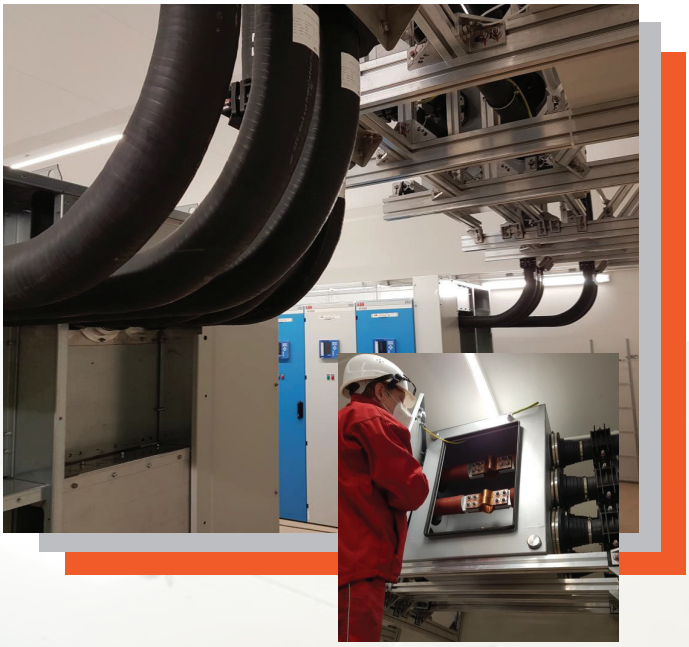
SIS PROJECT SUMMARY

Solid Insulated Bus Systems (SIS)

PROJECT RATING	
12	2500
VOLTAGE CLASS (kV)	CURRENT RATING (A)

INDUSTRY: Utilities, Municipal Power System
APPLICATION: switchgear bus tie
RATING: 12kV / 2500A per phase

BACKGROUND: municipal utility system completing substation modernization and capacity upgrade, bus tie bewteen switchgear, switchgear lineup and feeds designed for increased reliability



PROJECT DELIVERABLES

Implement new MV bus tie connection between switchgear lineups
Highest capacity (current rating) per phase
Custom design thru interactive project development
Scheduling coordination with other time accelerated facility projects
On-site construction supervision

SIS BUS BAR RATINGS and DIMENSIONS

Rated voltage: 12kV, 50Hz, PFWV 28kV, 1.2/50µs 75kV (lightning impulse)
Rated current: 2500A, $I_{THERMAL}SC$ 25kA for 3s, $I_{DYNAMIC}SC$ 64kA
AL conductor tube, diameter 90/15mm
WEIGHT 15kg/m at OD 114mm (indoor)
190mm phase spacing

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SIS SYSTEM CAPABILITIES	
40.5	8000
VOLTAGE CLASS (kV)	CURRENT RATING (A)

GENERAL SIS RATING INFORMATION

Solid Insulated Bus Systems (SIS)

RIP technology has been in use in the electrical industry for medium to high voltage and EHV applications for over 50 years--mainly in the manufacture of high current RIP transformer bushings.

General Specifications and Operating Requirements

- RESIN IMPREGNATED PAPER (RIP) technology
- Maximum system voltage and current
- Ambient temperature
- Routing and clearance
- Equipment connections and non SIS bus interconnections
- Indoor vs Outdoor installations
- Support structures to include seismic compliance

Once the bus bar segments are manufactured according to proven RIP processes for vacuum impregnation and resin curing, each bus bar segment and connection sleeve is individually tested according to IEC 60137, Insulated Bushings for Alternating Voltages above 1000V (comparable to ANSI / IEEE C57.19.00 and IEEE C57.19.01) to ensure acceptable test levels for power frequency, partial discharge, capacitance and loss factors. The test criterion is the essential element of verifying a void free insulation structure that will lead to a partial discharge free operation.

All RITZ SIS Bus Bar voltage class designs and current capacity ratings have been verified through type testing procedures also covered under IEC 60137 according to the following test regimen:

1. Power frequency test and PD measurements
2. Impulse voltage test
3. Power frequency test and PD measurements repeated
4. Temperature rise test
5. Temperature cycling
6. Power frequency test and PD measurements repeated

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