

Method for automatically controlling a single-stage wet grinding cycle of magnetite ores involves stabilizing the ore feed rate into the ball mill at a set value, stabilizing the ore-to-water ratio in the ball mill at a set value, accounting for the transport time of the feed ore from the moment of its loading into the ball mill to the moment it approaches the classifier discharge, establishing a relationship between the strength of the ore feed and its iron content, and calculating the current ore strength. In addition, the size of the classifier discharge is controlled by adjusting the water flow to the spiral classifier chute so that, when the grade of the feed ore decreases below the target level, a control signal is sent from the grade comparison unit to the gate actuator. Thus the water flow to the spiral classifier trough is increased. When the strength of the ore feed increases in line with the target strength, a control signal is sent from the strength comparison unit to the gate actuator, thereby reducing the water flow to the spiral classifier trough.