

## Benefits

Following benefits will be obtained with an SVC and/or SVC Light for Steel Works:

Increased voltage level at the furnace bus

- shorter melting times
- increased steel production
- more balanced arc furnace currents
- extended electrode life
- extended life of ladle lining
- reduced energy losses and energy costs
- reduced refractory material consumption

Improved power factor

- better utilization of existing power supply
- no power factor penalties

### **Following benefits will be obtained for Power Utilities and other consumers:**

Stabilization of voltage, reduction of harmonics and balanced load

- minimum flicker disturbances on own and neighboring facilities
- reduced harmonic generation into feeding network
- minimum malfunction of protective devices
- balanced load

In addition, an SVC Light offers the following advantages:

- unique flicker mitigation performance (between 3 to 5 times)
- active harmonic filtering
- voltage control in time of millisecond which gives excellent furnace operation
- small physical footprint
- mitigation of furnace transformer switching transients

Improved production and plant economy ensure a short pay-back period for an SVC or SVC Light. ABB has references where the introduction of an SVC has led to an average melting power increase of 20 percent, a production gain of more than 10 percent, and a considerable cut in electrode and refractory material consumption.

A **Rolling Mill**, as a load on the network, is mainly characterized by time-varying consumption of active and reactive power. The Rolling Mill also generates harmonics into the feeding network. Large motor drives for Rolling Mills are very often equipped with Cyclo Converters where the harmonic generation is considerable. The rating of the rolling mill, in relation to the fault level, influences the characteristics of the feeding network. In case of a weak network, the drives may even trip out on low voltage support.

**For a Rolling Mill installation, the following factors are critical and may cause problems:**

- considerable voltage drop and/or fluctuations on the mill and Point of Common Coupling bus
- harmonic distortion
- exceed power factor limits

An SVC, compensating the rolling mill, will bring the following advantages:

Voltage stabilization

- improves operation of the rolling mill
- improves operation of surrounding equipment

Power factor correction

- more efficient utilization of the power equipment
- reduction of power losses
- no power factor penalties

Reduction of harmonics

- no interference (resonance's) with electric equipment
- reduced losses in nearby equipment