

PROJECT TITLE:			 GREEN QUBIC ENGINEERING & MINING CO.		
TARAZ BITUMEN PLANT PROJECT					
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TRANSFORMERS SIZING CALCULATION	TRZ-EL-LI-610	1			
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Transformer Sizing criteria

The following shall be considered for the transformer sizing;

- a. In case auto changeover system is provided at the switchgear (connected to the transformer secondary, i.e. secondary selective network), then each transformer shall be sized for the maximum demanded load of the entire Switchgear. The maximum load demand for the secondary selective system is when one transformer is feeding the entire switchboard.
- b. In addition to a), each transformer shall have additional 20% spare capacity for future load growth

Power rating

The transformers shall be sized [x%] of the peak load (where x = 120%)

Transformers power rating shall be equal or greater than:

$$S_n = 1.2 * P / (n * \cos\phi) \text{ KVA}$$

Where:

P = electrical absorbed peak load fed at the secondary transformer voltage.

n = number of distribution transformers installed –1, except single feeds where n=1

cosφ = load power factor or improved value, in case capacitor bank is installed.

For Transfrmer TR-01

P =648KW Active absorbed power (Rev01)

n=1, P=570 and cosφ =0.9

$S_n = 1.2 * P / (n * \cos\phi) = 864 \text{ kVA. (Rev01)}$

The selected size is 1000 kVA.