

Chiarimenti (Clarifications)

Lista (List) #4

Tutti i chiarimenti sono riferiti al Lotto 1

(All the clarifications refer to Lot 1)

Chiarimento (Clarification) #4.1

Domande (Questions):

According to our preliminary calculations and simulations, it is possible to reproduce the reference current waveforms with capacitor banks (instead of Supercapacitors), while still complying with the following premises: Maintain stabilized DC voltages and requiring an input power <2500kVA. Is it possible to propose a solution based on capacitor banks only, instead of including Supercapacitor banks?

Risposta (Answer):

It is true that some requirements could be achieved with other types of capacitors. However, the specification on supercapacitors is clear:

Minimum energy of supercapacitors in the whole system: 38 MJ.

Even if the other requirements are achieved without the supercapacitors, they shall be included in the procurement.

The energy storage in supercapacitors can ensure a good safety margin for radial control operations and in case the actual losses will be higher than estimations.

Chiarimento (Clarification) #4.2

Domanda (Question):

Maximum output voltage ripple is set to +/-4%. Please clarify if this is +4% peak / -4% peak of the rated output voltage (+/-4kV), in the worst-case modulation rate (voltage ripple will change with modulation rate). Maximum ripple voltage is important because it affects the semiconductors switching frequency and the required output filter. The output filter affects the transfer function.

Risposta (Answer):

The output ripple shall be within $\pm 4\%$ (from -160 V to +160 V) in the worst case. The switching frequency and the output filter (if necessary) shall be optimized by the bidder.

Chiarimento (Clarification) #4.3

Domanda (Question):

In the tender it seems VSA/B are a single transformer fed unit, suggesting a single front end 12P converter with parallel H-Bridge, no series or cascaded connection.

Can you confirm?

Risposta (Answer):

No, it is not confirmed.

Figure 2 reports a reference scheme without imposing a specific topology.

The topology shall be selected by the bidder following its convenience, provided that all the requirements are fulfilled.

The input front end shall have at least 12 pulses, but can consist of several elements (transformers, AC/DC converters and so on).

The DC-link can be split.

The Output Converters A/B can include series, cascaded and/or parallel connections.

The final configuration can include coupling reactances and/or output filters if the bidder assesses it is necessary.