Masterclass on HV Overhead Lines

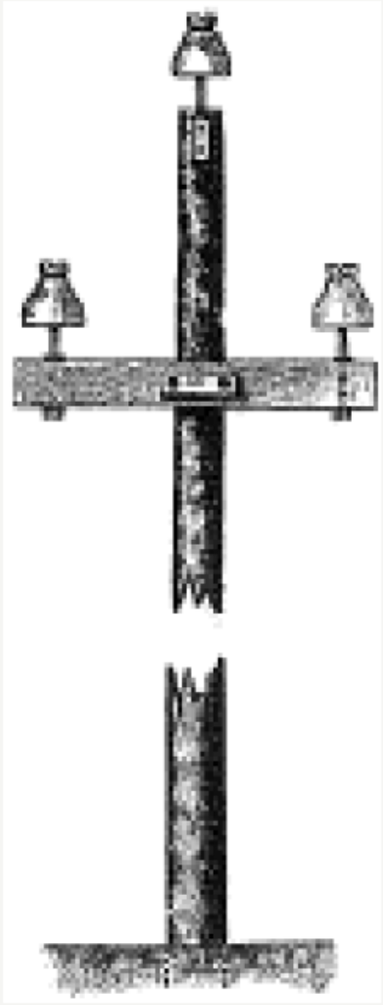
By

CIGRE PRESIDENT- Prof. Konstantin

06th March 2026

UDSM CoET – A 317

History




Interconnected
network of
UCTE
UCTE
NORDSEE
OSTSEE
MER MÉDITERRANÉE

Mechanical loads

- Design principles
  - Meteorology
    - Wind loads
      - Ice loads

Conductors



- Types
- Production
- Tests
- Sag and tension
- Thermal rating
- Monitoring
- HTLS conductors
- Bundle conductors
- Conductor vibrations

Conductor Vibrations

- Wind-induced oscillations
- Inner conductor mechanics
- Damage mechanisms
- Energy balance principle
- Damping
- Measurements
- Design limits

Fittings



- Suspension clamps (top clamps, helical ties, distribution fittings)
- Tension or dead-end clamps
- Connectors or joints
- Branch-off or T-clamps
- Aerial markers
- Vibration dampers
- Spacers and spacer dampers.

Insulators



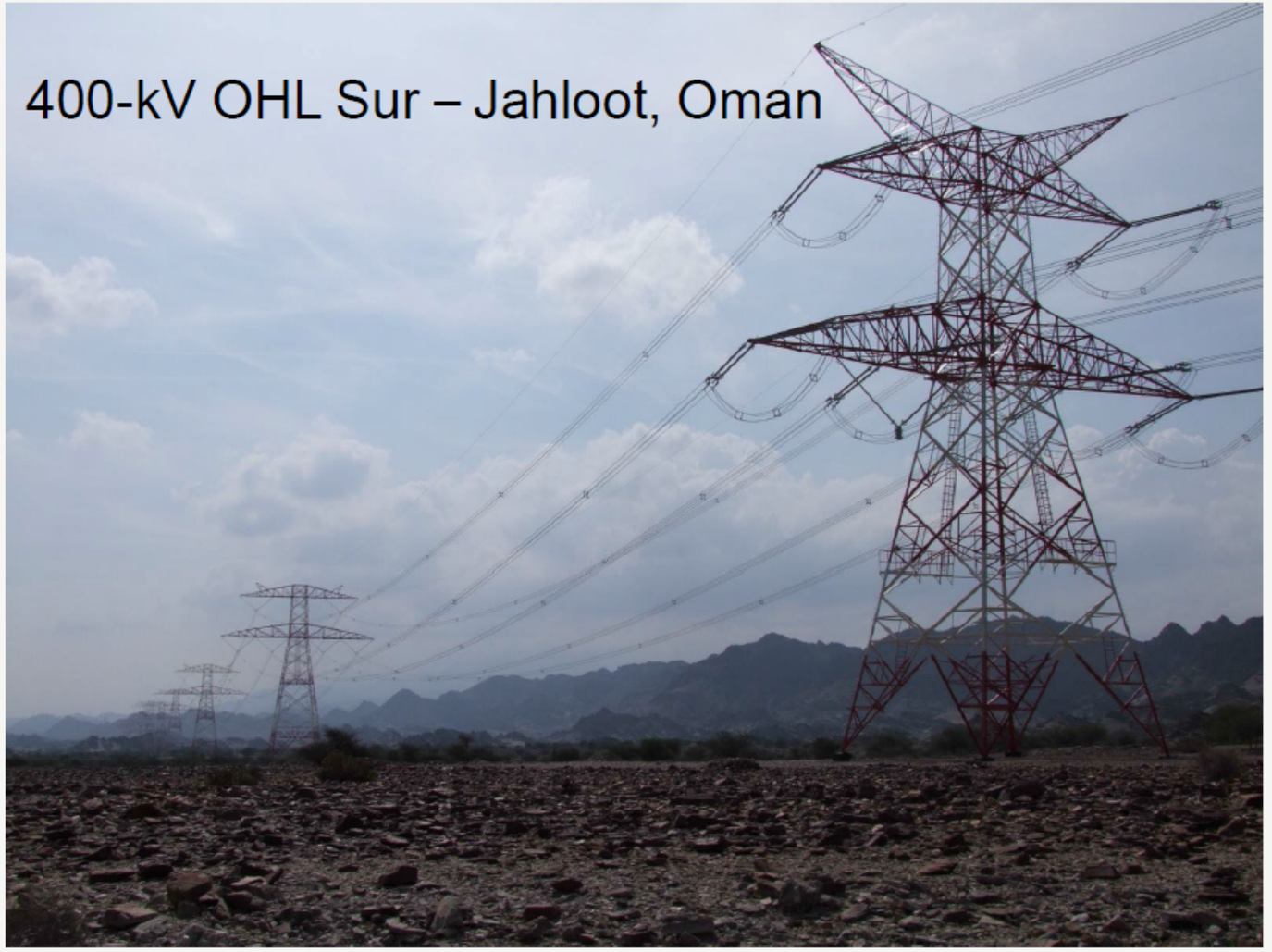
- Porcelain- and Glass
- Composite insulators
- Electrical design
- Mechanical design
- Pollution performance

Composite Insulators (NCI)



- Development/Applications/Service Experience
- Components/Materials
- Manufacturing/Acceptance Tests
- Design Mechanical/Electrical
- Insulator Strings/Corona&Power Arc Protection

Supports and Foundations



- Supports
- Clearances
- Loads
- Tower design
- Aesthetic supports
- Lightning protection
- Foundations
- Earthing