SIS PROJECT SUMMARY

Solid Insulated Bus Systems (SIS)

PROJECT RATING	
12	8000
VOLTAGE CLASS (kV)	CURRENT RATING (A)

INDUSTRY: Industrial, pulp mill
APPLICATION: bus connection between GENERATOR and TRANSFORMER
RATING: 12kV / 8000A per phase

BACKGROUND: pulp mill needed to increase production capacity 2X from 430k tons to 900k tons, and this required electrical systems updates (capacity increase)

PROJECT DELIVERABLES

Implement new MV service into existing building with lowest facility impact
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: 8000A, $I_{THERMAL}$SC 80kA for 1s, $I_{DYNAMIC}$SC 204kA
CU conductor tube, diameter 200/10mm
WEIGHT 65kg/m at OD 224mm (indoor), 81kg/m at 254mm (outdoor)
800mm 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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