



GE VERNOVA

RECTILISYS[®] POWERS THE AP60 TECHNOLOGY OF RIO TINTO ALCAN

The world's most powerful electrolysis process
at the time of commissioning in 2013

This document was originally created when the company was known as Alstom Grid. The company is now known as GE Vernova.

Alstom Grid's turnkey solution draws on nearly 30 years of experience working together with Alcan - a proven track record that can be traced back to the first Pechiney potlines in Chicoutimi county, Quebec.

Alstom Grid completed its scope of work for the AIS/GIS substation and AC/DC conversion groups at the Jonquière site well in advance of its projected completion in 2013.

The full range of equipment, which included specially developed and patented technology for the new AP60 process, comprised: 161 kV air-insulated (AIS)/ gas-insulated (GIS) substation, cables, AC/DC conversion groups, process loop compensation groups, Power Factor compensation and harmonic filter banks and associated Level 1 and Level 2 control systems for the HV power station and AC/DC conversion substations.

Customer profile

Rio Tinto Alcan is one of the world's largest aluminium companies.

Business challenges

Rio Tinto Alcan's Quebec investment program included the construction, with options for future expansion, of an AP60 plant Phase 1 using new generation AP technology powered exclusively by clean, renewable hydroelectricity.

Project objectives

Equip the AP60 plant Phase 1 with a 161 kV substation and AC/DC conversion equipment for the future development of AP60 technology.

Finding the right partner

Cost, quality and the capacity to develop innovative new solutions made Alstom Grid the natural choice when Rio Tinto Alcan launched the tender.

AP60 PLANT PHASE 1 POWERED FOR FUTURE DEVELOPMENT

with DC conversion equipment
to supply the highest aluminium
electrolysis current in the world.

SCOPE OF SUPPLY

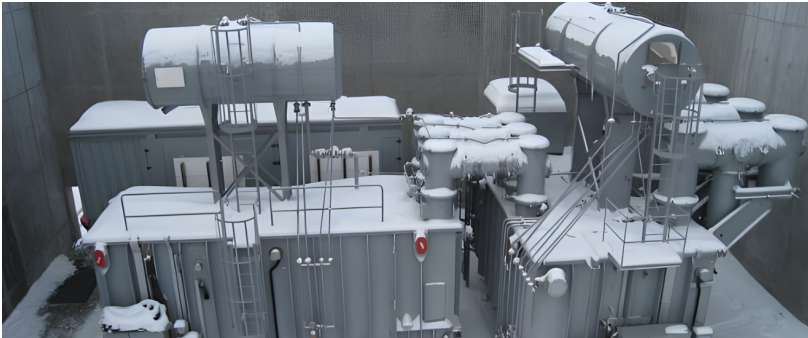
The contract awarded to Alstom Grid (France and Canada) called for the design, detailed engineering, supply, transportation, storage, installation, testing and commissioning of the AIS/GIS substation and AC/DC conversion groups comprising mainly:



- 6 x process loop compensation groups (102 kA, 42 Vdc)
- 7 x AC/DC conversion groups (95 kA, 1200 Vdc)
- 9 x filter banks for main conversion and process loop groups
- 161 kV gas-insulated/air-insulated switchgear
- 25 kV distribution switchboards

ACHIEVEMENTS AND CUSTOMER BENEFITS

AP60 technology focuses on energy efficiency and total cost reduction in the aluminium smelting process. Phase 1 of the AP60 plant, commissioned in 2013, has 38 pots and a production of 60,000 tons with expansion potential. If all the project phases are approved by Rio Tinto, the plant could reach a total of 272 cells installed with a production capacity of 460,000 tons of aluminium per year.



"This AP60 plant Phase 1 will use the most advanced aluminium smelting technology in the world and will become a platform for future AP technology development".

Jean Simon, President, Primary Metal - North America

-40 TO +35°C

operating temperature range for year-round reliability

38

 pots for Phase 1 production (60,000 tpy)

"Advancing Quebec's position as a global centre of expertise for the aluminium industry".

Extract from Rio Tinto Alcan press release

About GE Vernova's Power Conversion & Storage business

GE Vernova's Power Conversion & Storage business combines advanced energy conversion and storage systems to meet the electrification needs of utilities and industries. With a focus on power stability, energy storage, and industrial electrification solutions, Power Conversion & Storage empowers customers by addressing their most complex electrification challenges and accelerating their transition to a sustainable, decarbonized future.

For more information, please visit governova.com/power-conversion

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