EIA Notification, 2006 on 28.11.2007.

2. The Mangalore Special Economic Zone (MSEZ) Phase-I involves a) MRPL Phase-III Refinery, b) Aromatic Complex and c) Olefin Complex are proposed to be developed by the anchor promoter of MSEZ project i.e. M/s ONGC-MRPL in the already acquired land of about 1800 Acres. The proposed MSEZ is planned adjacent to the existing MRPL refinery complex on north & eastern sides and proposed to connect NMPT with a dedicated 70/100 meter wide road-cum-pipeline (Total approx. 15 km long) Corridor for movement of Cargo, Crude and products between New Mangalore Port and MSEZ. The proposed layout has one main entry from the proposed Mangalore MSEZ Corridor connected to the existing New Mangalore Port and National Highway (NH-17). The primary, Secondary and Tertiary roads are planned to give access to the industries falling in the MSEZ Phase-I. Industrial zones for locating the Olefin Complex, Aromatic Complex, D/S Petrochemicals, Indian Strategic Petroleum Reserve Company Limited underground crude oil storage and land for MRPL Phase-III Refinery are effectively placed in the central and southwest part of the proposed MSEZ premises. Further, the SEZ will have necessary road alignment between NMPT, SEZ and network of roads within including service roads for inspection of pipelines on elevated corridors. The pipelines shall be built at elevated corridor locations. Pipelines will be laid on sleepers and pipe racks with sufficient ground clearance. The preferred corridor alignment avoids Coastal Regulation Zone-I & II portion along the Gurupur River and it will have elevated roadway over structures (railways/minor bridges) and reinforced earth walls. However the corridor passes over CRZ III zone along the banks of the Kudumbur rivulet (south of ELF Gas) in the form of a bridge. The proposed Industrial Units in MSEZ Phase-I includes,-

I. MRPL Phase-III Refinery (The list of process units proposed in Phase-III refinery project):-

Sr. No.	Unit Name	Design Capacity
1.	CDU/VDU-III	3.00 MMTPA
2.	DCU	3.00 MMTPA
3.	Petro FCC/PRU/FCCU	0.72 / 0.8 MMTPA
4.	DHDT	3.1 MMTPA

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Phase III Projects Department

5.	CHT (Coker Heavy Gas oil Hydrotreater)	0.65 MMTPA
6.	H ₂ Generation Unit	70 kTPA
7.	SULPHUR Block	3x185 TPD
8.	LOBS FPU/LOBS	0.60 /0.15 MMTPA
9.	CPP (Power/Steam)	84.0 MW / 606 TPH
10.	LPG,ATF/Kero Mercapton Treatment Unit	0.5 MMTPA
11.	Revamp of Existing HCU s to operate in once through mode.	To produce hydrotreated feed to PFCCU.
12.	Utilities	Appropriate facilities, meeting the requirement of above mentioned units.
13.	Offsites	Appropriate facilities to cater to above units.

II. Aromatic Complex

To meet the objective of producing paraxylene, aromatics complex has been considered. To maximize paraxylene, broad cut heavy naphtha streams are selected as feedstock to a new NHT/CCR. Aromatics precursors to the new reformer include constituents that produce toluene, C8-aromatics mix & C9+ aromatics. Whereas a xylene isomerization (ISOMER) unit has been considered to convert other C8-aromatics into paraxylene, a transalkylation & disproportionation (TADP) unit has also been included to convert toluene & C9+ aromatics into C8-aromatics mix. Simulated moving bed adsorption for paraxylene recovery (PXREC) has been incorporated.

Sr. No.	Unit Name	Design Capacity
1.	NHT/CCR	0.95 MMTPA
2.	Isomerization Unit (ISOMER)	3.16 MMTPA
3.	Transalkylation & Disproportionation Unit (TADP)	1.72 MMTPA
4.	Paraxylene Recovery (PXREC)	4.07 MMTPA
5.	Xylene Fractionation Unit	4.64 MMTPA
6.	Aromatics Extraction Unit	0.79 MMTPA
7.	Benzene Toluene Fractionation Unit	2.2 MMTPA
8.	Captive power plant (CPP)	60 MW

III. Olefin Complex

The primary and major process unit at proposed Olefin Complex will be Naphtha Cracker Unit of 2.168 MMTPA naphtha cracking capacity. It produces ethylene, propylene, mixed C4s and raw pyrolysis gasoline apart from fuel gas and hydrogen which will be used internally. There would be import of polymer grade propylene as feed in addition to Naphtha into Olefin Complex as the proposed Naphtha Cracker capacity fall short to ascertain the envisage design capacity of overall Olefin Complex. The import is planned from adjacent MRPL refinery. There are about seven secondary processing units proposed in the Olefin Complex to manufacture the planned products like HDPE, LLDPE/HDPE, Butene, Polypropylene, C4 mix, Benzene, Pyrolysis gasoline, carbon black feed stock (CBFS) etc.. Proposed major process units in this complex are as follows :

Sr. No.	Unit Name	Design Capacity
1.	Naphtha Cracker	2.168 MMTPA (feed)
2.	HDPE Unit	350,000 TPA (product)
3.	C4 Hydrogenation Unit	240,000 TPA (Feed)
4.	LLDPE/LDPE Unit	400,000 TPA (product)
5.	Polypropylene unit	750,000 TPA (product)
6.	Butadiene Extraction Unit	12,250 TPA (product)
7.	Pyrolysis Gasoline Hydrogenation Unit (PGHU)	466,000 TPA (Feed)

8.	Benzene Extraction Unit	144,000 TPA (product)
9.	Captive Power Plant (CPP)	168 MW

3. The proposal was considered by Expert Committee for Infrastructure Development and Miscellaneous Projects at its meetings held on 19th to 21st April, 2007, 21st & 22nd June, 2007 and 27th & 28th February, 2008. Further site visit was undertaken by the above Committee 20th June, 2007 and public hearing, as per the Environmental Impact Assessment Notification, 2006 was conducted by the Karnataka State Pollution Control Board on 28.11.2007. To address any other issues which were not considered during the above public hearing the Ministry had constituted a technical Committee, which had public discussions and site visits on 2nd and 3rd February, 2008. Based on the recommendations of the above Expert Committee the Ministry hereby accords environmental clearance to the Phase-I of said project under the provisions of Environmental Impact Assessment Notification, 2006 and Coastal Regulation Zone Notification 1991, subject to the following conditions:-

A. SPECIFIC CONDITIONS:-

- (i) No Objection Certificate from the Karnataka State Pollution Control Board shall be obtained before initiating the project.
- (ii) The MSEZ project shall be restricted to the Phase-I of the project, proposed over 1,800 acres. The phase II of the project shall be considered by Ministry of Environment and Forests only after receipt of all requisite documents/information as laid down in the Environmental Impact Assessment Notification, 2006 and Coastal Regulation Zone Notification, 1991 as applicable.
- (iii) All development in the Coastal Regulation Zone area shall be in accordance with the Coastal Regulation Zone Notification, 1991. No destruction of mangroves shall be undertaken except while undertaking the permissible activities in the Coastal Regulation Zone-I areas.
- (iv) The project proponent shall not take up any activity in 875 acres of Coastal Regulation Zone land, other than those permissible under the Coastal Regulation Zone Notification 1991 such as pipeline corridors, pipelines roads on stilts.
- (v) With regard to the containing the suspected contamination of the groundwater near Athurkodi area of Kuthethoor village, MRPL have given an undertaking vide their letter dated 19.3.2008 which is as follows:-
 - (a) "Implementation of recommendation of NGPRI will be started immediately after submission of their report.
 - (b) Depending upon the nature of their recommendations, we will make efforts to complete necessary actions within 6 months from the date of receipt of their report.
 - (c) In addition to above, a daily vigil is already in place to take samples from different places and to monitor any suspected oil leakage. This will continue till the problem is resolved.
 - (d) We are also in continuous contact with the residents in the surround areas with regard to any contamination."

KSPCB and MRPL shall ensure that (a) to (d) above is implemented in a time bound manner and a monthly report on the progress of the activities provided to the Regional Office of this Ministry at Bangalore. For this purpose a separate budget would be allocated by MRPL.
- (vi) The project proponent shall obtain a report from the Wildlife Department with regard to existence of wildlife in the proposed site as claimed by the public before implementing the project.
- (vii) The R&R package shall be strictly in accordance with the laid down norms of the State Government.
- (viii) A marine Environment Impact Assessment and Risk Assessment alongwith the Disaster Management Plan shall be prepared for the outfall facilities proposed in the Coastal Regulation Zone and the marine areas.

- (ix) Project proponent shall put up a dedicated website and a display panel to inform the public regarding the Ambient Air Quality alongwith SO₂ NO_x and other parameters as prescribed as Central Pollution Control Board (CPCB).
- (x) The gaseous emissions (SO₂, NO_x, HC, VOC and Benzene) from various process units shall conform to the standards prescribed by the concerned State Pollution Control Board. All the measures detailed in the EMP and response to the Public Hearing shall be taken to control the point/stack and fugitive gaseous emissions from the proposed facilities, processes and storage units etc., for ensuring that the ambient air quality around the Refinery due to the expansion is maintained at the predicted 24 hourly average maximum concentration.
- (xi) The emission levels of the other pollutants shall also remain within the permissible levels.
- (xii) The industrial units in the SEZ and the associated facilities shall be strictly in accordance with the norms laid down by the Karnataka State Government and CPCB.
- (xiii) The project proponent shall ensure that the greenery of the area is maintained. Further, 33% of the project area shall be dedicated for green belt development of which atleast 5% shall be for mangrove afforestation. The local Forest Department shall be associated for this purpose and requisite budget earmarked.
- (xiv) The project proponent shall ensure that the water requirement of the Mangalore city does not get affected due to the SEZ operation. Adequate provision shall be made in the reservoirs to provide for the water requirement of the cities.
- (xv) The project proponent shall ensure that during construction and operation of the project the traffic in the city is not affected.
- (xvi) All precautions of the highest standards shall be incorporated in the design of the project to ensure that there is no chance of emission/leakage of hazardous chemicals including Benzene. Detailed monitoring programme shall be designed and the information provided to the public through display and dedicated website by means of online monitoring.
- (xvii) Low Sulphur internal fuel oil and fuel gas shall be fired in process heaters and boilers.
- (xviii) Quarterly monitoring of fugitive emissions shall be carried out by Fugitive Emission Detectors (GMI Leak Surveyor). Guidelines of CPCB will be followed for monitoring fugitive emissions. For control of fugitive emissions, all unsaturated hydrocarbons shall be routed to the flare system. The flare system shall be designed for smokeless burning. Flare Gas Recovery System shall be installed for reduction of Hydrocarbon loss and emission of VOCs, NO_x, N₂O, SO_x & CO₂ to the environment.
- (xix) Regular Ambient Air Quality Monitoring shall be carried out. The location and results of existing monitoring stations shall be reviewed in consultation with the concerned State Pollution Control Board based on the occurrence of maximum ground level concentration and downwind direction of wind. Additional Stations shall be set up, if required. It shall be ensured that at least one monitoring station is set up in up-wind & in down-wind direction along with those in other directions.
- (xx) On-line data for air emissions shall be transferred to the CPCB and SPCB regularly. The instruments used for ambient air quality monitoring shall be calibrated regularly. The monitoring protocol shall ensure continuous monitoring of all the parameters.
- (xxi) The practice of acoustic plant design shall be adopted to limit noise exposure for personnel to an 8 hr time weighted average of 90 db(A).

- (xxii) All the pumps and other equipment's, where there is a likelihood of HC leakages, shall be provided with appropriate indicators and detectors. Provision for immediate isolation of such equipment, in case of a leakage shall also be made. The company shall adopt Leak Detection and Repair (LDAR) programme for quantification and control of fugitive emissions.
- (xxiii) The product loading gantry shall be connected to the product sphere in closed circuit through the vapour arm connected to the tanker. Data on fugitive emissions shall be regularly monitored and records shall be maintained.
- (xxiv) The company shall ensure that no halogenated organic is sent to the flares. If any of the halogenated organic are present, then the respective streams may be incinerated, if there are no technically feasible or economically viable reduction/recovery options. Any stream containing organic carbon, other than halogenated shall be connected to proper flaring system, if not to a recovery device or an incinerator.
- (xxv) The new standards/norms that are being proposed by the CPCB for Petrochemical Plants and Refineries shall be applicable for the proposed expansion unit. The company shall conform to the process vent standards for organic chemicals including non-VOCs and all possible VOCs i.e., TOCs standards and process vent standards for top priority chemicals. Regular monitoring will be carried out for VOC and HC and On-line monitors for VOC measurements may be installed.
- (xxvi) Regular monitoring of relevant parameters for the under ground water in the surrounding areas shall be undertaken and the results shall be submitted to the relevant States Pollution Control Board.
- (xxvii) Solid waste generated as Pretreater and Reformer Catalysts, Sulphur guard absorbent and Alumina Balls shall be disposed off as per the authorization from the State Pollution Control Board.
- (xxviii) Oily sludge shall be sent to melting pit treatment for recovery of oil. The recovered oil shall be recycled into the refinery system. The residual sludge will be stored in HDPE lined pit for disposal after treatment. The sludge shall be incinerated in the premises only.
- (xxix) The company shall strictly follow all the recommendations mentioned in the Charter on Corporate Responsibility for Environmental Protection (CREP).
- (xxx) The Company shall harvest surface as well as rainwater from the rooftops of the buildings proposed in the expansion project and storm water drains to recharge the ground water and use the same water for the various activities of the project to conserve fresh water.
- (xxxii) Occupational Health Surveillance of the workers should be done on a regular basis and records maintained as per the Factories Act.
- (xxxiii) The Company shall implement all the recommendations made in the Environmental Impact Assessment /EMP report and risk assessment report.
- (xxxiiii) The company will undertake all relevant measures, as indicated during the Public Hearing for improving the Socio-economic conditions of the surrounding area.
- (xxxv) With regard to R&R colony the project proponent shall obtain all requisite clearances as prescribed by the concerned agencies.

B. GENERAL CONDITIONS:-

- (i) The project authorities shall strictly adhere to the stipulations made by the concerned State Pollution Control Board (SPCB) and the State Government.
- (ii) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.

- (iii) At no time, the emissions shall be allowed to go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the units, the respective unit should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved.
- (iv) Adequate number of influent and effluent quality monitoring stations shall be set up in consultation with the SPCB. Regular monitoring shall be carried out for relevant parameters for both surface and ground water.
- (v) Industrial wastewater shall be properly collected and treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May 1993 and 31st December, 1993 or as amended from time to time. The treated wastewater shall be utilized for plantation purpose.
- (vi) The overall noise levels in and around the plant area shall be limited within the prescribed standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).
- (vii) The project authorities shall strictly comply with the provisions made in Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended in 2000 for handling of hazardous chemicals etc. Necessary approvals from Chief Controller of Explosives must be obtained before commission of the expansion project. Requisite On-site and Off-site Disaster Management Plans will be prepared and implemented.
- (viii) Authorization from the State Pollution Control Board must be obtained for collections/treatment/storage/disposal of hazardous wastes.
- (ix) The project authorities shall provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided shall not be diverted for any other purposes.
- (x) The stipulated conditions shall be monitored by the concerned Regional Office of this Ministry /Central Pollution Control Board/State Pollution Control Board. A six monthly compliance report and the monitored data shall be submitted to them regularly. It shall also be displayed on the Website of the Company.
- (xi) 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 State Pollution Control Board/Committee and may also be seen at Website of the Ministry of Environment and Forests at <http://www.envfor.nic.in>. This should 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 should be forwarded to the concerned Regional office of this Ministry.
- (xii) The date of Financial Closure and final approval of the project by the concerned authorities and the date of commencing the land development work as well as the commissioning of the project shall be informed to the Ministry and its Regional Office.
- (xiii) Proper House keeping and adequate occupational health programmes shall be taken up. Regular Occupational Health Surveillance Programme for the relevant diseases shall be carried out and the records shall be maintained properly for at least 30-40 years. Sufficient preventive measures shall be adopted to avoid direct exposure to emission and other Hydrocarbons etc.
- (xiv) A separate environment management cell with full fledge laboratory facilities to carry out various management and monitoring functions shall be set up under the control of a Senior Executive.

4. The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.
5. The Ministry reserves the right to stipulate additional conditions if found necessary. The company shall implement these conditions in a time bound manner.
6. The above conditions will be enforced, inter-alia under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, the Public Liability Insurance Act, 1991, Hazardous Waste (Management & Handling) Rules, 1989 and Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 along with their amendments and rules.


(Dr. A. Senthil Vel)
Additional Director

To,

Secretary,
Ecology and Environment,
Forest, Ecology and Environment Department,
Government of Karnataka,
Karnataka Government Secretariat,
7th Floor, 4th Stage, Multistoreyed Building,
Dr. B. R. Ambedkar Veedhi, Bangalore – 560001.

Copy to:-

- (i) The Member Secretary, Karnataka State Pollution Control Board, 6,7,8, & 9 Floor (Public Utility Building), Netaji Subhash Chand Building, M. G. Road, Bangalore-560 001, Karnataka.
- (ii) Shri I. S. N. Prasad, Managing Director and CEO, Mangalore SEZ, No.72/4, Ist Floor, Cunningham Road, Bangalore-560052.
- (iii) M/s Mangalore SEZ Limited, 3rd Floor, Mangalore Urban Development Authority Building, Ashok Nagar, Urwa Stores, Mangalore-575006.
- (iv) Managing Director, Infrastructure Development Corporation Limited, Core 4B, 4th Floor, India Habitat Centre, Lodhi Road, New Delhi-110003.
- (v) The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum- Office Complex, East Arjun Nagar, Delhi –110032.
- (vi) The Chief Conservator of Forests (Central), Ministry of Environment & Forests, Regional Office (SZ), Kendriya Sadan, 4th Floor, E&F Wings, 17th Main Road, 1 Block, Koranmangla, Bangalore – 560034.
- (vii) Director (EI), Ministry of Environment and Forests.
- (viii) The Regional Office Cell, MoEF.
- (vii) Guard File.
- (viii) Monitoring File


(Dr. A. Senthil Vel)
Additional Director