SC ALUM SA TULCEA

Approved
General Director
PhD. Eng. Gheorghe DOBRA

Plan to perform activities regarding production, maintenance, repairs and investment during the year - 2015

For 2015 there were analyzed the production schedule and the requirements regarding the works, materials, personnel costs in order to achieve the production plan and maintenance work, factory arrangements, at each installation level.

There were set the specific consumptions and operating technological parameters for Sierra Leone bauxite.

Also for alumina production and raw materials specific consumptions optimization it is envisaged to continue the cooperation with research institutes from Romania and Russia (IMNR Bucharest, IPROLAM Bucharest, NIICEMENT Moscow)

A. Production and Mechanical & Electrical Departments

Considering all activities at a programmed production level for 2015, the plant number of employees was established at 680 (existing 697).

For the optimal production activity were carried out theoretical and practical training to all staff, both on-line training, and health and safety at work.

In the first quarter of 2015, 37 of Alum's employees graduated the courses of the school of foremen organized with the support of the Technical College "Henri Coanda" from Tulcea, in specialty thermal energetician technician and technologist foreman (chemical industry)

At present it is planned to continue and to organize new training courses for a number of activities such as: chemical operators, welders, crane operator, forklift driver for about 250 employees.

Work	Organization chart	Of which administrative personnel	Personnel activity
Production activity	**375**	**13**	Provides technical operations for the production of alumina
Mechanical & Electrical activity	**165**	**7**	Ensure the Maintenance and repair of equipment for the technological flow and participate at investments works
Transportation	**45**	**3**	Ensure the bauxite supply for grinding and also ensure the domestic transport needs. Rest of bauxite and alumina transport services being outsourced.
Planing	**15**	**10**	Provides production and repairs planning
Other activities	**97**	**54**	Auxiliaries and general services activities (commercial, financial, HR, IT, health and safety and environment, investment, laboratories)
TOTAL GENERAL	**697**	**87**	**Out of which 3 / 2 Administrative personnel for bauxite department**

B. Production Activity

For the year 2015 it was budget a level of production of 428,357 tones alumina, out of which 401,473 tones calcined alumina. Deliveries to Alro Slatina 371,538 tones calcined alumina. Shipping to export / others 30,000 tones alumina calcined. Other sales are in amount of 50,000 tons aluminum hydroxide.

There were established in the technological equipment used primarily in order to achieve the planned production. There were established the operating parameters for Sierra Leone (1,241,706 tons) bauxite processing.
There are made action plans for reducing specific consumption of bauxite, caustic and thermal energy.

Also it is considered the continuation of studies for finding ways to use red mud as raw material for other industrial activities (steel, construction, agriculture etc. ...).

It is taken into consideration the continuation of developing new products, for special applications, and increasing the amounts of these products in total production of Alum. The new products are : dry hydrate, calcined alumina containing alpha phase greater than 70%, low soda alumina.

Month	Calcined alumina production t/month	Alumina production t/month
Jan.	23,250	23,250
Feb	31,463	33,988
Mart.	34,778	37,304
April	33,943	36,468
May	35,150	37,675
Jun.	34,097	36,622
Jul.	35,150	37,675
Aug.	35,150	37,675
Sept.	34,097	36,622
Oct.	35,150	37,675
Nov.	34,097	36,622
Dec.	35,150	36,781
Total	401,473	428,357

C. Department Maintenance Repair Activities

C1. Maintenance and repair activities

Main activity of the Department of Maintenance and Repair is keeping in running the installation and repairing the equipments according the approved Plan for Revisions and Repairs.

The budget for these activities in 2015 has a value of **3,418,838 USD** out of which 1,244,881 USD represents repairs that will be performed by third companies, 1,990,561 USD represents repairs done in-house and 183,396 USD there are maintenace services.

Major repairs performed by third companies:

- Repairs of Caustification building – 27,916 USD
- Consolidation of concrete foundations – 111,667 USD
- Replacement of registers in digestion autoclaves – 186,111 USD
- Repair of electric motors and coolers – 152,598 USD
- Repair the turbo generator CKTR 12 – 186,111 USD
- Thermal insulations and tanks – 65,139 USD
- Repair the refractory for Static Kiln – 32,569 USD
- Repair the boiler C2Ap no 1 – 41,670 USD
- Repair the boiler C2Ap no 2, – 27,777 USD
- Reviews and repair of heavy vehicles – 104,808 USD
- Repair of turbines and compressors TK 250 – 26,986 USD
- Repairs for Grinding Mill no 5 – 23,264 USD
- Repairs hydro insulation of buildings – 38,132 USD

Major repairs performed with own forces:

- Repairs conveyor belts – 78,797 USD
- Repairs bauxite grinding mills (capital repair) – 181,590 USD
- Repairs on digestion batteries – 233,679 USD
- Repairs tanks DN 20 m – 18,832 USD
- Repairs tanks DN 35 m (major repairs) – 20,299 USD
- Repairs precipitation tanks – 26,763 USD
- Repairs alumina transport system – 15,566 USD
- Repairs on Static Calciner (1 repair) – 107,034 USD
- Repairs bag filters – 23,237 USD
- Repairs for Kelly Filters – 20,892 USD
- Repairs boilers and air compressors – 19,435 USD
- Repairs compressors – 47,461 USD
- Repairs pumps Red Filtration – 102,720 USD
- Repairs pumps Digestion – 146,753 USD
- Repairs pumps Grinding – 70,680 USD
- Repairs pumps White Filtration – 51,120 USD
- Repairs pumps Evaporation – 79,480 USD

C2. Investment activities implemented with own forces

Maintenance and Repair department also develops specific activities to achieve with own forces putting into operation of approved investment objectives.

Investments implemented with own forces

- Install plate heat exchangers battery for cooling the pregnant liquor in counter current with strong liquor recirculated in Grinding
- Install 2 spiral heat exchangers for cooling the hydrate slurry in Precipitation
- Extend the red mud wetting pipes network and red mud pumping pipes network at the red mud storage area

Maintenance and repair department personnel also participate in tracking and completion of the works of investments made by third companies and provide the conditions necessary for the function of these investments.

C3. Continuous Improvement Activities

Besides maintenance and repair works, alike the planned investment, the Maintenance and Repair department have activities in accordance with approved plans to continuously improve the ALUM's operation of the equipment and installations, works to reduce energy consumption (air, industrial water, air, energy Electric), works to reduce specific consumption of raw materials, work for environmental protection, continuing the implementation of the predictive maintenance in Alum.

Activities performed

- Replacement of the vacuum steam ejector with vacuum electro pump for evaporation facility
- Using the alkaline condensate resulted from the evaporator No.2 in order to heat up the condensate used for production hydrate washing
- Use the hot water resulted from flocculant preparation to wash the Kelly filters
- Chemical washes piping network extension at Red Filtration
- Gradual replacement of the stirring systems at red mud thickening tanks Dn 20 (in progress at the vessel 415/1)

D. Investments Activity

The investment plan for 2015 is in the amount of 2,345,000 USD.
Includes new investment projects need to be implemented for environmental compliance, reducing the specific consumption and to ensure the safe operation of Alum's facilities.

E. Budget proposed

The Alum's budget for 2015 provides total revenue of 169,554,949 USD from the sale calcined alumina and hydrate.
Total expenditure budgeted required for the production of 428,357 tons is 163,618,348 USD.
Thus, in 2015 Alum aims to achieve a gross profit of 5,936,602 USD.

Unit production costs are budgeted at 211.81 USD/ton of hydrate and 383.59 USD/ton for calcined alumina.

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