

**OPERATING GUIDELINES FOR PROCESSING OF
CONSENT TO ESTABLISH APPLICATION FOR
ESTABLISHMENT OF
COAL WASHERIES IN THE STATE OF ORISSA**



STATE POLLUTION CONTROL BOARD, ORISSA

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INTRODUCTION :

1. The State of Orissa has significant coal reserves. The majority of coal produced from Orissa is used for thermal power generation, production of sponge iron, steel aluminium etc. and other industrial purpose. Significant portion of the coal reserves are characterized by contaminants including high ash contents resulting in low-calorific value or high sulfur content resulting in unacceptable emission and impacts on human health.
2. Most of coal based power plants burn coal without any prior cleaning. However, production of environment friendly and affordable electricity with high ash coal or sulfur content necessitates coal beneficiation or washing prior to its utilization as an energy resource. Moreover, coal beneficiation/washing reduces the load on overburdened rail and road systems and reduces the need to import higher quality coal.
3. Use of washed coal for thermal power plants or sponge iron plants is considered as a cleaner technology initiative since it eliminates the redundant transportation of coal ash which accounts for about 10% of the total coal transported and at the same time, it results in reducing pollution at the users end i.e. coal based thermal power plants or sponge iron plants.
4. A notification was issued on 19th September 1997 by the Ministry of Environment & Forests, Govt. of India which makes it mandatory that power plants located at a distance of 1000 km. from the pit head and power plant located in urban area, sensitive area or critically polluted area irrespective of distance from the pit head shall use coal with ash content not exceeding 34%. In the meantime, Board has also made it mandatory for sponge iron plans to use washed coal with ash not exceeding 35% (Notification at Annexure-I).

5. Operation of coal washery on the other hand has its own environmental impact. It consumes about 40 m³/hr of fresh water as make up for 1 million ton plant. Since coal washeries likely to be installed in close proximity to the coal mining area, drawal of ground water for washing purpose may lower the level of ground water. At the same time, about 30 to 35% of the coal is generated as reject which may pose air and water pollution in the washery side.

In the above background, the following guidelines are issued for processing of consent to establish application for establishment of coal washeries in the State so that the coal washeries do not grow haphazardly and at the same time it matches the requirement for greater environment control in thermal power and steel sector.

GENERAL CRITERIA :

- i) Establishment of coal washery in the premises of sponge iron plant or integrated steel plant shall be allowed. While considering so, it must be ensured that the sponge iron plants or steel plants has FBC/CFBC boiler to consume the rejects generated from the washery and use it for power generation.
- ii) The washeries are generally found to be improperly managed as far as environment control is concerned, thus the minimum size of washery should be 1 million ton per annum where the coal processing can be done mechanically reducing human intervention.
- iii) Washery rejects were being dumped in open which was causing air and water pollution. The washery rejects and middlings should be used in FBC/AFBC boiler and power to be generated out of this. Further, it is made mandatory that the washeries should also establish a reject based power plant or should enter into agreement with the power generator who will use 100% of these rejects.

- iv) Establishment of coal washeries shall be discouraged far away from the mine pits. At the same time, the washeries shall not be allowed to use ground water for washing purpose. Washery is located/proposed to be located close to be mine pit should be encouraged to use the mine drainage water which is otherwise going as waste water and contaminating other water bodies.

TECHNOLOGY SELECTION :

While selecting technology for the washery, due consideration shall be given to the coal and water conservation. The technology should be such that the recovery of washed coal and middling, if any, shall be of such optimum level that the reject produced have minimum heat value and dumped or stacked as per environment management plan.

ENVIRONMENTAL STANDARD :

1. Fugitive emission standards.

The difference in the value of suspended particulate matter, delta (Δ), measured between 25 and 30 meter from the enclosure of coal crushing plant in the downward and leeward wind direction shall not exceed 150 microgram per cubic meter. Method of measurement shall be High Volume Sampling and Average flow rate, not less than 1.1 m³ per minute, using upwind downwind method of measurement.

2. Effluent discharge standards

- The coal washeries shall maintain the close circuit operation with zero effluent discharge.
- If in case due to some genuine problems like periodic cleaning of the system, heavy rainfall etc. it become necessary to discharge the effluent to sewer or land or stream then the effluent shall conform to the following standards at the final outlet of the coal washery.

Parameter	Limits
1. pH	5.5 – 9.0
2. Total Suspended Solids	100 mg/l
3. Oil and Grease	10 mg/l
4. BOD (3 days at 27oC)	30 mg/l
5. COD	250 mg/l
6. Phenolics	1.0 mg/l

3. Noise level standards

- Operational/Working zone – not to exceed 85 dB(A) Leq for 8 hours exposure.
- The ambient air quality standards in respect of noise as notified under Environment (Protection) Rules, 1986 shall be followed at the boundary line of the coal washery.

4. Code of practice for Coal Washery.

- Water or Water mixed chemical shall be sprayed at all strategic coal transfer points such as conveyors, loading/unloading points etc. As far as practically possible conveyors, transfer points etc. shall be provided with enclosures.
- The crushers/pulverisers of the coal washeries shall be provided with enclosures, fitted with suitable air pollution control measures and finally emitted through a stack of minimum height of 30 m. conforming particulate matter emission standard of 150 mg/Nm³ or provided with adequate water sprinkling arrangement.
- Water sprinkling by using fine atomizer nozzles arrangement shall be provided on the coal heaps and on around the crushers/pulverisers.
- Area, in and around the coal washery shall be pucca either asphalted or concreted.

- Water consumption in the coal washery shall not exceed 1.5 cubic meter per tone of coal.
- The efficiency of the settling ponds of the waste water treatment system of the coal washery shall not be less than 90%.
- Green belt shall be developed along the road side, coal handling plants, residential complex, office building and all around the boundary line of the coal washery.
- Storage bunkers, hoppers, rubber decks in chutes and centrifugal chutes shall be provided with proper rubber linings.
- Vehicles movement in the coal washery area shall be regulated effectively to avoid traffic congestion. High pressure horn shall be prohibited. Smoke emission from heavy duty vehicle operating in the coal washeries should conform the standards prescribed under Motor Vehicle Rules, 1989.

OTHER ENVIRONMENTAL CONDITIONS :

- **The proponent has to seek Environmental Clearance as per EIA notification 2006 or as recommended by EAC/SEAC for the coal washery. However, commencement of construction of coal washery shall be done after obtaining environmental clearance or as recommended by EIAA/SEIAA.**
- Industry shall provide rubberized impact idlers at belt transfer points and all the belt conveyors shall remain under cover.
- Industry shall provide pneumatic jig with spinning dust remover and rotary reversal blowing bag type dust collector for dust extraction.
- The industry shall conform to all the commitments made in the environment management plan incorporated in project report submitted along with NOC application.
- Industry shall provide garland drains around the plant boundary in order to prevent wash discharge going outside.
- Industry shall provide internal drains inside the plant for collection of accumulated water which shall be recirculated and reused.
- Under no circumstance the industry shall discharge wastewater to outside.

- Industry shall cover the primary impact zone by rubber sheet of 70 mm thickness and the secondary impact zone by 40 mm thickness in order to prevent noise pollution at the coal transfer points.
- Industry shall provide polymer sheet of 25 mm thickness at sides of the chutes in all transfer points to control noise pollution.
- Rain water harvesting shall be followed by utilizing the rain water collected from the roof of the administrative buildings for recharging of ground water within the premises as per the concept and practices prescribed by CPCB.
- A boundary wall of appropriate height shall be constructed along the periphery of the coal storage area to prevent the dust particles from being carried away with surface run off to nearby water bodies.
- The height of material within coal storage areas must be kept below the height of the boundary wall at all times to prevent the material getting air borne.
- Appropriate preventive measures shall be taken for control of fire hazards at the coal handling area.