

# R.T. Patterson Company, Inc.

## Engineers and Consultants

### CLIENT

AWA - Jamalco  
Jamaica, West Indies

### PROJECT

North & South Manchester Mine Developing Projects

### PROJECT SCOPE

The project consisted of supplying bauxite to Jamalco's Alumina Refinery from the new South Manchester Mining Facilities by using a 2-mile long bauxite conveyor, driven and controlled by two 1000 HP motor regenerative power and control system.

### RTP SCOPE OF WORK

RTP provided installation engineering to supply 13.8 KV power to Jamalco's New Mine Facilities, from Jamaica's Power Services (JPS) 69 KV Substation. JPS' 69 KV Substation is located in the town of Toll Gate and Jamalco's Mine Facilities are located in South Manchester Parish, approximately 7 miles away. This project consisted of the following items:

- Design the new 69 KV Toll Gate Substation.
- Design the new 69 KV – 13.8 KV Substation located at Jamalco's existing bauxite loading facility (5 miles from the 69 KV Toll Gate Substation).
- Design the 69 KV distribution line from Toll Gate Substation to St. Jago Substation, 5 miles away.
- Design the 13.8 KV power supply feeders from the St. Jago Substation to Mine Facilities 13.8 KV substation, 2 mile long run. The 13.8 KV armored cable power feeders are installed on the top of the conveyor roof (*see picture*).



### RTP SCOPE OF WORK (Cont.)

- Design all protective relaying for the whole system.
- Design the control system to use some of the 1.5 MW conveyor regenerative power to supply power to Mine Facilities and sale the remainder to JPS.
- Design the 13.8 – 480 volt substations for three Water Booster Stations.
- Design a 4 mile long cable duct system for the 13.8 KV feeders to Water Booster Stations substations.
- Design the 480 volt power distribution and the 120/240 volt lighting and small power systems for all the amenity buildings.
- Equipment specifications, vendor drawings approval and bills of material.
- Electrical installation specifications
- Electrical construction management.

### AWARD

On 11-29-2012, the project was awarded by the Jamaica Institute of Engineers (JIE) the **Peoples Choice Award** 50 Best Engineering Project since Independence.

