PGCIL, Vishakapatnam
Vizag II 1x500 MW HVDC back-to-back interconnection

HVDC solution for transferring 500 MW of power in asynchronous mode between Eastern and Southern grids of India

Customer Benefits

- Power transfer in asynchronous mode between eastern and southern regions without transfer of grid disturbances
- No short circuit impact from one network to the other
- Improved network stability through power modulation and frequency controllers
- Reduced disturbances in the AC system by prevention from proliferation to other region
- Reduced maintenance through thyristor valve cooling system
- Unmanned control room

ABB Solution

- Turnkey back-to-back HVDC solution – project designed and executed by ABB Sweden and India
- Equipment from ABB Sweden - Thyristor Valves, One convertor transformer, Control & Protection Systems, 400kV AC Switchgear, Fine water Cooling systems
- Equipment from ABB India - Six convertor transformers, Filter Capacitors. Outdoor Dry type cooler banks, 400 kV AC switchgear and Control Mimic
- Complete civil works including control room equipment and building foundation
- Substation commissioned in 2005
Project highlights

- Mid-point grounding on DC side reduces pole to earth potential and hence required clearance on DC side
- Once through thyristor valve cooling system reduces maintenance
- 90 cm² thyristors (YST 90) used for high current application

ABB’s Grid System offerings for bulk power transmission:

HVDC
- Bulk power transmission
- Long sea transmission
- Asynchronous connections

HVDC Light
- Underground cable transmissions
- Power from shore to platforms and islands
- Connecting wind and solar energy to grid

FACTS - Series Compensation
- Increased transmission capacity

FACTS - Shunt Compensation
- Power Quality

High voltage cables
- Underground and submarine AC and DC cables

Power semiconductors
- T&D, industrial drives and traction applications with Bipolar and BIMOS technique

Consulting and service
- Transmission system consulting

ABB AB
FACTS
SE-721 64 Västerås
Sweden
Phone +46 21 32 40 00
Fax +46 21 41 44 72
www.abb.com

ABB Limited
14, Mathura Road
Faridabad 121003
India
Phone +91 129 227 5592
Fax +91 129 227 5019
www.abb.com