

**STATE LEVEL ENVIRONMENT IMPACT ASSESSMENT AUTHORITY**  
**E-115, Nehru Colony, Haridwar Road, Dehradun (Uttarakhand)**

EC-51/10/ 265  
 March 16, 2010

REGD./AD

To,

**M/S Hindustan Zinc Ltd.**  
 "Pantnagar Silver Plant"  
 Plot No. 2, Sector-14,  
 Integrated Industrial Estate (IIE),  
 Pantnagar, US Nagar

**Sub.: Establishment of Silver refining plant for production of Refined Silver-500TPA at Plot No. 2, Sector-14, Integrated Industrial Estate (IIE), Pantnagar, US Nagar by M/S Hindustan Zinc Ltd., for Environmental Clearance, reg.**

Sir,

Kindly refer to your application no. nil dated 03.07.2009 seeking environmental clearance under the Environmental Impact Assessment Notification, 2006.

1. The State Level Expert Appraisal Committee (SEAC) has examined the proposal. It is noted that the proposal is for establishment of Silver refining unit for the production of Refined Silver-500TPA at Plot no. 2D, Sector-14, Integrated Industrial Estate, Pantnagar, US Nagar. Apart from product, Antimony Concentrate-1400TPA, Bismuth Concentrate-140TPA, Copper Matte-140TPA and Oxidation Slag-840TPA will also be produced as a by products. Major raw materials are Anode Slime and Dore Silver-2900TPA which will be procured from HZL's smelters and from open market. Other consumables are coke, soda, salt peter, nitric acid, ethylene, charcoal, sodium chloride, borax and LDO. The manufacturing process proposed by the project authority is Pyro-metallurgical refining of anode slime in furnaces and hydrometallurgical refining in electrolysis section. Noble furnace (1nos.) of 14MT/day capacity and Cupel furnace (2nos.) of 2.5MT/day will be installed for pyro-metallurgical process, which shall be fired by LDO. Induction furnaces (3nos.) of 0.6MT/day capacity will also be installed of melting purposes. Furnaces will be equipped with bag filters and emitted will through stack of 40 meter height. Fugitive emission shall be emitted through bag filters, scrubbing system and 30 meter stack. The unit also proposed to install DG set of 500KVA capacity with 20 meter stack height. The water requirement of the unit is 350 KLD including for cooling, process and domestic uses, which will be sourced from bore well. The wastewater generated from the process (7KLD) is proposed to be disposal through common effluent treatment plant (CETP) of IIE, Pantnagar. Domestic wastewater will be treated through appropriate capacity sewage treatment plant (STP). Treated water is proposed to be used for gardening/green belt development. Hazardous wastes will be generated by the tune of 235KL/year (waste oil and used oil) which will be stored and disposal safely as per rules. All the by products and recycle material will be transported to HZL's smelters or other registered recyclers for further recovery of metals. No disposable solid wastes will produced in the proposed unit.
2. The project activity is listed in schedule of the Environment Impact Assessment Notification 2006. The project activity is categorized under screening category-B. The committee examined the proposal and information submitted by the project authority and observed that the project is located in notified industrial area of Uttarakhand. Based on the nature and location specificity of the project, the committee decided to consider the project activity under B-2 category, and hence the unit does not require to go through public hearing/ consultation procedure.
3. **Based on the information submitted by project proponent and the recommendation of the State Level Expert Appraisal Committee (SEAC), the State Environment Impact Assessment Authority**



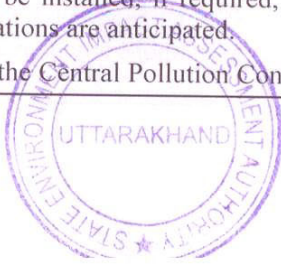
(SEIAA) hereby accords "Environment Clearance" for proposed activities subject to compliance of the following conditions.

#### A. SPECIFIC CONDITIONS:

1. Water requirement shall not exceed 350 KLD, which shall be sourced from the bore well. Wastewater from all the processes shall be taken to Common Effluent Treatment Plant (CETP) of IIE, Pantnagar, US Nagar. Domestic water shall be treated through appropriate capacity sewage treatment plant (STP). The treated water shall then be taken to lagoons from where it shall be utilized for cooling, flushing, gardening and green belt development. Cooling water shall be recirculated. No waste water shall be discharged outside the plant boundary and 'Zero Discharge' shall be strictly adhered to.
2. The unit shall install noble furnace (1nos.) of 14MT/day capacity, Cupel furnaces (2nos.) of 2.5MT/day capacity and induction furnaces (3nos.) of 0.6MT/day capacity with appropriate capacity fumes collection system, bag filters and stack height.
3. The project authority shall install LDO fired DG set of 500 KVA with acoustic enclosure and appropriate stack height.
4. The project authority shall be strictly maintained air emission /effluent discharge standards as per the rules.
5. Hazardous chemicals and hazardous wastes shall be stored /disposed as the Hazardous Waste (Management, Handling and Tranboundary) Rules 2008.
6. One-third of the total area of the project shall be developed as green belt with suitable species of plants as per the CPCB guidelines.
7. The project authority shall carry out regular ground water quality monitoring of the area, particularly for metal contents, at least two different locations. Permanent ambient air quality monitoring station shall also be installed in the premises to assess ambient air quality.
8. The project authority shall obtain 'Consent to Establish' and 'Consent to Operate' from the UEPPCB.
9. The project authority shall obtain the necessary permission/NOC from the respective regulatory authorities prior to operation of the unit.
10. The project authority shall submit the compliance report of Environment Clearance in every six months to the Authority.
11. The 'Environmental Clearance' is valid for silver refining process only.

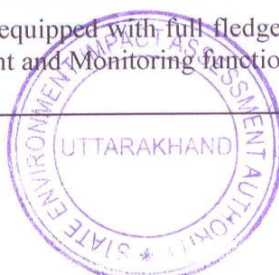
#### B. GENERAL CONDITIONS:

1. The project authorities shall strictly adhere to the stipulations made by the UEPPCB.
2. No further modifications or expansion shall be carried out without prior approval of the Competent Authority. In case of deviations or alterations in the project proposal from those submitted to this authority for clearance, a fresh reference shall be made to the authority to assess the adequacy of conditions imposed and to add additional environmental protection measures required, if any.
3. At no time, the emissions shall exceed the prescribed limits. In the event of failure of any pollution control system adopted by the unit, the unit shall be immediately put out of operation and shall not be restarted until the desired efficiency has been achieved.
4. The gaseous emissions (SOx, NOx, CO, VOC and HC) and particulate matter along with RSPM levels from various process units shall conform to the standards prescribed by the concerned authorities from time to time. At no time, the emission levels shall go beyond the stipulated standards. In the event of failure of pollution control system adopted by the unit, the respective unit shall not be restarted until the control measures are rectified to achieve the desired efficiency.
5. The locations of ambient air quality monitoring stations shall be reviewed in consultation with the UEPPCB and additional stations shall be installed, if required, in the downwind direction as well as where maximum ground level concentrations are anticipated.
6. The stacks of appropriate height as per the Central Pollution Control Board guidelines shall be provided

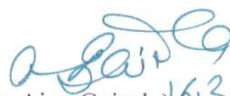


to control the emissions from various vents.

7. All liquid raw materials shall be stored in storage tanks and drums. Closed handling systems for chemicals and solvents will be provided. Magnetic seals shall be provided for pumps/agitators for reactors for reduction of fugitive emissions. Solvent traps shall be installed wherever necessary. Reactor generating solvent vapours will be connected to condensers with receivers.
8. All venting equipment shall have vapour recovery system. All the pumps and other equipments where there is a likelihood of HC leakages shall be provided with Leak Detection and Repair (LDAR) system and LEL indicators and Hydrocarbon detectors. Provision for immediate isolation of such equipment, in case of a leakage shall also be made. The company shall provide a well defined Leak Detection and Repair (LDAR) program for quantification and control of fugitive emissions. The detectors sensitivity shall be in ppm levels.
9. The company shall undertake following waste minimization measures.
  - Metering and control of quantities of active ingredients to minimize waste.
  - Reuse of by-products from the process as raw materials or as raw material substitutes in other processes.
  - Use of automated filling to minimize spillage.
  - Use of "Close Feed" system into batch reactors.
  - Venting equipment through vapour recovery system.
  - Use of high pressure hoses for equipment cleaning to reduce wastewater generation.
10. Fugitive emissions in the work zone environment, product and raw materials storage area shall be regularly monitored. The emissions shall conform to the limits imposed by the UEPPCB/Central Pollution Control Board. Dust / powder from the formulation process shall be collected by dust extractor.
11. The project authorities shall strictly comply with the rules and guidelines under Manufacture, Storage and Import of Hazardous Chemicals Rules, 1989 as amended in October, 1994 and January, 2000 and Hazardous Waste (Management and Handling) Rules, 1989, as amended from time to time. Authorization from the UEPPCB shall be obtained for collection, treatment, storage, and disposal of hazardous wastes. All Transportation of Hazardous Chemicals shall be as per the MV ACT, 1989.
12. 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 dB(A) (day time) and 70 dB(A) (night time).
13. Occupational health surveillance of the workers shall be carried out on a regular basis and records shall be maintained as per the Factories Act.
14. 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.
15. The Company shall harvest surface as well as rainwater from the rooftops of the buildings proposed in the expansion project and storm water drains to recharge the ground water and use the same water for the various activities of the project to conserve fresh water.
16. The project authority shall also comply with all the environmental protection measures and safeguards proposed in the EIA/EMP report. All the recommendations made in respect of environmental management and risk mitigation measures relating to the project shall be implemented.
17. The company will undertake all relevant measures for improving the socioeconomic conditions of the surrounding area. CSR activities will be undertaken by involving local villages and administration.
18. The company shall undertake eco-developmental measures including community welfare measures in the project area for the overall improvement of the environment.
19. A separate Environmental Management Cell equipped with full fledged laboratory facilities shall be set up to carry out the Environmental Management and Monitoring functions.



20. The Authority may revoke/suspend the environment Clearance if implementation of any of the condition is not satisfactory and also the Authority reserves the right to stipulate additional condition(s), if found necessary. The Project authority in a time bound manner will implement these conditions.
21. The stipulated conditions will be enforce, inter alia under the provisions of the Water (Prevention and Control of Pollution) Act 1974, the Air (Prevention and Control of Pollution) Act 1981, the Environment (Protection) Act 1986, Hazardous Waste (Management & Handling) Rules 2003/2008 and the Manufacture, Use & Import of Hazardous Chemical Rules 1989 and the Public Liability Insurance Act 1991, along with their amendment and rules.
22. The authority reserved the right to stipulate additional condition(s) if found necessary. The company in the time bound manner shall implement these conditions.
23. This Environment Clearance is valid for five year from the date of issue of Environment Clearance or commissioning of project, whichever is earlier. The project authority shall inform to the authority as well as UEPPCB, the date of start of the project and its completion.
24. The implementation of the project vis-a-vis environmental act shall be monitored by the team of the authority. A six monthly compliance status report shall be submitted to authority and shall be posted on the website of the company.
25. The Project authority shall inform the public that the project has been accorded the environment clearance by the authority and copies of the clearance letter are available with the UEPPCB may also be seen at website of the State Board. This shall be advertise within seven days from the date of issue of clearance letter, at least in two local news paper 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 SEIAA and UEPPCB.

  
 (Dr. Ajay Gairola) 16.3.10  
**Member Secretary**

Copy to following for kind information please:

1. Secretary, Environment and Forests, Govt of Uttarakhand, Dehradun.
2. Chairman, State Level Environment Impact Assessment Authority, Govt. of Uttarakhand, Dehradun.
3. Chairman, State Level Expert Appraisal Committee, Uttarakhand.
4. Principal Chief Conservator of Forests, Uttarakhand, 87, Rajpur Road, Dehradun, Uttarakhand.
5. Director, IA Division, Ministry of Environment & Forest, Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi - 110003.



**Member Secretary**