



28/PT/EC/20
14th Dec-2020

The Research Officer
Ministry of Environment, Forest and Climate Change
Regional Office (Southern Zone)
4th Floor, E&F Wings, Kendriya Sadan
Koramangala
Bangalore – 560 034

Dear Sir/ Madam

Sub: Compliance Report on the conditions laid down by the Ministry of Environment, Forest and Climate Change for the BS VI quality upgradation and new MS block project of BPCL Kochi Refinery, Ambalamugal, Kochi.

Ref: (i) MoEF&CC letter no: J- 11011/43/2016 –IA II (I) dated 20th October 2016 granting Environmental Clearance.
(ii) BPCL letter no: KR.PROJTECH.MSBP.MOEFCC.28 dated 5th July 2019

Please find attached the six monthly compliance report submitted for the period 1st April 2020 to 30th Sep 2020 on various conditions laid down by Ministry of Environment, Forest and Climate Change vide Ref (i).

Thanking You,

Very truly yours
For **BPCL Kochi Refinery**


Ramanathan S. 14/12/20
General Manager (Project Technical)

- Cc: 1. The Member Secretary
Central Pollution Control Board
Parivesh Bhavaner
East Arjun Nagar
Delhi – 110 032
2. The Member Secretary
Kerala State Pollution Control Board
Plamoodu Junction
Pattom Palace
Thiruvananthapuram – 695 004
3. The Environmental Engineer
Kerala State Pollution Control Board
District Office 2, Perumbavoor, Ernakulam

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REPORT ON THE STATUS OF COMPLIANCE OF STIPULATED ENVIRONMENTAL CONDITIONS -BS VI QUALITY UPGADATION AND MS BLOCK PROJECT

OF BPCL KOCHI REFINERY - PERIOD 1ST APRIL 2020 TO 30TH SEPTEMBER 2020

S.No. as per Env.Ltr.No.J-11011/43/2016-IA II (I), Dtd.:22/10/16	COMMENTS	COMPLIANCE STATUS
SPECIFIC CONDITIONS:		
i	M/s BPCL shall comply with new standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R. 186(E) dated 18 th March, 2008.	The project/facilities is under construction stage.Mechanical completion of the unit is expected in the last quarter of 2020-21.BPCL-KR will comply with new standards/norms for Oil Refinery Industry notified under the Environment (Protection) Rules, 1986 vide G.S.R. 186(E) dated 18 th March, 2008.
ii	Continuous on –line stack monitoring for SO ₂ ,NOX and CO of all the stack shall be carried out.	Online monitoring of SO ₂ , NOX and CO for 2 new stacks is incorporated in design . All stack monitoring analysers will be put online during commissioning of the unit expected in last quarter of 2020-21.
iii	The process emissions {SO ₂ , NOX, HC (Methane & Non-methane)}, VOCs and Benzene from various units shall conform to the standards prescribed under the Environment (Protection) Act. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system(s) adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted untill the desired efficiency of the pollution control device has been achieved.	Measurement and detection devices for HC, H2S etc provided in plant area. In the event of emissions beyond permissible levels, the unit shall be immediately put out of operation and shall not be restarted untill root cause is identified and attended.
iv	Leak Detection and Repair programme shall be prepared and Implemented to control HC/VOC emissions. Focus shall be given to prevent fugitive emissions for which preventive maintenance of pumps, valves, pipelines are required. Proper maintenance of mechanical seals of pumps and valves shall be given. A preventive maintenance schedule for each unit shall be prepared and adhered to. Fugitive emissions of HC from product storage tank yards etc. must be regularly monitored. Sensors for detecting HC leakage shall be provided at strategic locations.	A list of all potential HC/VOC emission points like flanges, valve gland, pump seal etc in MSBP has been identified. Leak Detection and repair program to detect and control HC/VOC emissions shall commence once units are commissioned.Present outlook for Mechanical completion of MSBP units is last quarter of 2020-21. A well defined preventive maintenance schedule for pumps, valves, pipelines as being practised in our running plants will be implemented for MSBP at the operation phase.Gas detectors at strategic locations has been included in design and installed.

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v	<p>SO2 emissions after expansion from the plant shall not exceed 1579 kg/hr and further efforts shall be made for reduction of SO2 load through use of low sulphur fuel. Sulphur recovery units shall be installed for control of H2S emissions. The overall sulphur recovery efficiency of Sulphur recovery unit with tail gas treating shall not be less than 99.9%</p>	<p>Sulphur rich offgases from new project units shall be treated in the existing Sulphur recovery units. BPCL-KR will comply to the SO2 emission limit of 1579 Kg/Hr. New GT and HRSG envisaged in project proposal has been dropped during detailed engineering stage based on steam and power optimisation. Power requirement is planned to be drawn from the state grid. One of the stack is therefore eliminated. Process heaters have been designed for LNG firing. LNG firing provision to MSBP heater is being provided and thereby looking to further reduce SO2 emission.</p>
vi	<p>As proposed, record of sulphur balance shall be maintained at the Refinery as part of the environmental data on regular basis. The basic component of sulphur balance include sulphur input through feed (sulphur content in crude oil), sulphur output from Refinery through products, byproduct (elemental sulphur), atmospheric emissions etc.</p>	<p>Sulphur balance will be updated including new facilities coming as part of MSBP, post commissioning of units.</p>
vii	<p>Flare gas recovery system shall be installed.</p>	<p>New Flare system was proposed in the project report. However, based on inputs from selected Process Licensor, mitigated flare load is found to be less. Hence Flare load from MSBP will be connected to existing flare system. A Flare gas recovery system is commissioned as part of the Integrated Refinery Expansion Project (IREP). This has been communicated to MoEF&CC vide letter dated 11th December 2018 and 5th July 2019. The letters were appended with the last half yearly compliance report.</p>
viii	<p>Ambient air quality monitoring stations (PM10, PM2.5, SO2, NOX, H2S, mercaptan, non-methane-HC and Benzene) shall be set up in the complex in consultation with Kerala State Pollution Control Board (KSPCB), based on occurrence of maximum ground level concentration and down-wind direction of wind. The monitoring network must be decided based on modeling exercise to represent short term GLCs.</p>	<p>6 nos of AAQMS are already installed at different locations inside refinery premises and are online monitored by PCB. KSPCB visited BPCL-KR to identify additional requirement of AAQMS as part of MSBP and recommended that 2 manual sample points would be sufficient in addition to 6 No's of existing AAQMS. The same was updated in the MSBP plot plan and sent to KSPCB, Trivandrum for approval. KSPCB vide letter ref PCB/HO/HWM/416/90 dated 20/01/2020 provided their consent. The said letter was appended with the last half yearly compliance report. An Annual Rate Contract is in place for carrying out sampling and analysis of ambient air quality within refinery.</p>

ix	Total water requirement from River Periyar after implementation of IREP and BS VI project shall not exceed 1372.2 m ³ /hr and prior permission shall be obtained from the competent authority.	Total fresh water requirement for MSBP will be 125M ³ /hr. Govt. of Kerala has given approval for drawing maximum of 3083.3m ³ /hr water from river Periyar. The total fresh water requirement for BPCL KR post MSBP will be limited within 3083.3 m ³ /hr. The number 1372.2 M ³ /hr seems to have come in place of 3083.3M ³ /hr as an error in the Environmental Clearance Letter. This was intimated to MoEF&CC along with minor design changes in detailed engineering phase. Letter in this regard has been submitted to MoEF&CC dated 11th December 2018 and 5th July 2019. Received acknowledgement from MoEF&CC dated 11.9.2019 and it is attached herewith.
x	As proposed, Industrial effluent generation shall not exceed 5.6 m ³ /hr from proposed expansion and treated in the effluent treatment plant. Treated effluent shall be recycled/reused within the factory premises. Domestic sewage shall be treated in sewage treatment plant (STP).	All effluent generated shall be treated in the existing refinery ETP. There will be no treated effluent discharge from MSBP complex. Piping connections have already been completed. Domestic sewage will be treated in existing STP in the refinery.
xi	Oil catchers/oil traps shall be provided at all possible locations in rain/storm water drainage system inside the factory premises.	Closed drainage system is provided for tank drains. Oil catchers with traps provided in oil water sewer system.
GENERAL CONDITIONS:		
i	The project authorities must strictly adhere to the stipulations made by the Kerala State Pollution Control Board (KSPCB), State Government and any other statutory authority.	Mechanical completion of the units is expected by last quarter of 2020-21. BPCL-KR will adhere to the stipulations made by KSPCB, State Govt and other statutory bodies
ii	No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment and Forests. In case of deviations or alterations in the project proposal from those submitted to this Ministry for clearance, a fresh reference shall be made to the Ministry to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.	Fresh reference on minor design changes during detailed engineering phase is intimated to MoEF&CC. Fresh reference on minor changes in the EC has been communicated to MoEF&CC vide letter dated 11th December 2018 and 5th July 2019. Received acknowledgement from MoEF&CC dated 11.9.2019 and is attached herewith.
iii	The locations of ambient air quality monitoring stations shall be decided in consultation with the KSPCB and it shall be ensured that at least one station is installed in the upwind and downwind direction as well as where maximum ground level concentrations are anticipated.	6 nos of AAQMS are already installed at different locations inside refinery premises and are online monitored by PCB. KSPCB visited BPCL-KR to identify additional requirement of AAQMS as part of MSBP and recommended that 2 manual sample points would be sufficient in addition to 6 No's of existing AAQMS. The same was updated in the MSBP plot plan and sent to KSPCB, Trivandrum for approval. KSPCB vide letter ref PCB/HO/HWM/416/90 dated 20/01/2020 provided their consent. The said letter was appended with the last half yearly compliance report. An Annual Rate Contract is in place for carrying out sampling and analysis of ambient air quality within refinery.

iv	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)	Sound engineering practice is incorporated in the design to limit noise levels at the fence as prescribed under EPA rules. Equipment selection has been done taking into consideration of restricting noise levels to acceptable limits. Continuous operation of plants and facility is yet to commence. The facility is under construction stage.
v	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	Facilities are made for diverting rain water from roof tops to recharge ground water.
vi	During transfer of materials, spillages shall be avoided and garland drains be constructed to avoid mixing of accidental spillages with domestic wastewater and storm water rains.	Drains are constructed for each unit and separate storm water drain is constructed outside unit periphery in order to avoid mixing of accidental spillages with storm water.
vii	Usage of Personnel Protection Equipments by all employees/ workers shall be ensured.	Usage of PPE's within plant area is already enforced in BPCL KR.
viii	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.	BPCL-KR conducts periodic training on health, safety and environment to cover all employees. Pre-employment and routine periodical medical examinations are also undertaken.
ix	The company shall also comply with the environmental protection measures and safeguards proposed in the project report submitted to the Ministry. All the recommendations made in the EIA/EMP in respect of environmental management, risk mitigation measures and public hearing relating to the project shall be implemented.	All recommendations of EIA study are complied. Construction phase- following mitigation measures have been implemented: 1) Water sprinkling in construction site and nearby roads to control dust, 2) Vehicle speed control, 3) Temporary DG sets provided with acoustic enclosures and exhaust mufflers. Operation phase- Facilities for detection and monitoring of emissions are under installation and will be taken into operation prior to MSBP commissioning, expected during last quarter of 2020-2021. As part of Environmental Management Plan, additional saplings are planted to increase green cover, facilities for rain water harvesting are made and sampling stations are added for monitoring air quality. Provisions made for processing all effluents in existing ETP.

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x	The company shall undertake CSR activities and all relevant measures for improving the socio-economic conditions of the surrounding area.	BPCL undertakes CSR activities every year as per Govt guidelines. Following additional activities are carried out during construction phase to improve socio-economic condition of area near to project site are 1)Improving condition of nearby public roads, 2)Drinking water pipeline extension to benefit nearby community, 3) Reflective mirrors in turnings of nearby roads to prevent accidents, 4) Amount deposited to Kerala State Electricity Board for enhancing height of distribution cables/ routing cables underground to benefit nearby community, 5) Grocery and vegetable kits supplied to families in the vicinity during COVID-19 lockdown period, 6) Insurance scheme to local public is in place. The company carries out CSR activities in the areas of health, education and infrastructure development in nearby locations. Implementation of ESC activities under recently concluded IREP project and ongoing PDPP projects are currently underway.
xi	The company shall undertake eco-development measures including community welfare measures in the project area for the overall improvement of the environment.	As part of eco-development, BPCL is in the process of acquiring around 52 acres of land in the eastern side of MSBP site to be utilised as green cover. Part of this 52 acres have already been purchased. MSBP project in itself is an eco development measure as the auto fuel quality will comply with BS-VI standards. Sulphur in MS will reduce from 50 ppm to 10 ppm with resulting reduction in vehicular pollution. Community welfare measures are undertaken by BPCL on a consistent basis as detailed above.
xii	A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.	BPCL-KR is having a separate Environment Management cell to carry out environmental management and monitoring functions. BPCL-KR also has well equipped Centralised Quality Control Laboratory. The same facility will be utilised for MSBP.
xiii	The company shall earmark sufficient funds for recurring cost per annum to implement the conditions stipulated by the Ministry of Environmental and Forests 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.	Industrial and domestic effluents from MSBP are planned to treat in existing treatment Plants. Incremental cost for yearly operation has been budgeted. Also cost provision already provided for pollution monitoring devices like stack monitoring, manual sampling locations etc. Inputs for LDAR programme will be in place once units are commissioned.
xiv	A copy of the clearance letter shall be sent by the project proponent to concerned Panchayat, ZilaParisad/Municipal Corporation, Urban local Body and the local NGO, if any, from who suggestions/representations, if any, were received while processing the proposal.	BPCL-KR has complied with this condition.

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xv	<p>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, the respective Zonal Office of CPCB and the Kerala State Pollution Control Board. A copy of Environmental Clearance and six monthly compliance status report shall be posted on the website of the company.</p>	<p>Six monthly compliance reports will be submitted during December (for period April-September) and during June (for period October to March). The same will be sent to the Regional office of MOEF&CC and also uploaded in the website of BPCL.</p>
xvi	<p>The environmental statement for each financial year ending 31st March in Form-V as is mandated shall be submitted to the Keala 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 Bhopal Regional Offices of MOEF by e-mail.</p>	<p>Environmental statement for the Refinery is submitted annually. Post MSBP commissioning, Environmental statement shall be updated with inclusion of MSBP facilities</p>
xvii	<p>The project proponent shall inform the public that the project has been accorded environmental clearance by the Ministry and copies of the clearance letter are available with the SPCB/Committee and may also be seen at Website of the Ministry at http://envfor.nic.in. This shall be advertised within seven days from the date of issue of the clearance letter, at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same shall be forwarded to the concerned Regional Office of the Ministry.</p>	<p>BPCL-KR has complied with this condition.</p>
xviii	<p>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.</p>	<p>The Board approval for the MSBP project was obtained on 24.02.2016. The date of start of project is considered from the Environmental clearance on 20th October 2016.</p>

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Annexure

भारत पेट्रोलियम कॉर्पोरेशन लिमिटेड
Kochi Refinery



BHARAT PETROLEUM CORPORATION LIMITED
Kochi Refinery

KR PROJTECH.MSBP.MOEFCC.28
5th July 2019

To
The Member Secretary (Industry-II)
Ministry of Environment, Forest and Climate Change (MoEFCC)
Indira Gandhi Paryavaran Bhavan, Jorhagh Road
New Delhi 110003

श्री. आर. अनुमान द्वारा प्राप्त किया
Received by CR
11/09/19

Dear Sir,

Sub: BS VI Quality Fuel Upgradation and a new MS block comprising of NHT, NSU, LNISM, CCR and associated facilities at Kochi refinery, village - Ambalamugal, Tehsil Kunnathunad, District Ernakulum, Kerala by M/s Bharat Petroleum Corporation Limited; Changes subsequent to grant of Environmental Clearance.

Ref: Ministry of Environment, Forest and Climate Change (MoEF&CC) letter number: J-11011/43/2016-IA II(I) dated 20th October 2016 granting Environmental Clearance for the BS VI Motor Spirit Block Project at Kochi.

Ministry of Environment, Forest and Climate Change (MoEFCC) vide the reference letter number: J-11011/43/2016-IA II (I) dated 20th October 2016 had accorded Environmental Clearance (EC) for the BS VI Motor Spirit Block Project (MSBP) of BPCL Kochi Refinery. Subsequently the project facilities has been optimized based on interaction with Process Licensor and further detailing of the project. The configuration of the process units, offsite facilities and utilities were reviewed in line with specific condition of the EC to limit the SO₂ emission level and take additional efforts for further reduction of emissions. Copy of the EC is attached as Annexure-I.

The optimization of the project facilities has resulted in minor changes to the facilities proposed in the MSBP from what was mentioned in our project proposal while applying for the Environmental Clearance. You may kindly note that the above changes will not impact the pollution loads and overall emission levels will continue to be well within the limit (i.e. 1579 kg/hr) prescribed by MoEFCC in the EC conditions.

As per MoEFCC notification S.O. 5518 (E) dated 23rd November, 2016 under point no. 7(ii) (b), the project proponent shall inform the Ministry of Environment, Forest and Climate Change (MoEFCC), if there is any change in configuration of the plant after detailed engineering. BPCL takes this opportunity to appraise MoEFCC that during detail engineering there has been changes in configuration of the project viz a viz submitted during EC. Proposed changes along with justifications is attached as Annexure II.

We request you to kindly accept our proposal for amendment in Environmental Clearance.

Thanking you.

Very Truly Yours
For Bharat Petroleum Corporation Limited - Kochi Refinery

Sreeram A.N
General Manager (Project Technical)

Annexure-II

Changes proposed in Project Facilities viz a viz EC granted

Sl.No:	Description	As per proposal submitted to MoEFCC	Changes Proposed	Justification for the proposed changes
1	Total fresh water requirement for the Refinery (Clause 3.0 and A(ix) of EC)	Fresh water intake to refinery on implementation of MSBP project is 1372.2 m ³ /hr.	Fresh water requirement for the MSBP project is 142m ³ /hr. and total fresh water requirement for the Refinery post MSBP is 3083 m ³ /hr.	The breakup of raw water requirement for the Refinery as submitted along with EC application are 28 MLD for old Refinery complex, 33 MLD for IREP complex, 9.6 MLD for PDPP complex and 3.4 MLD for MSBP, totaling to 74 MLD (3083.3 m ³ /hr.). Government of Kerala has already given consent to BPCL Kochi Refinery for drawing 74 MLD water from Periyar River. Kindly refer Cl: 2.2 of the attached Appendix-I, which was submitted as part of application for EC.
2	Flare gas recovery system shall be installed(Clause A(vii) of EC)	Flare gas recovery system shall be installed	New flare was considered in the original proposal. During detailed engineering stage, it was found that new flare is not required and hence flare gas recovery system to be exempted.	Based on flare mitigation study conducted by UOP/EIL, flare load of MSBP can be taken care by existing DHDS flare. Hence DHDS flare with minor modifications is proposed for MSBP. Flare gas recovery system is already provided as part of the Integrated Refinery Expansion Project.

Changes in Project Facilities for information

Sl No:	Description	As per proposal submitted to MoEFCC	Changes Proposed	Justification for the proposed changes
3	Source of power	New Gas Turbine of 34.5 MW with Heat Recovery Steam Generator (HRSG) of 110 TPH capacity	Estimated power consumption has come down based on licensors inputs and it was decided to avoid new GT/HRSG	The total power and steam requirement was reviewed and optimized further to the Pre-feasibility stage after ascertaining the requirements of licensed units. The power requirement for MSBP is only 25.4 MW and same shall be sourced from state grid. GT/HRSG stack is eliminated.

			and source power from State grid. A new 220 KV double bus Gas Insulated Substation (GIS) within plant with high power carrying and fault withstanding ratings is proposed to strengthen the power infrastructure facility inside the Refinery.	
4	Intermediate storage tanks	New tank for isomerate feed	New tank is not required	Existing tanks YT 500, 502 A/B shall be converted to isomerate feed service.
5	Plot plan for MSBP	Total area 7 acres within existing Refinery complex	Area remain same. However, plot plan optimized	The plot plan has undergone minor changes due to optimization of equipment layout based on the basic engineering package developed by M/s UOP as well as detailed engineering done by LSTK contractors. Revised plot plan enclosed.

Sreeram
Sreeram A.N.
General Manager (Project Technical)