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F.No. IA-J-11011/332/2018- IA II(I)
Government of India
Ministry of Environment, Forest and Climate Change
(IA-II Section)

Indira Paryavaran Bhawan
Jorbagh Road, New Delhi - 3

Dated: 7th January, 2020

To

M/s Punjab Alkalies and Chemicals Ltd
Nangal-Una Road, Naya Nangal,
District Rupnagar (Punjab) – 140126
Email: environment@punjabalkalies.com

Sub: Expansion of Chlor Alkali Plant from 99000 TPA to 264000 TPA and establishment of Flaker Plant, Stable Bleaching Powder Plant, Hydrogen Peroxide Plant & Captive Power Plant at Naya Nangal, District Rupnagar (Punjab) by M/s Punjab Alkalies and Chemicals Ltd - Environmental Clearance - reg.

Sir,

This has reference to your proposal No. IA/PB/IND2/115253/2018 dated 31st August 2019, submitting the EIA/EMP report on the above subject matter.

2. The Ministry of Environment, Forest and Climate Change has examined the proposal for environmental clearance to the project for expansion of Chlor Alkali Plant from 99000 TPA to 264000 TPA and establishment of Flaker Plant, Stable Bleaching Powder Plant, Hydrogen Peroxide Plant & Captive Power Plant by M/s Punjab Alkalies and Chemicals Ltd in an area of 346408 sqm at Naya Nangal, District Rupnagar (Punjab).

3. The details of products and by-products are as under:

S.No.	Product/Plant	Capacity (TPA)		
		Existing	Proposed	Total
1	Caustic Soda Lye	99000	165000	264000
2	Hydrogen gas	277.2	462	739.2 Lakh/Nm ³
3	Caustic Soda Flakes*	---	66000	66000
4	Stable Bleaching Power*	---	33000	33000
5	Liquid Chlorine	87714	146190	2,33,904
6	Hydrogen Peroxide*	---	16500	16500
8	Captive Power Plant	---	75	75 MW
By-product				
1	Hydrochloric Acid	39600	66000	105600
2	Dilute Sulphuric Acid	2100	3500	5600
3	Sodium Hypo Chlorite	2000	4000	6000
*products not requiring EC				

4. Total land area available for the project is 346408 sqm. Industry will develop greenbelt in an area of 1,13,856 sqm covering 33 % of total project area. The estimated project cost is Rs. 1240 crores. Total capital cost earmarked towards environmental pollution control measures is Rs. 29.70 crores and the recurring cost (O&M) will be about Rs. 10.47 crores per annum. The project will provide employment for 1100 persons after expansion.

5. The Nangal Wildlife Sanctuary and its ESZ and the Nangal wetland are located at a distance of 2.6 km from the project site. Sutlej river flows at 2 km and Soan river flows at 4 km from the project site in East & West direction respectively.

6. Total water requirement is estimated to be 12,967 cum/day, proposed to be met from Irrigation Department, Government of Punjab.

Effluent of 1428 cum/day will be treated through existing ETP consisting of RO & MEE. Domestic effluent quantity of 108 cum/day will be disposed into sewage line. It is proposed to install sewage treatment plant (STP) for treatment. There will be no discharge of treated/untreated waste water from the unit, and thus ensuring Zero Liquid Discharge.

Power requirement after expansion will be 1,15,000 KVA proposed to be met from 75 MW Captive power plant (Coal + Biomass fuel like rice husk). Existing unit has one DG set of 1.5 MW capacity. Additionally, one DG set of 1 MW capacity will be set up with adequate stack height, as standby during power failure. Electrostatic precipitators (ESPs) with requisite fields as per CPCB norms will be installed to control the particulate emissions within the statutory limits.

7. The project/activities are covered under category A of item 4(d) 'Chlor-alkali industry' and 1 (d) 'Thermal Power Plants' of the Schedule to the Environment Impact Assessment Notification, 2006, and requires appraisal at central level by the sectoral Expert Appraisal Committee (EAC) in the Ministry.

8. Standard Terms of Reference (ToR) for the project was issued on 18th November 2018. Public hearing for the project has been conducted by the State Pollution Control Board on 5th July 2019 which was presided over by the Additional Deputy Commissioner. The main issues raised during the public hearing are related to safety measures, employment to local villagers, CSR & CER activities, air & water pollution control measures etc.

9. The proposal was considered by the Expert Appraisal Committee (Industry-2) in its meeting held on 23-25 October, 2019 in the Ministry, wherein the project proponent and their accredited consultant M/s Kadam Environmental Consultants presented the EIA/EMP report as per the ToR. The Committee found the EIA/EMP report complying with the ToR and recommended the project for grant of environmental clearance.

10. Based on the proposal submitted by the project proponent and recommendations of the EAC (Industry-2), Ministry of Environment, Forest and Climate change hereby accords environmental clearance to the project for **Expansion of Chlor Alkali Plant from 99000 TPA to 264000 TPA and establishment of Flaker Plant, Stable Bleaching Powder Plant, Hydrogen Peroxide Plant & Captive Power Plant by M/s Punjab Alkalies and Chemicals Ltd at Naya Nangal, District Rupnagar**

(Punjab), under the provisions of the EIA Notification, 2006, subject to the compliance of terms and conditions as under:-

A. Specific Conditions:

- (i) Solvent management shall be carried out as follows:
 - (a) Reactor shall be connected to chilled brine condenser system.
 - (b) Reactor and solvent handling pump shall have mechanical seals to prevent leakages.
 - (c) The condensers shall be provided with sufficient HTA and residence time so as to achieve more than 95% recovery.
 - (d) Solvents shall be stored in a separate space specified with all safety measures.
 - (e) Proper earthing shall be provided in all the electrical equipment wherever solvent handling is done.
 - (f) Entire plant shall be flame proof. The solvent storage tanks shall be provided with breather valve to prevent losses.
 - (g) All the solvent storage tanks shall be connected with vent condensers with chilled brine circulation.
- (ii) Industrial/trade effluent shall be segregated into High COD/TDS and Low COD/TDS effluent streams. High TDS/COD shall be passed through stripper followed by MEE and ATFD (agitated thin film drier). Low TDS effluent stream shall be treated in ETP/RO to meet the prescribed standards.

I. Statutory compliance

- (i) The project proponent shall obtain Consent to Establish / Operate under the provisions of Air (Prevention & Control of Pollution) Act, 1981 and the Water (Prevention & Control of Pollution) Act, 1974 from the concerned State Pollution Control Board/ Committee.
- (ii) The project proponent shall obtain authorization under the Hazardous and other Waste Management Rules, 2016 as amended from time to time.
- (iii) The Company shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals (MSIHC) Rules, 1989 as amended time to time. All transportation of Hazardous Chemicals shall be as per the Motor Vehicle Act (MVA), 1989.

II. Air quality monitoring and preservation

- (i) The project proponent shall install 24x7 continuous emission monitoring system at process stacks to monitor stack emission with respect to standards prescribed in Environment (Protection) Rules 1986 and connected to SPCB and CPCB online servers and calibrate these systems from time to time according to equipment supplier specification through labs recognised under Environment (Protection) Act, 1986 or NABL accredited laboratories.
- (ii) The project proponent shall monitor fugitive emissions in the plant premises at least once in every quarter through labs recognised under Environment (Protection) Act, 1986.
- (iii) The project proponent shall install system to carryout Ambient Air Quality monitoring for common/criterion parameters relevant to the main pollutants

released (e.g. PM₁₀ and PM_{2.5} in reference to PM emission, and SO₂ and NO_x in reference to SO₂ and NO_x emissions) within and outside the plant area at least at four locations (one within and three outside the plant area at an angle of 120° each), covering upwind and downwind directions.

- (iv) To control source and the fugitive emissions, suitable pollution control devices shall be installed to meet the prescribed norms and/or the NAAQS. Sulphur content should not exceed 0.5% in the coal for use in coal fired boilers to control particulate emissions within permissible limits (as applicable). The gaseous emissions shall be dispersed through stack of adequate height as per CPCB/SPCB guidelines.
- (v) Storage of raw materials, coal etc shall be either stored in silos or in covered areas to prevent dust pollution and other fugitive emissions.
- (vi) National Emission Standards for Organic Chemicals Manufacturing Industry issued by the Ministry vide G.S.R. 608(E) dated 21st July, 2010 and amended from time to time shall be followed.
- (vii) The National Ambient Air Quality Emission Standards issued by the Ministry vide G.S.R. No. 826(E) dated 16th November, 2009 shall be complied with.

III. Water quality monitoring and preservation

- (i) The project proponent shall provide 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
- (ii) As already committed by the project proponent, Zero Liquid Discharge shall be ensured and no waste/treated water shall be discharged outside the premises.
- (iii) Total fresh water requirement shall not exceed 11936 cum/day, proposed to be met from Irrigation Department, Government of Punjab. Prior permission in this regard shall be obtained from the concerned regulatory authority.
- (iv) Process effluent/any wastewater shall not be allowed to mix with storm water. The storm water from the premises shall be collected and discharged through a separate conveyance system.
- (v) The Company shall harvest rainwater from the roof tops of the buildings and storm water drains to recharge the ground water and utilize the same for different industrial operations within the plant.
- (vi) The DG sets shall be equipped with suitable pollution control devices and the adequate stack height so that the emissions are in conformity with the extant regulations and the guidelines in this regard.

IV. Noise monitoring and prevention

- (i) Acoustic enclosure shall be provided to DG set for controlling the noise pollution.
- (ii) 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.

- (iii) The ambient noise levels should conform to the standards prescribed under E(P)A Rules, 1986 viz. 75 dB(A) during day time and 70 dB(A) during night time.

V. Energy Conservation measures

- (i) The energy sources for lighting purposes shall preferably be LED based.

VI. Waste management

- (i) Hazardous chemicals shall be stored in tanks, tank farms, drums, carboys etc. Flame arresters shall be provided on tank farm and the solvent transfer through pumps.
- (ii) 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.
- (iii) The company shall undertake waste minimization measures as below:-
- (a) Metering and control of quantities of active ingredients to minimize waste.
 - (b) Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.
 - (c) Use of automated filling to minimize spillage.
 - (d) Use of Close Feed system into batch reactors.
 - (e) Venting equipment through vapour recovery system.
 - (f) Use of high pressure hoses for equipment clearing to reduce wastewater generation.

VII. Green Belt

- (i) 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.

VIII. Safety, Public hearing and Human health issues

- (i) Emergency preparedness plan based on the Hazard identification and Risk Assessment (HIRA) and Disaster Management Plan shall be implemented.
- (ii) 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.
- (iii) The PP shall provide Personal Protection Equipment (PPE) as per the norms of Factory Act.
- (iv) 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.
- (v) Provision shall be made for the housing of construction labour within the site with all necessary infrastructure and facilities such as fuel for cooking, mobile toilets, mobile STP, safe drinking water, medical health care, crèche etc. The housing may be in the form of temporary structures to be removed after the completion of the project.

- (vi) Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- (vii) There shall be adequate space inside the plant premises earmarked for parking of vehicles for raw materials and finished products, and no parking to be allowed outside on public places.

IX. Corporate Environment Responsibility

- (i) *As proposed, Rs.8 crores shall be allocated for Corporate Environment Responsibility (CER). The CER plan shall be implemented during the plant construction stage and before commissioning of the project.*
- (ii) The company shall have a well laid down environmental policy duly approved by the Board of Directors. The environmental policy should prescribe for standard operating procedures to have proper checks and balances and to bring into focus any infringements/deviation/violation of the environmental/forest/wildlife norms/conditions. The company shall have defined system of reporting infringements/deviation/violation of the environmental/forest/wildlife norms/conditions and/or shareholders/stake holders. The copy of the board resolution in this regard shall be submitted to the MoEF&CC as a part of six-monthly report.
- (iii) A separate Environmental Cell both at the project and company head quarter level, with qualified personnel shall be set up under the control of senior Executive, who will directly report to the head of the organization.
- (iv) Action plan for implementing EMP and environmental conditions along with responsibility matrix of the company shall be prepared and shall be duly approved by competent authority. The year wise funds earmarked for environmental protection measures shall be kept in separate account and not to be diverted for any other purpose. Year wise progress of implementation of action plan shall be reported to the Ministry/Regional Office along with the Six Monthly Compliance Report.
- (v) Self environmental audit shall be conducted annually. Every three years third party environmental audit shall be carried out.

X. Miscellaneous

- (i) The project proponent shall make public the environmental clearance granted for their project along with the environmental conditions and safeguards at their cost by prominently advertising it at least in two local newspapers of the District or State, of which one shall be in the vernacular language within seven days and in addition this shall also be displayed in the project proponent's website permanently.
- (ii) The copies of the environmental clearance shall be submitted by the project proponents to the Heads of local bodies, Panchayats and Municipal Bodies in addition to the relevant offices of the Government who in turn has to display the same for 30 days from the date of receipt.

- (iii) The project proponent shall upload the status of compliance of the stipulated environment clearance conditions, including results of monitored data on their website and update the same on half-yearly basis.
- (iv) The project proponent shall monitor the criteria pollutants level namely; PM₁₀, SO₂, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects and display the same at a convenient location for disclosure to the public and put on the website of the company.
- (v) The project proponent shall submit six-monthly reports on the status of the compliance of the stipulated environmental conditions on the website of the ministry of Environment, Forest and Climate Change at environment clearance portal.
- (vi) The project proponent shall submit the environmental statement for each financial year in Form-V to the concerned State Pollution Control Board as prescribed under the Environment (Protection) Rules, 1986, as amended subsequently and put on the website of the company.
- (vii) The project proponent 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, commencing the land development work and start of production operation by the project.
- (viii) The project authorities must strictly adhere to the stipulations made by the State Pollution Control Board and the State Government.
- (ix) The project proponent shall abide by all the commitments and recommendations made in the EIA/EMP report, commitment made during Public Hearing and also that during their presentation to the Expert Appraisal Committee.
- (x) No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change.
- (xi) The Regional Office of this Ministry shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation to the officer (s) of the Regional Office by furnishing the requisite data / information/monitoring reports.

11. The Ministry reserves the right to stipulate additional conditions, if found necessary at subsequent stages and the project proponent shall implement all the said conditions in a time bound manner. The Ministry may revoke or suspend the environmental clearance, if implementation of any of the above conditions is not found satisfactory.

12. Concealing factual data or submission of false/fabricated data and failure to comply with any of the conditions mentioned above may result in withdrawal of this clearance and attract action under the provisions of the Environment (Protection) Act, 1986.

13. Any appeal against this environmental 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.

14. The above conditions shall be enforced, *inter-alia* under the provisions of the Water (Prevention & Control of Pollution) Act, 1974, the Air (Prevention & Control of Pollution) Act, 1981, the Environment (Protection) Act, 1986, Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016 and the Public Liability Insurance Act, 1991 along with their amendments and Rules and any other orders passed by the Hon'ble Supreme Court of India / High Courts and any other Court of Law relating to the subject matter.

(डा. आर. बी. लाल) (Dr. R. B. Lal)
Scientist E

पदाध्यक्ष, पर्यावरण, वन और जलवायु परिवर्तन
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भारत सरकार, नई दिल्ली
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Copy to: -

1. The Deputy DGF (C), Ministry of Environment, Forest and Climate Change, Regional Office(NZ), Bays No. 24-25, Sector 31 A, Dakshin Marg, Chandigarh - 30
2. The Secretary, Department of Science, Technology and Environment, Government of Punjab, Chandigarh
3. The Member Secretary, Central Pollution Control Board, Parivesh Bhawan, CBD-cum-Office Complex, East Arjun Nagar, Delhi - 32
4. The Member Secretary, Punjab Pollution Control Board, Punjab Pollution Control Board, Vatavaran Bhawan, Nabha Road, Patiala
5. The District Collector, District Rupnagar (Punjab)
6. Guard File/Monitoring File/Website/Record File

(Dr. R. B. Lal)
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