CASE STUDY 10 : UTILIZING HAZARDOUS WASTE OIL AS ALTERNATE FUEL - VASAVADATTA CEMENT, SEDAM

Project Implemented by : Vasavadatta Cement, Sedam

Project Implemented in : 2008

Company Details

Vasavadatta Cement (VC) is a premier cement manufacturing unit founded in the year 1983. VC is product of BK Birla Group of Companies, Vasavadatta is an ISO 9001 Company. Vasavadatta Cement is producing Vasavadatta-43, Vasavadatta -53 and Birla Shakti (PPC) brand of Cement.

Project Details

Good amount of lubricating oil and grease is used in T.Gs, gear boxes etc at various machineries in cement plant. Thus producing used oil and grease as a waste/used material from the vehicular as well as from the machineries with in the industry

In VC, High performance MOx additive oils are used in critical gear boxes for longer life of oil. Waste oil and Grease is collected in barrels and stored at Hazardous waste storage platform (impervious) with compound wall and tin shed and collected grease is sold to authorized reprocessors and waste oil is burnt in the Kiln. VC had obtained permission/authorization for burning of waste oil in kiln.

Sr.No.	Calendar year	HW Category	Opening Balance (Tonne)	HW Generation, collection and Storage (Tonne)	Disposal or sold (Tonne)	Burnt in kiln (Tonne)	Closing Balance (Tonne)
1	2009	5.1 & 5.2	0	89.87	73.15	6.27	10.45
2	2010 as on Sept'10	5.1 & 3.3	10.45	62.89	27.55	34.58	11.21

Arrangement of Burning of waste oil system in Kiln

The waste oil so collected in barrels is transferred to waste oil day tank of capacity approximate 1000 lit situated at Kiln-1 area and for lifting of oil pump is provided. Waste oil firing nozzle of 6 mm size is put in burner pipe in addition to the coal firing oil is pumped through burner pipeline.

By utilizing this waste we can conserve natural fossil fuel (coal) to the extent, of heat available in used oil.

Capacity of waste oil burning is approximately 400 liters per hour (avg.) resulted in saving of coal approximately 2.5-3.0 tons per hour.

Issues faced during implementation

Waste oil produced is mixed oil with different viscosity in nature. Due to change in viscosity the following problems were faced:

1. The malfunctioning of pump
2. Due to high viscosity incomplete combustion of waste oil in the kiln.

To solve this problem waste oil with higher viscosity in nature is heated before pumping, so that, frees flow and no choking of pump and burner pipe.

Financing of the Project

The plant has invested about Rs 4.0 Lakhs for implementation of the project. This investment is for conveying, handling equipments and storage facilities. Implementation of project will result in Rs 2.8 Lakhs with payback period of 18 months

Results of the Project

- Reduction in cost & risk of disposal of waste oil (hazardous waste in nature)
- Decreasing in recycling of waste oil

Replication Potential

Replication potential is very high. Similar project is possible in several cement industries or in other areas where high temperature (1200 degrees) heating is required.

Burning of 1 lit of waste oil results in saving of 7.5 kgs of coal.

Recommendation to other units

All cement plants are recommended to install alternative fuel handling system.

Contact Information of the plant

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