

PART-II
STATUS OF COMPLIANCE
&
PART-III
DETAILED MONITORING REPORT
J-11011/7/2004-IA II (I) dated 09.08.2004

(A) Specific Conditions

(i)	The company shall ensure strict implementation / compliance to the stipulations made by MOEF vide OM no. J-11001/60/2000-IA-II dated 9th April, 2001 for expansion of Panipat Refinery from 6 MMTPA to 12 MMTPA	Being Complied. It was observed that the conditions laid down in EC dated 09.04.2001 are being complied.
(ii)	The gaseous emissions (SO ₂ , NO _x and HC, Benzene) from the various process units should conform to the standards prescribed under Environment (Protection) Rules, 1986 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 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.	Being Complied. Emission from the stacks is being monitored online and also from Haryana Test House on quarterly basis. 45 nos. of stacks are online connected with parameters such as SO _x , NO _x , CO, PM. Gaseous emission from various process units meets the prescribed standards.
(iii)	Adequate ambient air quality monitoring stations, (SPM, SO ₂ , NO _x and HC, Benzene) should 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 modeling exercise to represent short term GLCs. Continuous on-line stack monitoring equipment should be installed for measurement of SO ₂ and NO _x . Data on VOC should be monitored and submitted to the SPCB / Ministry.	Being Complied. It was observed that total 8 nos. of Continuous Ambient Air Quality Monitoring Stations – CAAQMS (2 in Panipat city, 1 in Refinery township, 3 in Refinery and 2 in Panipat Naphtha Cracker and polishing pond area) are in operation. These were set up in consultation with HSPCB. Also, one mobile van for ambient air quality monitoring was in place. For all major stacks (45 nos.) SO ₂ , NO _x analyzers are available and linked with CPCB server. Fugitive emission monitoring for hydrocarbon and benzene is being done regularly through approved MoEF/HSPCB approved agency regularly on quarterly basis.
(iv)	Fugitive emission of HC from product storage tank yard, crude oil tanks etc. must be regularly monitored. Sensors for detecting HC leakage should also be provided at strategic locations.	Being Complied. Fugitive emission monitoring for hydrocarbon and benzene for product storage tanks and crude oil storage tanks is being done through Haryana Test House on quarterly basis. Furthermore, 750 hydrocarbon detectors and 237 H ₂ S detector have been provided at strategic locations.
(v)	The company shall also ensure that the total SO ₂ emissions from the Panipat Refinery after expansion shall not exceed i.e. 1000 kg/hr. The company shall install an additional	Being Complied. It was submitted by the PA that total SO ₂ emission of Panipat Refinery remains in the range of 900-1000 kg/hr. On the contrary, as per submitted data, it was found

	Sulphur Recovery Unit (225 MT/day capacity) with 99.9% efficiency and the entire gas generated should be amine treated to reduce the SO ₂ emissions level from the Refinery.	marginally higher than the 1000 kg/hr for March 2017. PA was directed to take corrective action to bring the emission level below the prescribed standard. Further, PA informed that 5th SRU having a capacity of 225 MT/day with design efficiency of 99.9% has been installed recently and currently is in operation. With this, Panipat Refinery has 5 nos. Sulphur Recovery Units (SRU) as detailed below : <ul style="list-style-type: none"> - 2x115 MT/day capacity (99 % efficiency) - 3x225 MT/day capacity (99.9 % efficiency)
(vi)	As per the commitment given, there should be zero effluent discharge due to the proposed expansion. The company should ensure that there will be no discharge of treated effluent into Thirana Drain and the treated effluent from the refinery is not discharged along with the treated effluent from PX-PTA plant. The entire treated waste water should be recycled for reuse in the plant operation and greenbelt development so as to maintain zero discharge. Further, the liquid effluent generated from the Refinery should be treated comprehensively to conform to the load based standards and concentration limits prescribed under Environment (Protection) Act, 1986 Rules.	Being Complied. It was submitted that there is no discharge of treated effluent from Refinery into Thirana drain. ETP-1 & ETP-2 treated effluent meets Minimum National Standards. These treated effluent are completely re-used as a feed to RO plant and as a makeup to cooling towers. Further, a part of PTA-ETP treated effluent re-used as a makeup to Cooling Towers. The balance is being used for irrigation in greenbelts. The treated effluent quality of all above three ETPs meets the load based standards and concentration limits.
(vii)	The IOCL shall ensure installation of continuous flow measurement devices so that only the permitted quantity of treated effluent from PX-PTA plant (255 m ³ /hr) is discharged. Further, IOCL shall make all efforts to recycle and reuse the treated effluent from PX-PTA plant after commencing of the unit.	Being Complied. Flow meters were installed at the time of setting up PTA-ETP. A part of PTA-ETP treated effluent is being re-used as a makeup to cooling towers. Remaining is being used for irrigation in greenbelts.
(viii)	Additional water requirement shall not exceed 400 m ³ /hr. The total quantity of effluent generation should not exceed 1280 m ³ /hr as indicated in the Environment Management Plan. The treated effluent should be reused/ recycled to achieve zero discharge.	Being Complied. Discrepancy was noticed from the records in the quantity of fresh water consumption. It is submitted that presently fresh water consumption of the Refinery is 1800-1950 m ³ /hr and total effluent generation remains less than 1100 m ³ /hr. On the contrary, as per submitted record, total 2545 m ³ /hr of fresh water is being used. However, PA has submitted that total allowable withdrawal of fresh water as per previous EC was 3000 m ³ /hr, which was further added by 400 m ³ /hr. Overall total allowable water quantity is 3400 m ³ /hr. PA was directed to clarify the matter before EAC during presentation.
(ix)	Greenbelt of adequate width and density should be provided to mitigate the effects of	Being Complied. It was observed that the greenbelt of adequate width and density has

	fugitive emissions all around the plant. The bio-sludge from the ETP should be used as manure in the greenbelt development. Company shall develop greenbelt in consultation with DFO as per CPCB guidelines.	been developed in consultation with District Forest Department. Further, it was submitted by the PA that: <ul style="list-style-type: none"> - As on March 2017, a Greenbelt having more than 5 lacks surviving trees has been developed since 1998. Out of these, 1016 trees were planted in year FY 2016-17. - Total area under greenbelt is 395 Hectare including area of Eco-park of 127.80 hectare and other plantation zones in township, roadside & plant areas.
(x)	The IOCL shall make efforts to sell petroleum coke (0.9 MMTPA) to organized industries having consent from the concerned State Pollution Control Board. Further, the Pet-coke from the Delayed Coker Unit should be conveyed to storage area by pipe conveyer system. The company should ensure to prevent seepage in Pet-coke stockpile / storage area to prevent soil and ground water pollution.	Being Complied. It was informed by the PA that Pet-coke is being sold by the separate IOCL Division (Marketing). It was further, submitted that total Pet-coke dispatched through marketing division was 890989.450 MT against the 918889.000 MT produced by Panipat Refinery during FY 2016-17.
(xi)	The oily sludge generated from the refinery operation should be subjected to melting pit treatment for recovery of oil. The recovered oil should be recycled. The residual oily sludge should be disposed off in the HDPE lined pits.	Being Complied. It was submitted that the raw oily sludge generated from the Refinery is subjected to Melting Pit treatment for recovery of oil. The recovered oil is recycled back with crude oil for processing. Further, following steps are being used for the treatment and disposal of the sludge: <ul style="list-style-type: none"> - The residual sludge is disposed off through Bio-remediation. - Part of the sludge is processed in Coker unit. - There are 4 nos. lined pits available for storing residual oily sludge.
(xii)	The company should adopt mounded storage for LPG. The project authorities shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP and risk analysis report.	Being Complied. It was observed that 4 Mounted Bullets (total capacity of 11492 m ³) for LPG are in operation. Thus, condition is considered as Complied for the present visit.
(xiii)	Occupational Health Surveillance of the workers should done on a regular basis and records maintained as per the Factories Act.	Being Complied. Around 2300 workers are currently working in the Refinery. It was observed that the Refinery has a full-fledged Occupational Health Centre (OHC) in operation. The OHC carries out health surveillance of the workers on a regular basis and records are being maintained.

(C) General Conditions

(i)	The project authorities must strictly adhere to the stipulations made by the Haryana	Noted and Agreed by the PA as submitted. Consent to Operate under Water and Air Act
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	State Pollution Control Board and the State Government.	has been renewed, which is valid upto 30/09/2021.
(ii)	No further expansion or modernization in the plant should be carried out without prior approval of the Ministry of Environment & Forests.	Noted and Agreed by the PA as submitted.
(iii)	At no time, the emissions should go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the units, the respective unit should be immediately put out of operation and should not be restarted until the desired efficiency has been achieved.	Noted and Agreed by the PA as submitted.
(iv)	The overall noise levels in and around plant area should be kept well within the standards (85 dBA) by providing noise control measures including acoustic hoods, silencers, enclosures etc. on all sources of noise generation. The ambient noise levels should conform to the standards prescribed under EPA Rules, 1989 viz 75 dBA (day time) and 70 dBA (night time).	Being Complied. It was submitted that the Refinery has provided silencers on compressor discharge, acoustic leggings on turbo generators & ejector and acoustic chambers at the burners. Ambient air and noise level monitoring is being carried out at project site quarterly. Copy of latest reports show parameters within limits. Thus, condition is considered as Complied for the present visit.
(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.	Being Complied. PA informed that they have developed a secured land fill (SLF) site within the premises. Approximately 200 MT HW sent to SLF in FY 2016-2017, as submitted by the PA. PA was directed to submit the details of the same along with the compliance report from now on. Further, renewal of Authorization for Hazardous Wastes from HSPCB has been obtained, which is valid upto 30.09.2021.
(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 Waste (Management & Handling) Rules, 2003. Authorization from the State Pollution Control Board must be obtained for collections / treatment / storage / disposal of hazardous waste.	Noted and Agreed by the PA as submitted. As mentioned above in point no. (v).
(vii)	The project authorities will provide adequate funds both recurring and non-recurring to implement the conditions stipulated by the Ministry of Environment and Forests as well as the State Government along with the implementation schedule for all the conditions stipulated herein. The funds so provided should not be diverted for any other purposes.	Being Complied: It was informed that adequate funds (around Rs. 225 Crore) have been provided to implement conditions stipulated by the MoEFCC. However, details on recurring and non-recurring funds were not provided. PA has been asked to inform the Physical and financial progress of the implementation of Environment Management Plans in the following proforma:-

		S. N.	Items	Expenditure details till date (in Rs.)		Proposed budget estimates for next two years (in Rs.)	
				Recur ring	Non-recur ring	Recur ring	Non-Recurri ng
		a.	Air Pollution Control Measures				
		b.	Water Pollution Control				
		c.	Noise Pollution control measures				
		d.	Monitoring				
		e.	Rain Water harvesting				
		f.	Greenbelt				
		g.	Fire Management				
		h.	Miscellaneous				
			Total				
(viii)	The stipulated conditions will be monitored by the Regional of this Ministry at Chandigarh / Central Pollution Control Board. A six monthly compliance report and the monitored data should be submitted to them regularly.	Being Complied. Six monthly compliance report is being submitted regularly by the PA, however without Monitoring data. PA was directed to submit the same along with the six monthly compliance report from now on.					
(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 http://www.envfor.nic.in . This should be advertised within seven days from the date of issue of the clearance letter at least in two local newspapers that are widely circulated in the region of which one shall be in the vernacular language of the locality concerned and a copy of the same should be forwarded to the Regional Office.	Being Complied: The environment clearance for the project namely Butene-1 has been advertised in newspapers namely 'The Indian Express' and 'The Sunday Tribune' on 14 th and 15 th of August, respectively. The clause of 'within the 7 days' is also followed.					
(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.	Being Complied. The date of financial closure of the project is 31st March of every year.					

Concluding Remarks:

1. Project Status:

IOCL is under expansion for BS-VI fuel quality up-gradation, capacity expansion of PX/PTA at Panipat Refinery. It was observed during the visit that construction work for the proposed expansion is in progress.

2. Chronology of events:

Letter Dated	Action
24.03.2017	: PA has requested Regional Office of the Ministry for issuance of certification.
11.04.2017	: RO requested for additional information w.r.t. issuance of certification.
29.06.2017	: Site Visit for the certified report of the status of the compliance of environmental safeguards in view of further expansion proposed by the PA.
05.07.2017	: Requisite information was submitted by PA.

3. Implementation of Conditions: It is evident from the above review that:

- Consent to Operate under Water and Air Act has been obtained, which is valid upto 30/09/2021.
- Majority of conditions of construction phase was complied whereas a few needs sincere efforts.
- Monitoring data of noise, air and water quality were not being submitted with the six monthly reports.
- Discrepancy was noticed from the records in the quantity of fresh water consumption.

4. Housekeeping: Overall it was found satisfactory.

5. Review w.r.f. to MOEFs letter dated 30.5.2012: The report was prepared after site visit on 29.06.17 and submission of the requisite information on 05.07.17.

6. With regards to issuance of show cause/closure notices: None, as submitted by the PA.

7. It is inferred that implementation of environmental safeguards have been found fairly satisfactory. Competent authority may like to consider the case for grant of extension of the existing EC.


Joint Director (S)