

F. No. J-11011/65/2008-IA II (I)
Government of India
Ministry of Environment, Forest and Climate Change
(I.A. Division)

Indira Paryavaran Bhawan
Jor Bagh Road, Aliganj,
New Delhi - 110003
E-mail: sharath.kr@gov.in

Dated: 12th April, 2017

To

**M/s National Aluminium Company Limited,
NALCO, Corporate Office, Nalco Bhavan,
P-1, Nayapalli, Bhubaneswar
Odisha**

Sub: Third phase expansion of Alumina Refinery (from 2.275 MTPA to 3.275 MTPA), by addition of 5th Stream in Alumina Refinery having capacity of 1.0 Million Tonne per Annum and expansion of steam cum co-generation Power Plant (92.5 MW to 111 MW) by adding from 18.5 MW co-generation Power Plant at Damanjodi Village, Koraput CD Block, Koraput district, Odisha by M/s National Aluminium Company Limited (NALCO) – Environmental Clearance regarding

Sir,

81/ This has reference to your online application No. IA/OR/IND/30479/2015 date of Submission 27th December, 2016, for third phase expansion of Alumina Refinery (from 2.275 MTPA to 3.275 MTPA), by addition of 5th Stream in Alumina Refinery having capacity of 1.0 Million Tonne per Annum and expansion of steam cum co-generation Power Plant (92.5 MW to 111 MW) by adding from 18.5 MW co-generation Power Plant, along with copies of EIA/EMP report seeking environmental clearance under the provisions of the EIA Notification, 2006 for the project mentioned above. The ToR's for the proposal were prescribed by MoEFCC vide letter No. F. No. J-11011/65/2008-IA II (I), dated 15th January, 2016 for the preparation of EIA-EMP report. The proposed project activity is listed at S.No. 3(b), under category 'A' of the Schedule of EIA Notification, 2006 and appraised at the Central level.

2. The project of M/s National Aluminium Company Limited (NALCO) (a Navratna PSU under administrative control of Ministry of Mines, Government of India) located in village Damanjodi, Pottangi Tehsil, Semiliguda block, District Koraput, Odisha is for setting up of a new stream (5th) to its existing 04 streams of Alumina refinery Plant for production of 1.0 Million Tonne Per Annum (MTPA) of Alumina (Both Hydrate & Calcined). The total alumina production capacity enhancement will be from 2.275 MTPA to 3.275 MTPA, after this proposed expansion. In this proposed expansion, 1 No. of 300 TPH boiler and 1 No. of 18.5 MW Turbo Generator shall also be added in existing Steam-Cum-Co-Generation Power Plant (SPP). The SPP capacity will be increased from 92.5 MW to 111 MW.

Third phase expansion of Alumina Refinery (from 2.275 MTPA to 3.275 MTPA), by addition of 5th Stream in Alumina Refinery having capacity of 1.0 Million Tonne per Annum and expansion of steam cum co-generation Power Plant (92.5 MW to 111 MW) by adding from 18.5 MW co-generation Power Plant 1

3. The total land required for the project is 25.09 Hectares, which falls in the existing Alumina Refinery Plant industry premises, on the land already under possession of Nalco. The present land use is basically built-up area for industrial purpose with greenbelt, raw water reservoir and solid waste processing and storage area. No river passes through the project area. **It has been reported that no water body exist around the project area and modification / diversion in the existing natural drainage pattern at any stage has not been proposed.**

4. The topography of the area is undulated and reported to lie between 18° 46' 24.4" N to 18° 45' 53.4" N Latitude and 82° 54' 09.1" E to 82° 54' 54.2" E Longitude in Survey of India topo sheet No. 65 J/13, 65 J/14, 65 N/1 and 65 N/2 at an elevation ranging from 900 m to 1,400 m above AMSL. The depth to water level during winter range from 2.35 m to 15.60 m below ground level and the average water level is 7.15 m. The reported depth to water during post-monsoon range from 1.05 m to 9.35 m below ground level and the average water level is 2.89 m. The average fluctuation between pre and post monsoon is estimated to be 4.75 m. The stage of ground water development in the study area is 10.53% and categorized as "Safe". The average stage of ground water development in Koraput, Dasamantapur, Semiliguda, Lakshampur and Narayanpatana blocks as per CGWB assessment is 14.26% and categorized as "Safe".

5. No national park, wildlife sanctuary, biosphere reserve, tiger reserve, elephant reserve etc. are reported to be located in the core and buffer zone of the project. The area also does not report to form corridor for Schedule-I fauna. The authenticated list of flora and fauna provided through District Forest Official is reporting presence of schedule-I fauna in the study area i.e. buffer zone.

84
The targeted production capacity of the proposed 5th stream alumina refinery is 1.0 MTPA. The ore for the plant i.e. bauxite, will be sourced from Nalco's own Panchpatmali Mines. The ore transportation will be done through overland conveyor belt from mines to refinery. **The water requirement of the project is estimated as 13700 m³/day.** Source of water for the refinery and power plant will be from upper Kolab reservoir. The power requirement of the project is estimated as 43 MW. The power requirement for alumina refinery plant shall be met from Steam-cum-Cogeneration Power Plant as well as from Nalco Captiva Power Plant at Angul through wheeling arrangement.

6. Ambient air quality monitoring has been carried out at 8 locations during 1st December 2015 to 29th February 2016. The study were carried out PM₁₀ (26.3 µg/m³ to 68.1 µg/m³), PM_{2.5} (13.2 µg/m³ to 40.1 µg/m³), SO₂ (8.2 µg/m³ to 21.7 µg/m³) and NO_x (10.1 µg/m³ to 33.6 µg/m³). The results of modelling study indicates that the maximum increase of GLC for the proposed project is 0.29 µg/m³ with respect to the PM₁₀, 4.37 µg/m³ with respect to the SO₂ and 2.70 µg/m³ with respect to the NO_x. **The project is proposed to be built within existing NALCO premises, which is already under industrial use. There will be no additional land acquisition for this expansion project.** No R&R is involved.

7. The major solid waste from the proposed expansion project will be red mud and fly ash. The red mud will be disposed in the existing specially constructed pond. The fly ash will be collected in dry form in silos and will be utilized to the maximum extent in brick making, cement making, low lying area filling, stone quarry area filling, road embankment, etc. Emergency provision will be kept for wet disposal of ash (both bottom & fly) in the existing ash pond. The organic portion of solid waste generated in the Sewage Treatment Plant (STP) will be used as manure in greenbelt development. **The proposed expansion about 11250 trees will be planted over an area of additional**

7.5 ha with a density of 1500 trees/ha to attenuate the noise levels and trap the dust generated due to the project development activities.

8. The Public hearing of the project was held on 28th September 2016 at NALCO HRD Centre auditorium, Damanjodi, Koraput District. The PH proceedings has been forwarded by MS-OSPCB to Ministry on 22/10/2016. The issues raised during public hearing are rehabilitation of affected people, employment, health, education, drinking water facilities, rehabilitation of widows and peripheral development. The detailed action plan against the issues raised in PH is elaborated in EIA report.

9. The capital cost of the project is Rs 4,357.20 Crores and the capital cost for environmental protection measures is proposed as Rs 235 Crores. The annual recurring cost towards the environmental protection measures is proposed as Rs 4.89 Crores. The break-up of cost against ESC component is indicated in the following table:

BUDGET BREAKUP OF ESC (Enterprise Social Commitment) ACTIVITIES						
Sl.No.	Main Activities	Amount in Crores	Phasing of expenditure year wise			
			2018	2019	2020	2021
1	Education to Children	5.00	0.50	2.00	2.00	0.50
	a. 100 nos. of additional class rooms					
2	Health and family welfare	22.50	2.25	9.00	9.00	2.25
	a. CT Scan machine for district HQ - Koraput					
	b. Ultrasound machine for Borigumha and Pottangi CHC					
	c. 400 nos. of Angnawadi center					
3	Infrastructural facility	79.74	7.97	31.90	31.90	7.97
	a. Construction culverts/bridges : 90 numbers in 83 villages					
	b. Construction of roads : 22 numbers in 22 villages					
	c. Construction of water bodies : 2 numbers at laxmipur					
	d. Construction of multipurpose conference hall at Kundra					
	e. Construction of drainage in Laxmipur Township					
4	Promotion of Sports and Socio-Cultural activities	0.25	0.02	0.10	0.10	0.03
	a. Construction of mini stadium at Narayanpatana					
	b. Construction of Kalayan Mandap/ kalayan Mandap cum multipurpose hall: 10 numbers in 10 villages					
5	Women Empowerment	0.30	0.03	0.12	0.12	0.03

Third phase expansion of Alumina Refinery (from 2.275 MTPA to 3.275 MTPA), by addition of 5th Stream in Alumina Refinery having capacity of 1.0 Million Tonne per Annum and expansion of steam cum co-generation Power Plant (92.5 MW to 111 MW) by adding from 18.5 MW co-generation Power Plant

	Imparting skill development and financial assistance to tribal women & widows					
6	Aids for differently abled people	0.21	0.02	0.08	0.08	0.03
	Distribution of assistive devices to differently abled persons					
TOTAL		108.00	10.79	43.20	43.20	10.81

10. The Ministry of Environment, Forest and Climate Change has considered the application based on the recommendations of the Expert Appraisal Committee (Industry-I) in its 15h meeting held during 2nd -3rd February 2017 and hereby decided to grant environmental clearance to the above mentioned third phase expansion of Alumina Refinery (from 2.275 MTPA to 3.275 MTPA), by addition of 5th Stream in Alumina Refinery having capacity of 1.0 Million Tonne per Annum and expansion of steam cum co-generation Power Plant (92.5 MW to 111 MW) by adding from 18.5 MW co-generation Power Plant of **M/s National Aluminium Company Limited (NALCO)**, under the provision of EIA Notification dated 14th September, 2006, as amended, **subject to strict compliance of the following Specific and General conditions:**

SPECIFIC CONDITIONS:

- i. The project proponent should install 24x7 air monitoring devices to monitor air emission, as provided by CPCB and submit report to Ministry and its Regional Office.
- ii. For the treatment of effluents generated in the proposed expansion project, the ETP shall be augmented with additional required/designed capacity within the 6 months.
- iii. API separator shall be installed by the PP to separate oil from the wastewater before the treatment in ETP.
- iv. Used oil, oil containing sludge and grease, filter and filter material containing oil should not be incinerated in the plant premises and should be sold to the authorized vendors.
- v. The power plant should meet prescribed emission standards as per MoEFCC Notification vide S.O.3305(E) dated 7th December 2015.
- vi. Electrostatic precipitator(s) shall be provided to kiln and boiler stacks to control gaseous emissions within 50 mg/Nm³. The height of the stacks shall be as per the CPCB guidelines. Gaseous emissions shall be regularly monitored and records maintained and reports submitted to this Ministry including its Regional Office as part of the compliance report.
- vii. The red mud generated from the project shall be stored in the red mud pond only designed as per the CPCB guidelines with proper leachate collection system and ground water all around the red mud disposal area shall be monitored regularly and report submitted to the Regional Office of the Ministry. Proper care shall be taken to ensure no run off or seepage from the red mud disposal site to natural drainage. Sewage sludge shall be used as manure within the premises.

- viii. The leachate collection for the existing and the proposed facility should be properly designed and no leachate should escape either into the ground water or outside the plant premises without treatment.
- ix. The present status of the existing red mud pond should be assessed and its capacity should be evaluated. A new site for red mud pond should be earmarked on the map and should be submitted along with the 6 monthly compliance report once the capacity of the existing red mud pond is exhausted.
- x. A plan for utilisation of red mud generated shall be implemented. Under the Plan, MOU with shall be signed with potential buyers including cement companies for supply of red mud.
- xi. All the fly ash generated from the Alumina Refinery shall be properly stored in ash storage pond and supplied to cement and brick manufacturers for further utilization. Ash pond created for the existing project shall be used for storage of ash for the expansion project. Ash shall be evacuated through HCSD.
- xii. Green belt shall be developed in 33% area to mitigate the effects of fugitive emissions as per the CPCB guidelines. Plant species form local area shall be selected in consultation with DFO for green belt development.
- xiii. All the recommendations made in the Charter on Corporate Responsibility for Environment Protection (CREP) for the Aluminium sector shall be strictly implemented.
- xiv. The gaseous emissions (PM10, PM2.5, SO2, NOX,) from various process units shall conform to the standards prescribed by the concerned authorities from time to time. The particulate emissions from the plant shall not exceed 50 mg/Nm3. At no time the emissions level should go beyond the prescribed standards. In the event of failure of any pollution control system adopted by the unit, the respective unit should not be restarted until the control measures are rectified to achieve the desired efficiency.
- 84 xv. In-plant control measures for checking fugitive emissions from spillage/raw materials handling etc. should be provided and particulate matter from Bauxite transport and crushing shall be provided with highly efficient bag filters and covered conveyers and adequate water sprinkling shall be done.
- xvi. The company shall construct separate RCC drains for carrying storm water inside the plant. Decanted water from red mud pond is collected in the Process Water Lake during the monsoon and the same water recycled back to the process through pumping arrangements.
- xvii. The plant will operate on a zero-discharge concept and all treated water shall be recycled and reused. No effluents shall be discharged outside the premises during the non-monsoon period and during the monsoon period water should be discharged only after proper treatment and meeting the norms of the SPCB/CPCB. There shall be separate drain for storm water/rainwater. The concrete drains shall be de-silted and regular supervision of the areas shall be carried out so that blocking of drains may be avoided for quick discharge of rainwater.

- xviii. An amount equal to Rs. 108.00 crore, shall be earmarked towards the Enterprise Social Commitment based on Public Hearing issues, locals need and item-wise details along with time bound action plan as indicated by the project proponent shall be implemented. Action taken report in this regard shall be submitted to the Ministry's Regional Office.
- xix. The new overland bauxite conveying system to transport bauxite from Central Block Sector -II and South Block mining lease be constructed simultaneously and completed in 48 months (project duration for expansion proposal)
- xx. All the hazardous waste shall be properly disposed of as per the Hazardous and Other Waste (Management and Transboundary Movement) Rules, 2016.
- xxi. The water drawl should not exceed the 8.42 MGD for the existing and the expansion project put together.
- xxii. Oil water separation system provided for the existing facility and to be provided for the proposed facility should meet the standards stipulated by SPCB/CPCB/MoEFCC.
- xxiii. All new ash ponds and the red mud ponds should be lined at the bottom with proper drainage and leachate collection facility.
- xxiv. The project proponent shall provide for solar light system for all common areas, street lights, villages, parking around project area and maintain the same regularly.
- xxv. The project proponent shall fully provide for LED lights in their offices and residential areas.
- 84 xxvi. 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.

B. GENERAL CONDITIONS:

- i. The project authorities must strictly adhere to the stipulations made by the Odisha Pollution Control Board and the State Government.
- ii. No further expansion or modifications in the plant shall be carried out without prior approval of the Ministry of Environment, Forests and Climate Change (MoEFCC).
- iii. At least four ambient air quality monitoring stations should be established in the downward direction as well as where maximum ground level concentration of PM10, PM2.5, SO2 and NOX are anticipated in consultation with the SPCB. Data on ambient air quality and stack emission shall be regularly submitted to this Ministry including its Regional Office at Nagpur and the SPCB/CPCB once in six months.
- iv. Industrial wastewater shall be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19th May, 1993 and 31st December, 1993 or as amended from time to time. The treated wastewater shall be utilized for plantation purpose.

- v. The overall noise levels in and around the plant area shall 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 E(P)A Rules, 1989 viz. 75 dBA (daytime) and 70 dBA (nighttime).
- vi. Occupational health surveillance of the workers shall be done on a regular basis and records maintained as per the Factories Act.
- vii. The company shall develop rain water harvesting structures to harvest the rain water for utilization in the lean season besides recharging the ground water table.
- viii. The project proponent shall also comply with all the environmental protection measures and safeguards recommended in the EIA/EMP report. Further, the company must undertake socio-economic development activities in the surrounding villages like community development programmes, educational programmes, drinking water supply and health care etc.
- ix. Requisite funds shall be earmarked towards capital cost and recurring cost/annum for environment pollution control measures to implement the conditions stipulated by the Ministry of Environment, Forest and Climate Change (MoEFCC) as well as the State Government. An implementation schedule for implementing all the conditions stipulated herein shall be submitted to the Regional Office of the Ministry at Nagpur. The funds so provided shall not be diverted for any other purpose.
- x. A copy of clearance letter shall be sent by the proponent to concerned Panchayat, Zila 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 web site of the company by the proponent.
- xi. The project proponent shall upload the status of compliance of the stipulated environment 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 the MOEFCC at Nagpur. The respective Zonal Office of CPCB and the SPCB. The criteria pollutant levels namely; PM₁₀, SO₂, NO_x (ambient levels as well as stack emissions) or critical sectoral parameters, indicated for the projects shall be monitored and displayed at a convenient location near the main gate of the company in the public domain.
- xii. The project proponent shall also submit six monthly reports on the status of the compliance of the stipulated environmental conditions including results of monitored data (both in hard copies as well as by e-mail) to the Regional Office of MOEFCC, the respective Zonal Office of CPCB and the SPCB. The Regional Office of this Ministry at Nagpur / CPCB / SPCB shall monitor the stipulated conditions.
- xiii. 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 environmental conditions and shall also be sent to the respective Regional Office of the MOEFCC at Bhubaneswar by e-mail.

- xiv. 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 and may also be seen at Website of the Ministry of Environment, Forests and Climate Change (MoEFCC) 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 should be forwarded to the Regional office at Nagpur.
- xv. 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 commencing the land development work.

11.0 The Ministry may revoke or suspend the clearance, if implementation of any of the above conditions is not satisfactory.

12.0 The Ministry reserves the right to stipulate additional conditions if found necessary. The Company in a time bound manner shall implement these conditions.

13.0 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.


(Sharath Kumar Pallerla)
Scientist 'F'

Copy to:-

1. Director, Environment cum Special Secretary, Department of Forest & Environment, Government of Odisha.
2. The Chairman, Central Pollution Control Board, Parivesh Bhavan, CBD-cum-Office Complex, East Arjun Nagar, New Delhi, 110 032.
3. The Chairman, Odisha State Pollution Control Board, Paribesh Bhavan, A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar -751012
4. Additional Principal Chief Conservator of Forests (C), Ministry of Environment, Forest and Climate Change, Regional Office (EZ), A/3, Chandersekharapur, Bhubaneswar – 751023
5. Guard File / Record File/Monitoring file.


(Sharath Kumar Pallerla)
Scientist 'F'