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Design and Consideration for Relocatable Containerized STATCOM Installation to Provide Grid Flexibility and Stability

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SC B3 PS1

PS1.3 What are the key changes to substation design and operation arising from the increasing deployment of Power electronic inverter-based technology and applications, what are the key interfacing challenges?

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Group Discussion Meeting

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1

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The key changes to substation design and operation

From Power electronic inverter-based technology and applications

- A lot of information shall be monitored and controlled from both system and device.
- The power electronic devices such as STATCOM, have a faster response comparing to conventional way.
- Most power electronic devices are compact and complicated design.
- The substation designers and the operators shall meticulously study in all fundamental principles, operation, and maintenance.
- Hierarchy monitoring and control system are required with the fast action.

Interfacing challenges/limitations

The interfacing with the existing equipment. This issue can be solved if the owner clearly defined what they need at the design stage.

- Example: The power electronic device are compatible with National Control Center or Regional Control Center's communication protocol.

Data processing to the requirement.

- Example: Paper 10998, the containerized STATCOM may be parallely connected to 4 units because of the limitation of data processing, monitoring, and control system.