



रिफाइनरीज प्रभाग  
Refineries Division

इंडियन ऑयल कॉर्पोरेशन लिमिटेड

पारादीप रिफाइनरी

डाकघर: झिमानी, भाया: कुजंग, जिला: जगतसिंहपुर, ओडिशा - 754 141

**Indian Oil Corporation Limited**

**Paradip Refinery**

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Ref: PDR/HSE/HC/MOEFCC/2022-23/001

Date: 21-05-2022

To,

**The Director, Env. cum-Spl. Secy., FE&CC and Member Secretary,**

Odisha Coastal Zone Management Authority (OCZMA),

Bhubaneswar – 751023

Email: [oczma1@gmail.com](mailto:oczma1@gmail.com)

**Subject:** Half Yearly Compliance Report of EC & CRZ clearances issued to IOCL, Paradip Refinery

Dear Sir,

Please find enclosed the Half Yearly Compliance Report of the following EC & CRZ clearances for period **Oct'21 to Mar'22**.

1. Compliance Status for Environment Clearance for Grass Root Refinery-cum Petrochemical Complex of 15 MMTPA at Paradip (Letter F.No.J-11011/70/2007-1A II (I) dated 06<sup>th</sup> Jul, 2007) is enclosed as Annexure-A.
2. Compliance Status for CRZ Clearance for laying of Storm Water Outfall Pipelines to sea for Paradip Refinery Project. (Letter F. No.11-86/2011-IA III dated 21<sup>st</sup> Feb'2012) is enclosed as Annexure-B.
3. Compliance Status for CRZ Clearance for laying of pipeline from Paradip Refinery to South Oil Jetty at Paradip Port, Odisha (Letter F. No. 11-33/2013-IA III, Government of India, Ministry of Environment & Forests (IA Division), Dated 19<sup>th</sup> Sep'2013) is enclosed as Annexure-C.
4. Compliance Status for CRZ Clearance for 'Pet Coke Evacuation Project' for Paradip Refinery in District Jagatsinghpur (Odisha) by Indian Oil Corporation Ltd – CRZ Clearance - reg. issued by Ministry of Environment and Forest (MoEF) (Letter no. F. No. 11-30/2015-IA.III dated 11<sup>th</sup> Feb'2016) enclosed as Annexure-D.
5. Compliance Status for EC and CRZ Clearance for "Installation Ethylene Recovery Unit, Mono Ethylene Glycol Unit and BS-VI facility by M/s Indian Oil Corporation Ltd (IOCL) at Paradip Refinery cum Petrochemical Complex, village Abhayachandrapur, Tehsil Kujang, District Jagatsinghpur (Odisha) – Environmental and CRZ Clearance - reg. issued by Ministry of Environment and Forest (MoEF) (Letter no. F. No. J-11011-344/2016-IA-II (I) dated 11<sup>th</sup> Oct' 2018) enclosed as Annexure-E.
6. Compliance Status for EC and CRZ Clearance for "Integrated Para-Xylene & Purified Terephthalic Acid (PTA) Project within existing Refinery complex by M/s. Indian Oil Corporation Limited, Paradip Refinery located at S.F. No-218, Abhayachandrapur Village, Jagatsinghpur District, Odisha State" reg. issued by Ministry of Environment and Forest (MoEF) (Letter no. F. No. J-11011/395/2012-IA-II (I) dated 9th Aug 2021) enclosed as Annexure-F.

Thanking you,  
With regards,

(S Vijay Kumar)  
Deputy General Manager (HSE)  
IOCL Paradip Refinery

Enclo.: As above



# IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

## Annexure-A

|                                |   |  |
|--------------------------------|---|--|
| Name of Project                | : | Grass Root Refinery-cum-Petrochemical Complex of 15 MMTPA at Paradip, Odisha |
| Clearance Letter(s) No. & Date | : | F.No.J-11011/70/2007-1A II (I) dated 06th July, 2007                         |
| Period of Compliance Report    | : | Oct'21 to Mar'22   |

| S. No.    | CONDITION  | STATUS  |
|-----------|--|---|
| <b>A.</b> | <b>SPECIFIC CONDITIONS:</b>  |   |
| i.        | The company shall ensure strict implementation/ compliance to the stipulations made by MOEF vide OM No.J-11011/26/1997-IA-II dated 24 <sup>th</sup> December, 1997.  | All stipulations are complied<br><br>Compliance report attached as <b>Annexure-1</b>  |
| ii.       | The gaseous emissions (SO <sub>2</sub> , NO <sub>x</sub> , CO, NMHC & Benzene) from the various process units shall conform to the standards prescribed under the Environment (Protection) Rules, 1986 or norms stipulated by the SPCB whichever is more stringent. At no time, the emission level shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.         | Complied<br><br>Stack emission being monitored for adherence to the MoEF notification dated 18 <sup>th</sup> March'2008.<br><br>Stack Report attached as <b>Annexure-2</b><br>NHMC and Benzene monitoring Report attached as <b>Annexure-3</b>  |
| iii.      | Ambient air monitoring stations, [SPM, SO <sub>2</sub> , NO <sub>x</sub> and NMHC, Benzene] shall be set up in the refinery complex in consultation with SPCB, based on occurrence of maximum ground level concentration and down-wind direction of wind. The monitoring network must be decided based on modelling exercise to represent short term GLCs. Continuous on-line stack monitoring equipment shall be installed for measurement of SO <sub>2</sub> and NO <sub>x</sub> . Data on VOC shall be monitored and submitted to the SPCB/ Ministry. | 7 nos. of Ambient Air Quality Monitoring (AAQM) stations were set up based on the modelling exercise conducted under the Comprehensive EIA Study<br><br>Continuous monitoring in all the 7 monitoring station already implemented. On-line data transmission to OSPCB/CPCB server is already done.<br><br>Continuous monitoring in all stacks already implemented. On-line data transmission to OSPCB/CPCB server is already done.<br><br>VOC monitoring being done at various locations of the Refinery.<br>VOC Reports attached as <b>Annexure-4</b> .<br>Ambient Air quality attached as <b>Annexure-5</b> .<br>Stack report attached as <b>Annexure-2</b> . |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S. No. | CONDITION  | STATUS   |
|--------|--|--|
| iv.    | The total SO <sub>2</sub> emission from the refinery complex shall not exceed 1000 kg/hr after fully stabilizing of the expansion and modernization of the refinery complex and upgrading the existing facilities. SO <sub>2</sub> emission report may be made on daily basis for all the stacks (fuel burning and process emissions through the computerized mechanism). Further, regular monitoring of stacks every fortnight must also be carried out to cross check the data obtained from computerized monitoring by engaging a reputed organization. In addition, a monthly sulphur balance statement indicating type of fluid, its S – content, product S - content, SO <sub>2</sub> emission etc. may be made. Daily, fortnightly and monthly reports generated as above shall be sent to the SPCB and MOEF. | <p>Complied</p> <p>SO<sub>2</sub> emission in kg/hr being calculated monthly basis.</p> <p>Stack Report attached as <b>Annexure-2</b>.<br/>Sulphur Balance attached as <b>Annexure-6</b>.</p>  |
| v.     | All the Sulphur Recovery Units shall have overall efficiency of 99.9%.   | Sulphur Recovery Units with overall efficiency of 99.9% has been commissioned.   |
| vi.    | Ultra Low – NO <sub>x</sub> burners shall be provided in the new furnaces to avoid excessive formation of NO <sub>x</sub> .  | <p>Complied</p> <p>Ultra Low NO<sub>x</sub> burners installed in major fired heaters.</p>  |
| vii.   | Company shall install online SO <sub>2</sub> and NO <sub>x</sub> analysers in all the stacks of the refinery.  | <p>On-line SO<sub>2</sub> and NO<sub>x</sub> analysers installed in all the stacks of the refinery.</p> <p>Data being reflected in OSPCB/CPCB RTDAS.</p>   |
| viii.  | Fugitive emissions of HC from product storage tank farms etc. must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations. Necessary measures shall be adopted so as to ensure that the NMHC levels outside the refinery complex premises do not exceed prescribed limits. Monitored data shall be submitted to OPCB / CPCB every three months and to Ministry of Environment & Forests every six months.   | <p>Complied</p> <p>HC detectors installed in strategic locations of the tankage area.</p> <p>Fugitive emission in tankage area is attached as <b>Annexure-7</b>.</p>   |
| ix.    | For control of fugitive emissions, the company shall augment route all unsaturated hydrocarbons to the flare system in addition to the existing flare system. All the pumps and other equipment where there is a likelihood of HC leakages shall be provided with LEL indicators and also provide for immediate isolation of such equipment, in case of a leakage. The company shall adopt Leak Detection and Repair (LDAR) programme for quantification and control of fugitive emissions.  | <p>Complied</p> <p>To safeguard process units during emergency, flare system is installed for complete combustion of hydrocarbon before releasing to atmosphere.</p> <p>HC detectors are installed in strategic locations throughout the Refinery complex.</p> <p>LDAR programme is carried out and reports attached as <b>Annexure-7</b>.</p> |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S. No. | CONDITION  | STATUS  |
|--------|--|---|
| x.     | All the stacks shall be of appropriate design and height shall be attached to pollution control systems, wherever necessary. All stacks in the complex must meet the minimum stack height criteria as prescribed in the Environment Protection emissions.  | <p>Complied</p> <p>The minimum stack height designed as per the following:<br/> <math>H = 14 Q_g^{0.3}</math><br/> H = Height of stack in meters<br/> Q<sub>g</sub> = Quantity of SO<sub>2</sub> emission in kg/hr</p> <p>All the major stacks are of height more than 60 m and tallest height is the flare of 131 m.</p>   |
| xi.    | All new standards/ norms which are being proposed by CPCB for refinery projects/ petrochemical units shall be applicable for the proposed expansion and modernization of the petrochemical refinery complex. These standards shall be incorporated into the detail designs for the proposed expansion and modernization. The existing refinery complex shall also be upgraded to the new above mentioned emission standards.                                   | <p>Complied</p> <p>The Refinery in its design has incorporated the updated environment standard issued on 18<sup>th</sup> March'2008 for emission &amp; discharge and 18<sup>th</sup> November'2009 for Ambient Air Quality.</p>  |
| xii.   | Ground water shall not be tapped for construction, industrial or domestic uses including the township.   | <p>Complied</p> <p>No ground water tapping done during construction work</p>  |
| xiii.  | Liquid effluents shall be treated to conform to the standards stipulated by CPCB / Ministry of Environment & Forests under EPA 1986 and also the new norms being specified. Treated effluent will be recycled and reused. The treated effluent shall be discharged into the sea through a pipeline of about 3 km from low tide line. The domestic effluent after treatment and conforming to the prescribed standards shall be used for greenbelt development. | <p>Complied</p> <p>State-of-the-art effluent treatment plant has been commissioned to treat industrial effluent as well as domestic sewage with maximum recycle facility.</p> <p>Balanced treated effluent after recycle being discharged to the sea through a pipeline of about 3 km from low tide line.</p> <p>Treated effluent water quality report attached as <b>Annexure-8.</b></p> |
| xiv.   | The company shall undertake monitoring of the groundwater quality at the locations as suggested by the Central Ground Water Board. Monitoring results of the same shall be submitted to the OPCB/CPCB and MOEF.  | <p>Complied</p> <p>Ground water monitoring being carried out in the Refinery.</p> <p>Ground water quality monitoring report attached as <b>Annexure-9.</b></p>  |
| xv.    | M/s IOCL shall undertake rainwater harvesting measures to recharge the ground water in the area in consultation with Central Ground Water Board and Orissa Pollution Control Board.  | <p>Two storm water reservoirs (Capacities: 2,96,000 KL and 3,13,000 KL) have been developed to store rain water in monsoon in the Refinery premises. Also, storm water collection pond of capacity @ 470000 kl has been developed in Ecological park.</p>   |
| xvi.   | Green belt shall be raised in 580 acre area as per CPCB guidelines.  | <p>Complied</p> <p>Greenbelt has been developed in an area of 580 acres with the help of Orissa Forest Development Corporation Ltd. (OFDCL). 5,87,000 trees have been planted around the</p>  |



## IOCL, Paradip Refinery cum Petrochemicals Complex

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| S. No. | CONDITION  | STATUS  |
|--------|--|---|
|        |  | Refinery area and approx. 50682 trees have been planted in the township.<br>Every year also, Paradip Refinery is doing plantation in and around Refinery. Till date approximately >9 Lac trees have been planted.                             |
| xvii.  | Occupational Health Surveillance of the employees and workers shall be done on a regular basis and records maintained as per the Factories Act.  | Complied<br>Occupational Health Report attached as <b>Annexure-10</b> .   |
| xviii. | The marine water quality shall be regularly monitored for the water quality (temperature, petroleum hydrocarbons, phenols, sulphides, total organic carbon), sediment quality (trace elements, petroleum hydrocarbons, TOC and sediment size) and biological parameters (primary productivity, benthos, fish quality and growth, biomass, phytoplankton and zooplankton).                                  | Complied<br><br>Marine water quality monitoring job is being carried out by third party lab recognized by MoEFCC.<br>Marine water quality monitoring Report attached as <b>Annexure-11</b> .  |
| xix.   | The design, material of construction, assembly, inspection, testing and safety aspects of operation and maintenance of pipeline and transporting the oil shall be governed by ASME/ANSI B31.8/B31.4 and OISD standard 141.   | Complied<br>The Refinery is strictly following the standards  |
| xx.    | The project authorities should install SCADA system with dedicated optical fibre based telecommunication link for safe operation of pipeline and Leak Detection System.<br>Intelligent pigging facility should be provided for the entire pipeline system for internal corrosion monitoring.<br>Coating and impressed current cathodic protection system should be provided to prevent external corrosion. | Complied<br>Online detection of leak in the pipeline is through Optical fibre cable and is installed in South Oil jetty pipelines.<br><br>Cathodic protection system is provided for all underground pipelines to prevent external corrosion. |
| xxi.   | The project authorities shall patrol and inspect the pipeline regularly for detection of faults as per OISD guidelines and continuous monitoring of pipeline operation by adopting non-destructive method(s) of testing as envisaged in the EMP. Pearson survey and continuous potential survey should be carried out at regular intervals to ensure the adequacy of cathodic protection system.           | Complied.<br>Regular patrolling is being done for the SOJ and Marketing pipelines.<br><br>CAT & DCVG survey has been carried out within 05 years of commissioning of the lines (ie, by 2021) as per OISD-138 guidelines.                      |
| xxii.  | The solid waste shall be disposed of in secured landfill facility within the refinery. The spent catalyst and incinerated sludge will be stored in segregated manner in the secured landfill area. Tank bottom sludge from refinery operation shall be put to oil recovery system and the residual sludge will be incinerated. The incinerated sludge ash shall be   | Complied<br>Melting pit has been constructed to recover oil from tank bottom sludge and Incinerator has been installed to burn the residual sludge. SLF has been constructed to dispose the incinerated ash.                                  |



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| S. No.    | CONDITION   | STATUS  |
|-----------|---|---|
|           | incinerated. The incinerated sludge ash shall be stored in secured landfill inside refinery.<br>Bio sludge shall be stored in drying pit for natural weathering and then used as manure inside refinery premises.   | In ETP, sludge drying bed is constructed for drying of bio sludge.  |
| xxiii.    | The company shall also comply with all the conditions and safeguards prescribed in the EIA & Risk Assessment Reports.   | Complied<br>Paradip Refinery fully implemented all the conditions stipulated in EIA and Risk Assessment reports.  |
| xxiv.     | The On-site and Off-site Emergency Preparedness Plans, Oil Spill Contingency Plans, Marine Disaster Management Plan shall be prepared for the enhanced refinery throughput and submitted to the Ministry before commissioning at the enhanced capacity.                                     | Complied<br>On-site and off-site preparedness plan of Paradip Refinery is in place.<br><br>Emergency Response and Disaster management Plan (ERDMP) has been approved by MoP&G<br><br>On-site emergency plan is approved by Director of Factories and Boiler.<br><br>Off-site plan is incorporated in District Emergency Plan. |
| xxv.      | The Environment Management Cell and laboratory facilities for the collection of the samples shall be augmented with suitable facilities and qualified personnel and directly report to the chief executive of the refinery complex.   | Complied<br>Dedicated Environment Management Cell headed by a HOD exists in the Refinery to take care of all the environmental issues.  |
| xxvi.     | The company shall prepare comprehensive EIA/EMP report and submit to the Ministry within one year.  | Complied<br>Comprehensive EIA Report was prepared and submitted to SPCB on 12.09.2008 and MOEF on 22.09.2008.   |
| <b>B.</b> | <b>GENERAL CONDITIONS:</b>  |   |
| i.        | The project authorities must strictly adhere to the stipulations made by the Orissa State Pollution Control Board and the State Government.   | Noted for compliance  |
| ii.       | No further expansion or modernization in the plant shall be carried out without prior approval of the Ministry of Environment and Forests.  | Noted for compliance  |
| iii.      | At no time, the emissions shall 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 shall not be restarted until the desired efficiency has been achieved. | Noted for compliance  |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S. No. | CONDITION  | STATUS   |
|--------|--|--|
| iv.    | The overall noise levels in and around the plant area should be kept well within the standards (75 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).   | Noise survey is regularly carried out by Industrial Hygienist.<br>Noise Survey Report attached as <b>Annexure-12</b> .   |
| v.     | The project authorities must 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 project.  | Complied with<br><br>All required licenses obtained from CCE.  |
| vi.    | The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management and Handling) Rules, 2003. Authorization from the State Pollution Control Board must be obtained for collections/treatment/storage/disposal of hazardous wastes.  | Complied with<br><br>HW authorization obtained from OSPCB vide Ref no. IND-IV-HW-930/5028 dated 24-05-2019 with a validity till 31-03-2024   |
| vii.   | The project authorities will provide requisite 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 should not be diverted for any other purposes.  | Complied with<br>Paradip Refinery has installed all the pollution control units at an approximate cost of 10% of the capital expenditure of Refinery. In 2021-22, total expenditure on account of environment related job was approximately of Rs. 31.8 Cr. Year wise budget provision is made for environment related activities. |
| viii.  | The stipulated conditions will be monitored by the Regional of this Ministry at Bhubaneshwar / Central Pollution Control Board / State Pollution Control Board.<br>A six monthly compliance report and the monitored data should be submitted to them regularly.   | Six monthly compliance report is being sent to MoEF. Last report was submitted vide letter no. PDR/HSE/HC/MOEFCC/2021-22/002 dated 29.11.2021  |
| ix.    | The Project Proponent should 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 <a href="http://www.envfor.nic.in">http:// www.envfor.nic.in</a> . 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 | Complied<br><br>The information has been published in the two daily local newspapers i.e. 'The Samaj' in Oriya and 'The Indian Express' in English dated 18.07.2007.   |



## IOCL, Paradip Refinery cum Petrochemicals Complex

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| S. No. | CONDITION   | STATUS  |
|--------|---|---|
|        | of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional Office.   |   |
| x.     | The Project Authorities should 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 commencing the land development work. | <p>Complied</p> <p>The Board of Directors of IOCL accorded investment approval on 28.02.2009 for the project.</p> <p>EC-No. J-11011/70/2007-1A-II (I) dt. 06.07.2007. Consent to Establish (CTE) was granted by SPCB, Odisha on 14.07.2008.</p> <p>The land development work for the project commenced from 16.03.2009.</p> |



# IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

## Annexure-B

|                                |   |   |
|--------------------------------|---|---|
| Name of Project                | : | CRZ Clearance for laying of Storm Water Outfall Pipelines to sea for Paradip Refinery Project |
| Clearance Letter(s) No. & Date | : | F. No.11-86/2011-IA III dated 21st February 2012  |
| Period of Compliance Report    | : | Oct'21 to Mar'22  |

| S.N.  | SPECIFIC CONDITIONS :  | Status   |
|-------|--|--|
| 4(i)  | "Consent for Establishment" shall be obtained from State Pollution Control Board under Air and Water Act and a copy shall be submitted' to the Ministry before start of any construction work at the site.   | "Consent for Establishment" obtained vide letter no. 12048 Ind-II-NOC- 4600 dated 25-06-2012   |
| (ii)  | The proposed storm water line shall be laid along the Crude Oil pipeline corridor which was accorded CRZ clearance for transportation of crude oil after the recommendation of the SCZMA.<br><br>However, the proponent shall submit the CRZ map showing the proposed pipeline route to SCZMA with a copy to the Ministry before commencement of the work. | Complied with<br><br>CRZ map has already been submitted<br><br>(Ref. No. IOCL/PDRP/LSTK-11/1/014)  |
| (iii) | The unit shall provide separate drains and collection system at the process area so as to prevent any possible mixing of process spillage in to storm water as proposed.   | Complied with<br><br>Separate drains for storm water and process drains have been provided in the process area of the Refinery.  |
| (iv)  | The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.   | Complied with<br><br>Dedicated Environment Management Cell headed by a HOD exists in the Refinery to take care of all the environmental issues   |
| (v)   | The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.   | Paradip Refinery has installed all the pollution control units at an approximate cost of 10% of the capital expenditure of Refinery. In 2021-22, total expenditure on account of environment related job was approximately of Rs. 31.8 Cr.<br>Year wise budget provision is made for environment related activities. |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S.N.   | SPECIFIC CONDITIONS :  | Status  |
|--------|--|---|
|        | <b>GENERAL CONDITIONS:</b>   |   |
| 5(i)   | Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.  | Complied<br><br>Taken care during construction activities. Now lines are already commissioned.  |
| (ii)'  | Full support shall be extended to the officers of this Ministry/ Regional Office at Bhubaneswar by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities. | Noted for compliance  |
| (iii)  | A six-Monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bhubaneswar regarding the implementation of the stipulated conditions.   | Six monthly compliance report is being sent to MoEF. Last report was submitted vide letter no. PDR/HSE/HC/MOEFCC/2021-22/002 dated 29.11.2021   |
| (iv)   | Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.   | Noted for compliance  |
| (v)    | The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.   | Noted   |
| (vi)   | In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.  | Noted for compliance  |
| (vii)  | The project proponents 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 land development work.  | Complied<br><br>This is the part of the entire Refinery Project. The Board of Directors of IOCL accorded investment approval for the entire project at Paradip on 28.02.2009 for the project. |
| (viii) | State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Center and Collector's Office/Tehsildar's office for 30 days.   | For compliance by OSPCB office.   |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S.N. | SPECIFIC CONDITIONS :  | Status  |
|------|--|---|
| 6    | These stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991 and EIA Notification 1994, including the amendments and rules made thereafter   | Noted   |
| 7    | All other statutory clearances such as the approvals for storage of diesel from Chief Controller. of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.  | Complied with<br>Paradip Refinery has already obtained all necessary statutory approvals  |
| 8    | The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded Environmental Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at <a href="http://www.envfor.nic.in">http://www.envfor.nic.in</a> . The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bhubaneswar. | Complied with<br><br>Advertisement placed in two newspapers (One is "The Samaja" and other is "The Times of India"), dated 1st March'12). |
| 9    | Environmental clearance is subject to final order of the Hon'ble-Supreme Court of India in the matter of Goa Foundation Vs. Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.   | Noted   |
| 10   | Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website  | Complied  |
| 11.  | A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad/Municipal Corporation, Urban Local   | Complied  |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S.N. | SPECIFIC CONDITIONS :  | Status   |
|------|--|--|
|      | Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.  |  |
| 12   | The proponent shall upload the status of compliance of the stipulated EC conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.  | Complied<br>Six monthly compliance report is being sent to MoEF. Last report was submitted vide letter no. PDR/HSE/HC/MOEFCC/2021-22/002 dated 29.11.2021  |
| 13   | The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent 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 EC conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail | Complied<br><br>Paradip Refinery regularly submitting the Environment Statement in September.<br>Environment Statement for FY 2020-21 submitted on 27.09.2021 vide ref no. PDR/HSE/Env-S/2021-22 |



# IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

## Annexure-C

|                                |   |  |
|--------------------------------|---|--|
| Name of Project                | : | <b>CRZ Clearance for laying of pipeline from Paradip Refinery to South Oil Jetty at Paradip Port, Odisha</b> |
| Clearance Letter(s) No. & Date | : | F. No. 11-33/2013-IA III dated 19th September, 2013  |
| Period of Compliance Report    | : | Oct'21 to Mar'22   |

| S.N.   | SPECIFIC CONDITIONS :   | Status   |
|--------|---|--|
| 5(i)   | "Consent for Establishment" shall be obtained from State Pollution Control Board under Air and Water Act and a copy shall be submitted to the Ministry before start of any construction work at the site. | "Consent for Establishment" obtained vide letter no 12048 Ind-II-NOC- 4600 dated 25-06-2012. Copy has been submitted to the ministry vide letter no. PDRP/HSE/CRZ/MoEF/2013-1 dated 03.10.2013.                                      |
| (ii)   | All the conditions of Forest Clearance dated 06/02/2013 shall be complied with.   | Complied<br>Compliance status already submitted and based on the status, Forest and Environment Dept. Govt. of Odisha has been issued a letter (Letter No. 10F(Cons)510/2012 23891/F&E. Dtd 20/11/13) to accord the final clearance. |
| (iii)  | The laying of pipeline at creek shall be carried out in such a way that it shall not obstruct tidal flow of the creek.  | Due care was taken during laying of the pipeline.  |
| (iv)   | All the conditions stipulated by the Odisha Coastal Zone Management Authority (OCZMA) shall be complied with.   | Complied.  |
| (v)    | Laying pipe line shall not be carried out during the breeding of olive Ridely turtle as committed vide undertaking dated 25.06.2013.  | Complied<br>Point was taken care. No construction work was done during the breeding season of olive Ridely turtle  |
| (vi)   | Soil and water samples shall be regularly monitored along the pipeline route to check the leakage/contamination, if any and shall examine if any strengthening is required.                               | Complied<br>Soil quality monitoring job is being carried out by third party lab recognized by MoEFCC.<br>Soil quality monitoring Report attached as <b>Annexure-13</b> .   |
| (vii)  | Proper oil spillage contingency plan shall be put in place.   | Complied<br>PDR has submitted the oil contingency plan for SOJ facility to PPT to incorporation in the existing plan of PPT.   |
| (viii) | It shall be ensured that there is no disturbance to people, houses or fishing activity as a result of the project.  | Taken care during construction. Now it is commissioned.  |
| (ix)   | The smooth and safe operation of the system shall be ensured by incorporating a computerized SCADA (Supervisory Control And Data Automation) system. Any leakage in the pipeline shall be immediately     | Complied<br>Leak detection by optical fibre cable installed for south oil jetty pipelines.   |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S.N.  | SPECIFIC CONDITIONS :   | Status  |
|-------|---|---|
|       | detected by the Computer system and product pumping shall be immediately cut off.   |   |
| (x)   | All the recommendation of the EMP shall be complied with letter and spirit. All the mitigation measures submitted in the EIA report shall be prepared in a matrix format and the compliance for each mitigation plan shall be submitted to MoEF along with half yearly compliance report to MoEF-RO.  | Complied  |
| (xi)  | The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.  | Complied<br>Dedicated Environment Management Cell headed by a HOD exists in the Refinery to take care of all the environmental issues.  |
| (xii) | The funds earmarked for environment management plan shall be included in the budget and this shall not be diverted for any other purposes.  | Paradip Refinery has installed all the pollution control units at an approximate cost of 10% of the capital expenditure of Refinery. In 2021-22, total expenditure on account of environment related job was approximately of Rs. 31.8 Cr. Year wise budget provision is made for environment related activities. |
|       | GENERAL CONDITIONS :  |   |
| 6(i)  | Appropriate measures must be taken while undertaking digging activities to avoid any likely degradation of water quality.   | Complied<br>Due care was taken during construction. Now the lines are already commissioned.   |
| (ii)  | Full support shall be extended to the officers of this Ministry/Regional Office at Bhubaneswar by the project proponent during inspection of the project for monitoring purposes by furnishing full details and action plan including action taken reports in respect of mitigation measures and other environmental protection activities. | Noted for compliance  |
| (iii) | A six-monthly monitoring report shall need to be submitted by the project proponents to the Regional Office of this Ministry at Bhubaneswar regarding the implementation of the stipulated conditions.  | Six monthly compliance report is being sent to MoEF. Last report was submitted vide letter no. PDR/HSE/HC/MOEFCC/2021-22/002 dated 29.11.2021   |
| (iv)  | Ministry of Environment & Forests or any other competent authority may stipulate any additional conditions or modify the existing ones, if necessary in the interest of environment and the same shall be complied with.  | Noted   |
| (v)   | The Ministry reserves the right to revoke this clearance if any of the conditions stipulated are not complied with the satisfaction of the Ministry.  | Noted   |
| (vi)  | In the event of a change in project profile or change in the implementation agency, a fresh reference shall be made to the Ministry of Environment and Forests.   | Noted   |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S.N.   | SPECIFIC CONDITIONS :  | Status  |
|--------|--|---|
| (vii)  | The project proponents 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 land development work.  | Complied<br>This is the part of the entire Refinery Project. The Board of Directors of IOCL accorded investment approval for the entire project at Paradip on 28.02.2009 for the project. |
| (viii) | State Pollution Control Board shall display a copy of the clearance letter at the Regional Office, District Industries Centre and Collector's Office/Tehsildar's office for 30 days.   | Compliance by OSPCB   |
| 9      | The project proponent shall advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded CRZ Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment and Forests at <a href="http://www.envfor.nic.in">http://www.envfor.nic.in</a> . The advertisement should be made within 10 days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional office of this Ministry at Bhubaneswar. | Complied<br><br>Advertisement placed in two newspapers (One is "The Samaj" and other is "The New Indian Express", dated 29th Sept'13)   |
| 11     | Status of compliance to the various stipulated environmental conditions and environmental safeguards will be uploaded by the project proponent in its website.   | Complied  |
| 12     | A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parisad /Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.  | Complied  |
| 14     | The proponent shall upload the status of compliance of the stipulated Clearance conditions, including results of monitored data on their website and shall update the same periodically. It shall simultaneously be sent to the Regional Office of MoEF, the respective Zonal Office of CPCB and the SPCB.   | Six monthly compliance report is being sent to MoEF. Last report was submitted vide letter no. PDR/HSE/HC/MOEFCC/2021-22/002 dated 29.11.2021   |
| 15     | The environmental statement for each financial year ending 31st March in Form-V as is mandated to be submitted by the project proponent 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 Clearance conditions and shall also be sent to the respective Regional Offices of MoEF by e-mail.   | Complied  |



# IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

## Annexure-D

|                                |   |  |
|--------------------------------|---|--|
| Name of Project                | : | <b>CRZ Clearance for 'Pet Coke Evacuation Project' for Paradip Refinery in District Jagatsinghpur (Odisha)</b> |
| Clearance Letter(s) No. & Date | : | F. No. 11-30/2015-IA.III dated 11th February, 2016   |
| Period of Compliance Report    | : | Oct'21 to Mar'22   |

| S.N.     | CONDITIONS :  | Status   |
|----------|---|--|
| <b>A</b> | <b>SPECIFIC CONDITIONS:</b>   |  |
| i)       | The project proponent shall undertake periodic inspection and maintenance to avoid spillages, wear and tear of the proposed conveying system.   | Complied   |
| ii)      | Adequate safe guards including alarm and emergency shutdown system shall be provided for the proposed conveying system.   | Complied   |
| iii)     | Proper fire hydrant and fire extinguisher shall be provided at appropriate locations conforming to prevailing norms or fire safety.   | Complied   |
| iv)      | There shall be no destruction of the mangrove during construction as well as the operation phase.   | Complied   |
| v)       | The top soil of excavated area during the construction shall be kept separately and to be used for vegetation.  | Complied<br>Excavated soil used in Ecological Park and road side land filling which used for vegetation.   |
| vi)      | The labour camps, storage of material and machinery during construction phase shall be located outside the CRZ.   | Complied<br>Yes, located outside the CRZ.  |
| vii)     | Crossing of creek shall be on trestles with adequate clearance thereby having negligible impact on the flow.  | Complied<br>The RRLS facility is laid on the existing bridge for which sufficient clearance already exist. |
| viii)    | During construction, solid waste generated will include packaging and wrapping material, stubs of spent welding electrodes, used rags and housekeeping etc. The project proponent shall ensure disposal of such wastes at approved sites. There shall be no disposal in CRZs. | Complied   |
| ix)      | There shall be no ground water withdrawal within CRZ limits.  | Complied   |
| x)       | All the recommendations and conditions specified by Odisha Coastal Zone Management Authority (OCZMA) vide letter No. 56/OCZMA dated 25.08.2015, shall be complied with.   | Complied   |
| xi)      | Project proponent shall implement all the recommendations stipulated in the EIA, EMP and  | Complied   |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S.N.     | CONDITIONS :   | Status  |
|----------|--|---|
|          | Risk Assessment reports pertaining to the project.   |   |
| xii)     | The project proponent shall set up separate environmental management cell for effective implementation of the stipulated environmental safeguards under the supervision of a Senior Executive.   | Complied<br>Dedicated Environment Management Cell headed by a HOD exists in the Refinery to take care of all the environmental issues.  |
| xiii)    | The project proponent shall take up mangrove plantation/ green belt in the project area, wherever possible. Adequate budget shall be provided in the Environment Management Plan for such mangrove development.  | Complied  |
| <b>B</b> | <b>General Conditions</b>  |   |
| i)       | 'Consent to Establish' shall be obtained from the State Pollution Control Board under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.   | Complied  |
| ii)      | A copy of the clearance letter shall also be displayed on the website of the concerned State Pollution Control Board. The EC letter shall also be displayed at the Regional Office, District Industries centre and Collector's Office/ Tehsildar's office for 30 days.   | Compliance at OSPCB site  |
| iii)     | The funds earmarked for environmental protection measures shall be kept in separate account and shall not be diverted for other purpose. Year-wise expenditure shall be reported to this Ministry and its concerned Regional Office.   | Complied<br>Year wise budget provision being made for environment related activities.<br>In 2021-22, total expenditure on account of environment related job was approximately of Rs. 31.8 Cr |
| 5        | The above stipulations would be enforced among others under the provisions of Water (Prevention and Control of Pollution) Act, 1974, the Air (Prevention and control of Pollution) act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991, EIA Notification, 2006 and CRZ Notification, 2011.  | Noted   |
| 6        | Officials from the Regional Office of MoEF&CC, Bhubaneswar who would be monitoring the implementation of environmental safeguards should be given full cooperation, facilities and documents/ data by the project proponents during their inspection. A complete set of all the documents submitted to MoEF&CC should be forwarded to the CCF, Regional Office of MoEF&CC Bhubaneswar. | Noted   |
| 7        | In the case of any change(s) in the scope of the project, the project would require a fresh appraisal by this Ministry.  | Noted for Compliance  |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S.N. | CONDITIONS :  | Status   |
|------|---|----------|
| 8    | The Ministry reserves the right to add additional safeguard measures subsequently, if found necessary, and to take action including revoking of the CRZ Clearance under the provisions of the Environmental (Protection) Act, 1986, to ensure effective implementation of the suggested safeguard measures in a time bound and satisfactory manner.   | Noted    |
| 9    | All other statutory clearances such as the approvals for storage of diesel from Chief Controller of Explosives, Fire Department, Civil Aviation Department, Forest Conservation Act, 1980 and Wildlife (Protection) Act, 1972 etc. shall be obtained, as applicable by project proponents from the respective competent authorities.  | Complied |
| 10   | The project proponent should advertise in at least two local Newspapers widely circulated in the region, one of which shall be in the vernacular language informing that the project has been accorded CRZ Clearance and copies of clearance letters are available with the State Pollution Control Board and may also be seen on the website of the Ministry of Environment, Forest & Climate Change at <a href="http://www.envfor.nic.in">http://www.envfor.nic.in</a> . The advertisement should be made within Seven days from the date of receipt of the Clearance letter and a copy of the same should be forwarded to the Regional Office of this Ministry at Bhubaneswar. | Complied |
| 11   | This Clearance is subject to final order of the Hon'ble Supreme Court of India in the matter of Goa Foundation Vs Union of India in Writ Petition (Civil) No.460 of 2004 as may be applicable to this project.  | Noted    |
| 12   | Any appeal against this clearance shall lie with the National Green Tribunal, if preferred, within a period of 30 days as prescribed under Section 16 of the National Green Tribunal Act, 2010.   | Noted    |
| 13   | A copy of the clearance letter shall be sent by the proponent to concerned Panchayat, Zilla Parishad/Municipal Corporation, Urban Local Body and the Local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal. The clearance letter shall also be put on the website of the company by the proponent.  | Complied |



# IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

## Annexure-E

|                                |   |   |
|--------------------------------|---|---|
| Name of Project                | : | <b>EC and CRZ Clearance for “Installation Ethylene Recovery Unit, Mono Ethylene Glycol Unit and BS-VI facility at Paradip Refinery cum Petrochemical Complex, village Abhayachandrapur, Tehsil Kujanga, District Jagatsinghpur (Odisha)</b> |
| Clearance Letter(s) No. & Date | : | F. No. J-11011-344/2016-IA-II (I) dated 11 <sup>th</sup> October, 2018  |
| Period of Compliance Report    | : | Oct'21 to Mar'22  |

| S.N.        | CONDITIONS :   | Status  |
|-------------|--|---|
| <b>11.0</b> | <b>EC CONDITIONS:</b>  |   |
| i)          | Consent to Establish/Operate for the project shall be obtained from the State Pollution Control Board as required under the Air (Prevention and Control of Pollution) Act, 1981 and the Water (Prevention and Control of Pollution) Act, 1974.                                       | Consent to Establish for the said project obtained from OSPCB vide letter ref: 9365/IND-II-NOC-6193 dated 06-08-2018.   |
| ii)         | Necessary authorization required under Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and Solid Waste Management Rule, 2016 shall be obtained and provisions contained in the Rules shall be strictly adhered to.                                    | Complied.<br>MEG&ERU and BS-VI project is part of the existing Refinery which is having valid HW Authorization vide ref no. IND-IV-HW-930/5028 dated 24-05-2019 with a validity till 31-03-2024   |
| iii)        | National Emission standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G.S.R 608 € dated 21st July, 2010 and amended from time to time shall be followed.  | G.S.R 186 (E) dated 18 <sup>th</sup> March, 2008 is applicable to Oil Refinery and IOCL Paradip Refinery is complying the same.   |
| iv)         | To control source and the fugitive emissions, suitable pollution control devices shall be installed with different stacks to meet the prescribed norms and/or the NAAQMS. The gaseous emissions shall be dispersed through stacks of adequate height as per the CPCB/SPCB guideline. | Being Complied<br>Stack height is as per statutory requirement i.e.<br>$H = 14 Q_g^{0.3}$<br>H = Height of stack in meters<br>Q <sub>g</sub> = Quantity of SO <sub>2</sub> emission in kg/hr  |
| v)          | The project proponent shall take necessary steps to prevent any liquid hydrocarbon falling on the water body of the creek from the pipelines passing over the bridge of Santra creek by creating a tray like barrier below the pipelines which can hold any leakage materials.       | Being Complied<br><br>The External Safety Audit of the refinery during Nov-2018 by Oil Industry Safety Directorate (OISD) MoP&NG Government of India during audit reviewed in detail the CRZ concerns & recommendation, OISD recommended to review two options 1. Providing enclosure |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S.N. | CONDITIONS : | Status  |
|------|--------------|---|
|      |              | <p>around these pipelines 2. Develop approach to the creek waterway and deploy oil spill containment boom &amp; skimmers so as to address if any incidental oil leakage spill containment and mitigation.</p> <p>Accordingly IOCL reviewed the hydrocarbon pipelines crossing Santra creek for design, Inspection, Operation &amp; Maintenance, environment &amp; safety procedures, its location within refinery complex and pipelines leak occurrence probability, mitigation measures options feasibility for Spill oil containment in detail and observed as below.</p> <p>Design, O&amp;M, inspection:</p> <ul style="list-style-type: none"> <li>• The refinery location compatible Design standards, O&amp;M &amp; Inspection practices ensures integrity of pipelines and structure stability.</li> <li>• Illumination at pipeline bridge area has been enhanced.</li> <li>• The bridge area is under round the clock patrolling by CISF personnel placed at site.</li> <li>• All the pipelines crossing the creek are subject to health checks like monthly walk thru inspection, quarterly thickness sampling for corrosion detection and periodical LRUT survey as per standards (once in two years) and records maintained.</li> </ul> <p>View the above actions, hydrocarbon pipelines leakage probability is almost NIL.</p> <p>The option 1 providing tray barrier or enclosure around the pipelines crossing over the creek require humongous structures erection at the extant pipelines bridge, so as to maintain integrity &amp; stability of structures against high wind pressure load considering super cyclones prone location of Paradip Refinery. While reviewing pipe racks adequacy for new projects, it is found that the structures cannot accommodate additional load. Hence the option is not found feasible.</p> <p>The alternate option found feasible and implemented as detailed below so as to ensure compliance with the recommendation.</p> |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S.N.  | CONDITIONS :  | Status   |
|-------|---|--|
|       |   | Oil spill containment Booms, Boats, oil adsorbent, oil dispersant and cleaning kit are deployed. Employee's knowledge & skill development action taken through Oil Spill Response (OSR) drill conducted on 07.10.2020 involving an expert agency. Regular drills will be conducted to ensure skill readiness for attending any emergency in minimum possible time.<br><br>Complied with. |
| vi)   | Total water requirement shall not exceed 4685 cum/hr to be met from Mahanadi River. Necessary permission in this regard shall be obtained from the concerned regulatory authority.  | Being complied   |
| vii)  | Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arrestors shall be provided on tank farm, and solvent transfer to be done through pumps.  | Being complied   |
| viii) | Process effluent/any waste water shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.  | Being complied   |
| ix)   | Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic and evaporation salt shall be disposed off to the TSDF. The ash from boiler shall be sold to brick manufacturer/cement industry.                  | MEG-ERU and BS-VI facility is integral part of the existing Refinery. So, existing facility is complying the same.   |
| x)    | The company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemical (MSIHC) Rules, 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989. | Being complied   |
| xi)   | Regular VOC monitoring to be done at vulnerable points  | Being complied   |
| 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   | Being complied<br>MEG-ERU and BS-VI facility is integral part of the existing Refinery. So, existing facility is complying the same  |
| xiii) | Comprehensive water audit to be conducted on annual basis and report to the concerned   | Complied<br>Water Audit by M/s EIL has been carried out for  |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S.N.   | CONDITIONS :   | Status   |
|--------|--|--|
|        | Regional Office of MEF&CC. Outcome from the report to be implemented for conservation scheme   | entire Refinery in 2019-20.  |
| xiv)   | Oil catchers/oil traps shall be provided at all possible locations in rain/ storm water drainage system inside the factory premises  | Complied<br>MEG-ERU and BS-VI facility is integral part of the existing Refinery. Oil catchers are already provided in the existing facility.  |
| xv)    | The company shall undertake waste minimization measures as below:-<br>(a) Metering and control of quantities of active ingredients to minimize waste.<br>(b) Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.<br>(c) Use of automated filling to minimize spillage.<br>(d) Use of Close Feed system into batch reactors.<br>(e) Venting equipment through vapour recovery system.<br>(f) Use of high pressure hoses for equipment clearing to reduce wastewater generation. | Complied<br>IOCL PDR has installed facilities like Vapor recovery system, Closed feed system etc. to minimize spillage or vent.  |
| xvi)   | The green belt of 5-10 m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department.   | Noted for compliance.<br>Green belt has already been developed for the existing Refinery as per the previous EC requirement. Additional green belt is under development to comply with the requirement of 33%. |
| xvii)  | At least 0.25% of the total project cost shall be allocated for Corporate Environment Responsibility (GER) and item-wise details along with time bound action plan shall be prepared and submitted to the Ministry's Regional Office.  | Being complied   |
| xviii) | For the DG sets, emission limits and the stack height shall be in conformity with the extant regulations and the CPCB guidelines. Acoustic enclosure shall be provided to DG set for controlling the noise pollution   | Shall be complied  |
| xix)   | The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling.   | Complied<br>MEG-ERU and BS-VI facility is integral part of the existing Refinery. So, existing facility is complied  |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S.N.        | CONDITIONS :   | Status  |
|-------------|--|---|
|             | Firefighting system shall be as per the norms  | for the same  |
| xx)         | Continuous online (24x7) monitoring system for stack emissions shall be installed for measurement of flue gas discharge and the pollutants concentration, and the data to be transmitted to the CPCB and SPCB server. For online continuous monitoring of effluent, the unit shall install web camera with night vision capability and flow meters in the channel/drain carrying effluent within the premises. In case of the treated effluent to be utilized for irrigation/gardening, real time monitoring system shall be installed at the ETP outlet | <p>The MEG-ERU and BS-VI facility is integral part of the existing Refinery. The units under this EC are under construction.</p> <p>At Paradip Refinery, all the effluents within the Refinery premises are carried through a closed system, for online continuous monitoring of effluents, flow meters had been provided for individual effluent streams going to ETP and CCTV Cameras, alarm have been provided at each process unit generating effluent and the monitored at Main Control room for each unit.</p> <p>Treated effluent water meeting MINAS parameters limits is discharged from the Refinery through a closed system into deep Sea at 3 km from LTL through diffuser. Online analysers have been provided in the effluent discharge line for continuous monitoring of the treated effluent discharge water quality and quantity and real time data sent online to CPCB, SPCB.</p> <p>CCTV camera is installed for monitoring of effluent discharge line area.</p> |
| xxi)        | Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act   | Complied<br>Occupational Health Report attached as <b>Annexure-10.</b>  |
| xxii)       | All terms and conditions stipulated by the State Coastal Zone Management Authority in their recommendation/NOC letter dated 11 <sup>th</sup> January, 2018 shall be strictly adhered to  | Complied  |
| xxiii)      | The National Emission Standards for Petroleum Oil Refinery issued by the Ministry vide G.S.R. 186(E) dated 181h March, 2008 and G.S.R. 595(E) dated 2P1 August, 2009 as amended from time to time shall be followed  | Complied with<br>Paradip Refinery is strictly following the Standards vide G.S.R. 186(E) dated 181h March, 2008 and G.S.R. 595(E) dated 2P1 August, 2009  |
| xxiv)       | The National Emission Standards for Petrochemical (Basic & Intermediates) issued by the Ministry vide G.S.R. 820 (E) dated 9th November, 2012 as amended time to time shall be followed.   | Shall be complied   |
| <b>11.1</b> | <b>Compliance of other general conditions:</b>   |   |
| i)          | The project authorities must strictly adhere to the stipulations made by the State   | Being complied  |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S.N. | CONDITIONS :  | Status  |
|------|---|---|
|      | Pollution Control Board, Central Pollution Control Board, 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, Forest and Climate Change. 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 | Noted for Compliance  |
| 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 station each is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.  | Complied<br>The AAQMS installed in existing Refinery shall be extended for the MEG & BS-VI project.   |
| 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.  | Complied  |
| 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).  | Complied  |
| 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  | Complied<br>Ground water recharging is not suitable in Paradip region as water table is very high. However, Refinery has constructed two storm water reservoirs (Capacities: 2,96,000 KL and 3,13,000 KL) to store monsoon rain water in Refinery premises for re-use.<br>Further, Refinery has developed an Ecological |



## IOCL, Paradip Refinery cum Petrochemicals Complex


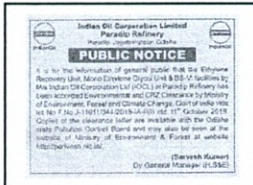
### Subject: EC CRZ - Compliance Status Report

| S.N.  | CONDITIONS :   | Status   |
|-------|--|--|
|       |  | park integrated with rain water harvesting pond which can store approximately 470000 KL water during rain.   |
| 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.   | Being complied   |
| 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, and risk mitigation measures relating to the project shall be implemented.  | Complied<br>EIA/EMP recommendations are compiled and attached  |
| ix)   | The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. ESC activities shall be undertaken by involving local villages and administration   | Being complied<br>IOCL PDR is implementing projects under CSR and CER extensively for improving the socio-economic conditions of the surrounding area  |
| x)    | The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment   | Complied with<br>Paradip Refinery has recently developed an ecological park to create an ambience for ecology and sustainability.  |
| xi)   | 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 | Complied with<br>In 2021-22, total expenditure on account of environment related job was approximately of Rs. 31.8 Cr.<br>Year wise budget provision is made for environment related activities. |
| xii)  | A copy of the clearance letter shall be sent by  | Complied   |



# IOCL, Paradip Refinery cum Petrochemicals Complex

## Subject: EC CRZ - Compliance Status Report

| S.N.  | CONDITIONS :  | Status   |
|-------|---|--|
|       | the project proponent to concerned Panchayat, Zilla Parishad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/representations, if any, were received while processing the proposal  |  |
| xiii) | 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  | Being complied<br><br>Six monthly compliance report is being sent to MoEF. Last report was submitted vide letter no. PDR/HSE/HC/MOEFCC/2021-22/002 dated 29.11.2021  |
| xiv)  | 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  | Being complied<br><br>Paradip Refinery regularly submitting the Environment Statement in September. Environment Statement for FY 2020-21 submitted on 27.09.2021 vide ref no. PDR/HSE/Env-S/2021-22  |
| xv)   | 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 <a href="http://moef.nic.in">http://moef.nic.in</a> . 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 | Advertisement placed in two newspapers (One is "The Samaja" and other is "The Times of India")<br><br>  |



## IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

| S.N. | CONDITIONS :  | Status            |
|------|---|-------------------|
|      | concerned Regional Office of the Ministry   |                   |
| xvi) | 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 | Shall be complied |

### Annexure-F

|                                |   |  |
|--------------------------------|---|--|
| Name of Project                | : | EC and CRZ Clearance for "Integrated Para-Xylene & Purified Terephthalic Acid (PTA) Project within existing Refinery complex by M/s. Indian Oil Corporation Limited, Paradip Refinery located at S.F. No-218, Abhayachandrapur Village, Jagatsinghpur District, Odisha State |
| Clearance Letter(s) No. & Date | : | F. No. J-11011/395/2012-IA-II (I) dated 9th Aug 2021   |
| Period of Compliance Report    | : | Oct'21 to Mar'22   |

| S.N.     | CONDITIONS :   | Status  |
|----------|--|---|
| <b>A</b> | <b>EC CONDITIONS:</b>  |   |
| i)       | Construction in CRZ area shall be in accordance with the provision of CRZ Notification, 2011 and as amended from time to time. The project proponent shall comply with all the conditions stipulated in OCZMA/CRZ recommendations and NOC issued for the same. | Noted for compliance.   |
| (ii)     | No groundwater shall be extracted to meet the water requirements during the construction phase of the project, within CRZ area.  | No ground water is extracted at Paradip Refinery. Entire water demand is met from River Mahanadi. |
| (iii)    | The PESO clearance shall be obtained, if related by M/s IOCL before commencing the project activities.   | Noted for compliance.   |
| (iv)     | No excavated material during the construction shall be dumped in water bodies adjacent to CRZ areas. CRZ site shall be restored to near original condition after completion of construction.   | Noted for compliance.   |
| (v)      | The company shall submit detailed study report on odour pollutants from the industry, their control  | Tender for the Odour Pollutant Study was cancelled as no relevant agencies                        |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S.N.   | CONDITIONS :   | Status  |
|--------|--|---|
|        | and mitigation within petrochemical refinery after carrying out continuous monitoring for one month and the report shall be submitted within three (03) months to the Ministry.  | participated in the tender. Tender is re-floated. Report shall be submitted at the earliest once the agency is lined up.<br>Request letter sent to MoEFCC regarding the same.   |
| (vi)   | The company shall 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, and risk mitigation measures relating to the project shall be implemented.                   | Noted for compliance.   |
| (vii)  | Total fresh water requirement shall not exceed 89832 m3/day, proposed to be met from River Mahanadi. Necessary permission in this regard shall be obtained from the concerned regulatory authority. The fresh water requirement shall be reduced after installation of rainwater harvesting system in the unit/project area. | Noted for compliance.   |
| (viii) | Comprehensive water audit to be conducted on annual basis and report to the concerned Regional Office of MEF&CC. Outcome from the report to be implemented for conservation scheme.  | Complied<br>Water Audit by M/s EIL has been carried out for entire Refinery in 2019-20 and recommendations have been implemented.   |
| (ix)   | Process effluent/any wastewater shall not be allowed to mix with storm water. Storm water drain shall be passed through guard pond.  | Being Complied for existing Refinery complex and shall be complied with in PX-PTA unit as well.   |
| (x)    | Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm, and solvent transfer to be done through pumps.   | Being Complied for existing Refinery complex and shall be complied with in PX-PTA unit as well.   |
| (xi)   | Process organic residue and spent carbon, if any, shall be sent to cement industries. ETP sludge, process inorganic & evaporation salt shall be disposed off to the TSDF. The ash from boiler shall be sold to brick manufacturers/cement industry.  | Noted for compliance.<br>Refinery ETP sludge is processed in Delayed Coker unit in Refinery itself as per HW authorization. Ash generation from boilers is very less ~ 20MT/ Annum as cleaner fuel is fired in boilers and ash being a small quantity is disposed in captive SLF. |
| (xii)  | Regular VOC monitoring shall be done at vulnerable points.   | Being Complied for existing Refinery complex and shall be complied with in PX-PTA unit as well.   |
| (xiii) | 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.   | Noted for compliance.   |
| xiv)   | Oil catchers/oil traps shall be provided at all possible locations in rain/ storm water drainage   | Complied<br>PX-PTA facility is integral part of the existing  |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S.N.   | CONDITIONS :  | Status  |
|--------|---|---|
|        | system inside the factory premises.   | Refinery. Oil catchers are already provided in the existing facility.   |
| xv)    | <p>The company shall undertake waste minimization measures as below:</p> <p>a) Metering and control of quantities of active ingredients to minimize waste.</p> <p>b) Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.</p> <p>c) Use of automated filling to minimize spillage.</p> <p>d) Use of Close Feed system into batch reactors.</p> <p>e) Venting equipment through vapour recovery system.</p> <p>f) Use of high pressure hoses for equipment cleaning etc. to reduce wastewater generation.</p>   | <p>Complied</p> <p>IOCL PDR has installed facilities like Vapor recovery system, Closed feed system etc. to minimize spillage or vent.</p>  |
| xvi)   | The green belt of 5-10 m width shall be developed in more than 33% of the total project area, mainly along the plant periphery, in downward wind direction, and along road sides etc. Selection of plant species shall be as per the CPCB guidelines in consultation with the State Forest Department.  | <p>Noted for compliance.</p> <p>Green belt has already been developed for the existing Refinery as per the previous EC requirement. Additional green belt is under development to comply with the requirement of 33%.</p>   |
| xvii)  | As per the Ministry's OM dated 30.09.2020 superseding the OM dated 01.05.2018 regarding the Corporate Environmental Responsibility, and as per the action plan proposed by the project proponent to address the socio-economic and environmental issues in the study area, the project proponent, as committed, shall provide education funds in technical training centers/ support in nearby village's schools, support in health care facilities, drinking water supply and funds for miscellaneous activities like solar street lights, battery, solar panel etc., in the nearby villages. The action plan shall to be completed within time as proposed. | <p>Noted for compliance</p> <p>IOCL PDR is implementing projects under CER extensively for improving the socio-economic conditions of the surrounding area.</p>   |
| xviii) | The project proponent shall ensure 70% of the employment to the local people, as per the applicable law. The project proponent shall set up a skill development center/provide skill development training to village people.  | <p>The employment of local people is being carried out as per the applicable law.</p> <p>Various developmental activities e.g. promoting education, skill development trainings etc. in nearby Gram Panchayats under CSR are being finalized by CSR team of Paradip Refinery in consultation with District Administration. Skill development in association with NSDC &amp; CIPET is being carried out periodically.</p> <p>Skill development Institute has been set up at Bhubaneswar with an aim to provide</p> |



## IOCL, Paradip Refinery cum Petrochemicals Complex

### Subject: EC CRZ - Compliance Status Report

| S.N.   | CONDITIONS :   | Status  |
|--------|--|---|
|        |  | opportunities to the unemployed and underprivileged youth of Odisha and to provide skilled manpower to the industry.  |
| xix)   | A separate Environmental Management Cell (having qualified person with Environmental Science/ Environmental Engineering/ specialization in the project area) equipped with full-fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.  | Being complied.<br><br>Dedicated Environment Management Cell headed by a HOD exists in the Refinery to take care of all the environmental issues  |
| xx)    | The unit shall make the arrangement for protection of possible fire hazards during manufacturing process in material handling. Firefighting system shall be as per the norms.  | Being Complied for existing Refinery complex and shall be complied with in PX-PTA unit as well.   |
| xxi)   | Continuous online (24x7) monitoring system for stack emissions shall be installed for measurement of flue gas discharge and the pollutants concentration, and the data to be transmitted to the CPCB and SPCB server. In case of the treated effluent to be utilized for irrigation/gardening, real time monitoring system shall be installed at the ETP outlet. | Noted for compliance.<br>Continuous online (24x7) monitoring system for stack emissions is already in place at Paradip Refinery and same shall be complied for PX-PTA unit stacks.<br>Real time monitoring system shall be installed at the ETP outlet. |
| xxii)  | PP to set up occupational health Centre for surveillance of the worker's health within and outside the plant on a regular basis. The health data shall be used in deploying the duties of the workers. All workers & employees shall be provided with required safety kits/mask for personal protection.   | Occupational health Centre is already available for the Refinery. Same facility shall be used for PX-PTA unit as well. OHC report for Refinery employees is enclosed as Annexure- 10.   |
| xxiii) | The National Emission Standards for Petrochemical (Basic & Intermediates) issued by the Ministry vide G.S.R. 820 (E) dated 9 <sup>th</sup> November, 2012 as amended time to time shall be followed.   | Noted for compliance.   |
| xxiv)  | Recommendations of mitigation measures from possible accident shall be implemented based on Risk Assessment studies conducted for worst case scenarios using latest techniques.  | Noted for compliance.   |
| xxv)   | The project proponent shall develop R&D facilities to develop their own technologies for propylene and polypropylene processing.   | IOCL has a fully established R&D facility located at Faridabad, Haryana.  |
| B      |  |   |
| (i)    | No further expansion or modifications in the plant, other than mentioned in the EIA Notification, 2006 and its amendments, shall be carried out without prior approval of the Ministry of Environment, Forest and Climate Change/SEIAA, as applicable.   | Noted for compliance.   |



## IOCL, Paradip Refinery cum Petrochemicals Complex


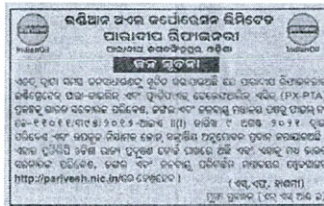
### Subject: EC CRZ - Compliance Status Report

| S.N.  | CONDITIONS :  | Status  |
|-------|---|---|
|       | 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/SEIAA, as applicable, to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.  |   |
| (ii)  | The energy source for lighting purpose shall be preferably LED based, or advanced having preference in energy conservation and environment betterment.  | Noted for compliance.   |
| (iii) | 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 the Environment (Protection) Act, 1986 Rules, 1989 viz. 75 dBA (day time) and 70 dBA (night time).                                    | Noted for compliance.   |
| (iv)  | The company shall undertake all relevant measures for improving the socio-economic conditions of the surrounding area. CER activities shall be undertaken by involving local villages and administration and shall be implemented. The company shall undertake eco developmental measures including community welfare measures in the project area for the overall improvement of the environment   | Being complied<br>IOCL PDR is implementing projects under CSR and CER extensively for improving the socio-economic conditions of the surrounding area.  |
| (v)   | 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. | Complied with<br>In 2021-22, total expenditure on account of environment related job for Paradip Refinery was approximately of Rs. 31.8 Cr.<br>Year wise budget provision is made for environment related activities. |
| (vi)  | A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, ZillaParishad/Municipal Corporation, Urban local Body and the local NGO, if any, from whom suggestions/ representations, if any, were received while processing the proposal.   | Complied  |
| (vii) | The project proponent shall also submit six   | Complied  |



# IOCL, Paradip Refinery cum Petrochemicals Complex

## Subject: EC CRZ - Compliance Status Report

| S.N.   | CONDITIONS :   | Status   |
|--------|--|--|
|        | 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.  | Six monthly compliance report is being sent to MoEF. Last report was submitted vide letter no. PDR/HSE/HC/MOEFCC/2021-22/002 dated 29.11.2021  |
| (viii) | 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.  | Paradip Refinery regularly submitting the Environment Statement in September. Environment Statement for FY 2020-21 submitted on 27.09.2021 vide ref no. PDR/HSE/Env-S/2021-22  |
| (ix)   | 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 and at <a href="https://parivesh.nic.in/">https://parivesh.nic.in/</a> . 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. | Advertisement placed in two newspapers (One is "The Samaja" and other is "The Times of India")<br><br> |
| (x)    | 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.   | Noted for compliance   |
| (xi)   | This Environmental clearance is granted subject to final outcome of Hon'ble Supreme Court of India, Hon'ble High Court, Hon'ble NGT and any other Court of Law, if any, as may be applicable to this project.  | Noted  |
| 23     | The ministry reserves the right to stipulate   | Noted  |



## IOCL, Paradip Refinery cum Petrochemicals Complex

Subject: EC CRZ - Compliance Status Report

| S.N. | CONDITIONS :  | Status |
|------|---|--------|
|      | additional conditions, if found necessary at subsequent stages and the project proponent shall implement all the siad conditions in a time bound manner. The ministry may revoke or suspend the environmental clearance, if implementation of any of the condition is not found satisfactory. |        |
| 24   | Concealing factual data or submission of false/ fabricated data and failure to comply with any conditions mentioned above may result in withdrawal of this clearance and attract action under the provision of Environment (Protection) Act , 1986.   | Noted  |



**Sub: Compliance Status for Environment Clearance of Grass Root Petroleum Refinery for processing 9.0 MMTPA crude including LPG dispatch facility and associated marine facilities, namely SPM, jetty and crude product pipeline at Abhayachandrapur, District Jagatsinghpur, Orissa of M/s Indian oil Corporation Ltd (Letter F.No.J-11011/26/97-1A II (I) dated Dec 24, 1997)**

Note: The project was deferred as withdrawal of tax incentives from Govt. of Orissa and viability of the project affected. Later on the capacity is revised to 15 MMTPA for improving economic viability after agreement with Govt. of Orissa on tax incentives. Accordingly, DFR prepared with revised project details and EC obtained in 2007 (F.No. J-11011/70/2007-IA. II (I)).

| S. NO.    | CONDITION  | STATUS   |
|-----------|--|--|
| <b>A.</b> | <b>SPECIFIC CONDITIONS:</b>  |  |
| i.        | The total land earmarked for refinery involves around 70 acres of forest land. Diversion of forest land and any construction work in forest area shall not be taken up till forestry clearance is obtained under Forest (Conservation) Act, 1980.  | Complied<br><br>Forest clearance attached as <b>Annexure-14</b> .  |
| ii.       | The total SO <sub>2</sub> emission from the refinery shall not exceed 1000 kg/hr (max.). The gaseous emission from various process units including IGCC unit should conform to the standards prescribed under Environment (Protection) Rules, 86 or norms stipulated by the SPCB whichever is more stringent. At no time, the emission level should go beyond the stipulated standards. In the event of failure of pollution control system (s) adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency. | Complied with<br><br>SO <sub>2</sub> emission in kg/hr being calculated on monthly basis.<br><br>Stack Report attached as <b>Annexure-2</b> . Sulphur Balance attached as <b>Annexure-6</b> .  |
| iii.      | Sulphur Recovery Units with more than 99% efficiency shall be provided.  | Sulphur Recovery Units with overall efficiency of >99% has been commissioned.  |
| iv.       | A minimum of 7 ambient air quality monitoring stations (SO <sub>2</sub> , NO <sub>x</sub> and HC) should be set up in the refinery area in consultation with SPCB, based on occurrence of maximum ground level concentration and down wind direction of wind as well as in the direction of Betelvine plantations. The monitoring network must be decided based on modelling exercise to represent short term GLCs. In addition, a mobile van with adequate facilities to monitor ambient air quality outside the refinery premises should be provided.                                      | 7 nos. of Ambient Air Quality Monitoring (AAQM) stations were set up based on the modelling exercise conducted under the Comprehensive EIA Study<br><br>Continuous monitoring in all the 7 monitoring station already implemented. On-line data transmission to OSPCB/CPCB server is already done. A dedicated mobile ambient air quality monitoring van is in place for monitoring of ambient air quality.<br><br>Ambient Air quality monitoring report attached as <b>Annexure-5</b> |
| v.        | Data on ambient air quality and stack emissions as well as fugitive emissions of HC from product storage tank yard, crude oil tanks etc. must be regularly monitored and submitted to CPCB/SPCB regularly once in 3 months and to Ministry (Regional Office, Bhubaneswar) once in 6 months.  | Being Complied<br><br>Ambient Air quality attached as <b>Annexure-5</b><br>Stack Report attached as <b>Annexure-2</b><br>Fugitive emission in tankage area is enclosed as <b>Annexure-4</b> .  |



| S. NO. | CONDITION  | STATUS  |
|--------|--|---|
| vi.    | Liquid effluents generated from the refinery should be treated comprehensively to conform to the load based standards and concentration limits prescribed under EPA rules.   | State-of-the-art effluent treatment plant has been commissioned to treat industrial effluent as well as domestic sewage with maximum recycle facility.<br>Balance treated effluent confirming to prescribed limits is being discharged to the sea through a pipeline of about 3 km from low tide line.<br>Treated effluent quality report attached as <b>Annexure-8</b> .   |
| vii.   | In consultation with SPCB, adequate number of influent and effluent quality monitoring stations have to be planned. As recommended by NIO and approved by SPCB, the treated effluent shall be discharged at a distance of 3 km from the low tide line into the sea. The process effluent generated and discharged shall not exceed 8400 m <sup>3</sup> /day by incorporating maximum recycling and water conservation measures as per EMP. Regular monitoring of the effluent (Industrial/domestic and others) quality should be carried out and monitored data submitted quarterly to CPCB/SPCB and half yearly to Ministry (Regional Office, Bhubaneswar). | ETP Treated effluent after recycle is being discharged to the sea through a pipeline of about 3 km from low tide line.<br>Treated effluent quality and flow are regularly monitored. On-line data transmission to OSPCB/CPCB server is already being done.<br>Treated effluent quality report attached as <b>Annexure-8</b> .<br>Treated Effluent Flow data attached as <b>Annexure-8</b> .   |
| viii.  | Guard ponds of sufficient holding capacity should be provided to contain the effluent during process disturbances and or ETP failure. The concerned units must be shut down in cases of effluent quality exceeding prescribed limits.  | Complied<br>ETP Treated water is stored in separate ponds and in case of any upset, the same can be reprocessed again in ETP till the quality complies with prescribed limits.  |
| ix.    | Detailed Risk Analysis of the Refinery and associated facilities must be done once the engg. design and layout is frozen. Based on this, on-site and off-site emergency preparedness plan must be prepared. Approval from the nodal agency must be obtained before commissioning the project.  | Complied<br>Paradip Refinery fully implemented all the conditions stipulated in EIA and Risk Assessment reports.<br><br>Complied with.<br>On-site and off-site preparedness plan of Paradip Refinery is in place.<br><br>Emergency Response and Disaster management Plan (ERDMP) has been approved by MoP&G<br><br>On-site emergency plan is approved by Director of Factories and Boiler.<br><br>Off-site plan is incorporated in District Emergency Plan. |
| x.     | The project involves displacement of around 584 people. The R&R of project affected population shall be carried out as per the State Govt. guidelines prepared in consultation with the affected people. It is the responsibility of the State Govt. and Project Authority to see that adequate compensation and relief are provided to the affected population in a time bound fashion as per   | Complied  |



| S. NO.    | CONDITION   | STATUS  |
|-----------|---|---|
|           | agreed norms. IOC also must consider adopting certain villages in the area and contribute to peripheral developments. A progress report on the R&R must be submitted to Ministry (Regional office), Bhubaneswar every 6 months.   |   |
| xi.       | The dredging of Jatadhar Mohan River mouth for meeting the requirement of fill material (for raising the level of project site) as recommended by NIO and State Govt. must be conducted with no disturbance to the sand bars and it must be ensured that the dredging is done within the LTLs from either side of river bank. For this IOC must firm up the scheme of dredging in consultation with NIO. Also, NIO must monitor the river/creek ecology including quality of water on a continuous/regular basis. | Complied  |
| xii.      | IOC and State Govt. must strictly ensure that the guidelines and regulations contained in the approved CZMP of Orissa are adhered to w.r.t. Santra Creek, Jatadhar Mohan River, sea front and other surface water streams, if any, while taking up project related activities including Refinery, LPG storage, marine facilities laying of crude/product pipelines etc. All the conditions stipulated by the Odisha Coastal Zone Management Authority (OCZMA) shall be complied with.                             | Complied.   |
| xiii.     | A drainage pattern study of the region has to be carried out in view of large scale land-filling involved. As informed by IOC, the study has already been initiated by Water Resources Department, Government of Orissa. The study report must be submitted to the Ministry for its review. IOC must implement the action plans and recommendations in order to mitigate adverse impacts on the drainage aspects of the region.   | Complied.   |
| xiv.      | The laying of submarine pipelines to the SPM should avoid the season when Ridley turtles frequent the coast.  | Complied<br>Point was taken care. No construction work was done during the breeding season of olive Ridley turtles. |
| xv.       | An oil spill contingency plan must be drawn up by IOC in consultation with Coast Guard to combat any oil spills around SPM, before commencement of operations. A copy of the plan must be submitted to the Ministry.  | Complied<br>Oil spill contingency plan for SPM facility is in place.  |
| xvi.      | The marine facilities including SPM, jetty etc. must be provided with full-fledged firefighting set up etc. as prescribed by the competent authority dealing with such port establishments.   | Complied.   |
| <b>B.</b> | <b>GENERAL CONDITIONS:</b>  |   |



| S. NO.    | CONDITION  | STATUS  |
|-----------|--|---|
| i.        | The Ministry reserves the right to revoke the clearance if conditions stipulated are not implemented to the satisfaction of the Ministry.  | Noted   |
| ii.       | The above stipulations would be enforced among others under the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act, 1986, the Public Liability (Insurance) Act, 1991, the Coastal zone regulation Notification of February 1991 and amendments thereof.          | Noted   |
| <b>C.</b> | <b>ANNEXURE-I Conditions</b>   |   |
| 1.        | The project authorities must strictly adhere to the stipulations made by the State Government and the State Pollution Control Board.   | Noted for compliance  |
| 2.        | No expansion or modification of the project can be undertaken without prior approval of the Ministry.  | Noted for compliance  |
| 3.        | In case of deviations or alterations in the project proposed from those submitted to this Ministry for clearance, a fresh reference should be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any   | Noted for Compliance  |
| 4.        | The project authorities must strictly comply with the rules and regulations under Manufacture, Storage and Import of Hazardous Chemicals Rules 1989 as amended on 3 <sup>rd</sup> October 1994. Prior approvals from Chief Inspectorate of Factories, Chief Controller of Explosives, Fire Safety Inspectorate etc. must be obtained.                        | Complied<br>All required licenses obtained from Competent Authorities.  |
| 5.        | The project authorities must strictly comply with the rules and regulations with regard to handling and disposal of hazardous wastes in accordance with the Hazardous Wastes (Management and Handling) Rules, 1989. Authorization from the State Pollution Control Board must be obtained for collections/ treatment/ storage/ disposal of hazardous wastes. | Complied<br>HW authorization obtained from OSPCB vide Ref no. IND-IV-HW-930/5028 dated 24-05-2019 with a validity till 31-03-2024                                   |
| 6.        | Occupational Health Surveillance programme should be undertaken as regular exercise for all employees, specifically for those engaged in handling hazardous substances.  | Complied with.<br>Report attached as <b>Annexure-10</b> .   |
| 7.        | The green belt of adequate width and density should be developed using native plant species, within and around plant premises in consultation with State Forest Department. A norm of 2000-2500 plants per   | Complied with<br>Greenbelt has been developed in an area of 580 acres with the help of Orissa Forest Development Corporation Ltd. (OFDCL). 5,87,000 trees have been |



| S. NO. | CONDITION   | STATUS   |
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|        | ha. may be followed. As indicated in the EMPs supplementary data, a minimum of 580 acres shall be brought under green belt.   | planted around the refinery area and approx. Approx. 50682 trees have been planted in the township.<br>Every year also, Paradip Refinery is doing plantation in and around Refinery. Till date approximately >9 Lac trees have been planted.                                     |
| 8.     | A separate environmental management cell equipped with full-fledged laboratory facilities must be set up to carry out the environmental management and monitoring functions.  | Complied<br>Dedicated Environment Management Cell headed by Chief General Manager-HSE exists in the Refinery to take care of all the environmental issues along with a dedicated Environmental monitoring laboratory to take care of all the environmental monitoring functions. |
| 9.     | Adequate financial provision should be made for time bound implementation of environment management plan and other measures. The funds earmarked for the environmental management and safeguard measures should not be diverted for other purposes and details giving year wise and itemise expenditure must be reported to the Ministry. | Being complied   |
| 10.    | The implementation of the project vis-à-vis environmental action plans will be monitored by Ministry's Regional Office at Bhubaneswar / State Pollution Control Board / Central pollution Control Board. A six-monthly compliance status report should be submitted to monitoring agencies.   | Being complied   |