



# A head start to profitability

Full Service: the successful concept of viable partnership

Ben Venter

In today's increasingly competitive business environment, challenges and risks associated with investing in plant improvements are less tangible than ever. For this reason, companies investing in new plants or upgrading their existing sites are well advised to partner with world-class organizations that have expertise in complementary areas that can help acceler-

ate benefits. With ABB Full Service®, a partnership arrangement that improves plant operations through maintenance excellence, companies can minimize risk and maximize success in their investments.

An excellent example of ABB Full Service® helping a customer accelerate his greenfield startup and achieve

sustainable production is Vale Inco Newfoundland and Labrador Ltd. (formerly Voisey's Bay Nickel Company) in Labrador, Canada. With the help of ABB, Vale Inco was able to achieve commercial nickel production significantly ahead of schedule and attain an all-time-high production level.

For many process industry and manufacturing companies, the achievement of a world-class operational status when building new plants or investing in productivity improvements is very difficult. Many organizations simply look to maintain their current profit and revenue levels by cutting costs and outsourcing. Investing in sustainable business improvements seems to be less attractive than focusing on short-term returns.

However, with these companies constantly facing increased customer demands, hypercompetitive market pressures, and higher shareholder expectations, concentrating on short-term improvements may lead to diminishing results. Businesses can win by focusing on their core expertise, such as mining, papermaking, rolling aluminum or tire building, and partnering with companies that better understand other important non-core processes in order to achieve higher results.

**ABB Full Service® is a performance-based maintenance partnership that drives operational excellence.**

#### Customer maintenance

The ABB Full Service® reliability management approach is different from traditional maintenance outsourcing because it assumes complete responsibility for maintenance and focuses on improving productivity in a performance-based manner. Traditional maintenance outsourcing drives cost cutting and transfers less important activities to a third party while the plant management continues to manage maintenance itself. The problem with this approach is that after limited financial benefits have quickly been realized there is no room for additional improvement. Suppliers focusing on protecting their thin margins are reluctant to enter a necessary partnership with the company to further improve the customer's processes.

ABB Full Service®, conversely, is a performance-based maintenance partnership that drives operational excel-

lence through sustainable productivity improvement and reliability excellence. With ABB Full Service®, ABB shares risk by contractually committing to key performance indicators (KPIs), such as increased overall equipment effectiveness (OEE) and reduced total maintenance costs, and assuming full responsibility for customer maintenance. One of the greatest advantages of the ABB Full Service® approach is that it enables the customer to focus on what they do best, while ABB concentrates on leveraging maintenance to improve customer profitability.

#### ABB Full Service® in greenfields

The Full Service approach in a greenfield site includes key additional steps that help accelerate business improvement and minimize risk. The seven distinct phases for implementing an ABB Full Service® agreement in a greenfield are a proven and standardized approach that entails mutual effort from ABB and the customer. At the conclusion of each phase, ABB and the customer discuss goals, accomplishments and next steps:

1. Front-end engineering
2. Detail engineering
3. Equipment selection and procurement
4. Construction
5. Commissioning
6. Startup
7. Operation

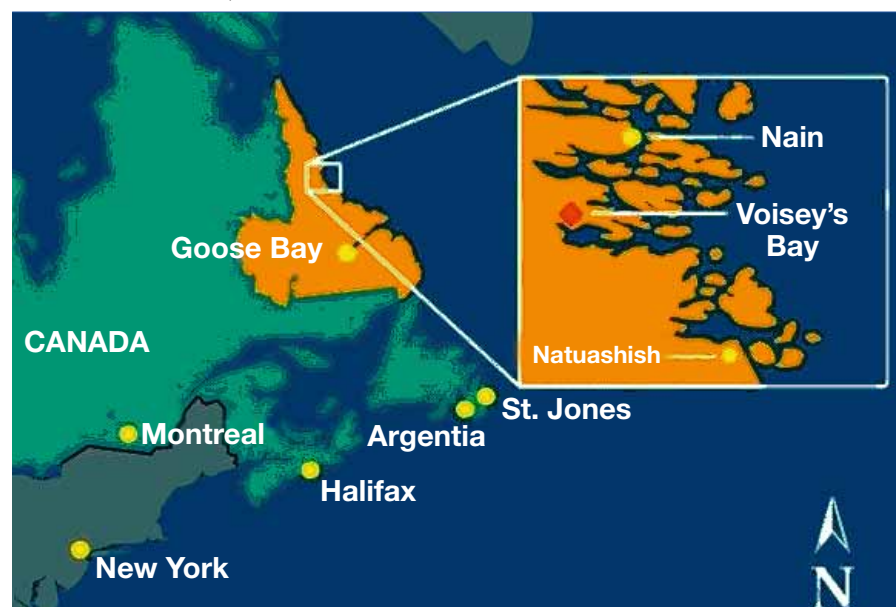
#### A powerful demonstration of success

Vale Inco, remotely located with little local infrastructure, is a \$1 billion greenfield nickel mine and concentrator <sup>1</sup>. The mine started operations in 2005 and employs more than 350 people with an expected annual production of approximately 50,000 tons of nickel for a minimum of 14 years.

Startup at Vale Inco involved implementing maintenance programs and plans, including condition-based, time-based and breakdown maintenance.

The entire maintenance function is handled by a partnership between ABB and Iskueteu, a local company that specializes in construction and operations support. ABB began by providing reliability consulting for the equipment selection, construction and maintenance planning phases. Additionally, ABB provided training for commissioning, startup and on-going operations, and through the Iskueteu partnership, is now responsible for maintaining all process equipment, site facilities, the port and the mine. One key challenge was the management's strong desire to "hit the ground

<sup>1</sup> Vale Inco in Labrador, Canada



## Outsourced performance services



running,” achieve very fast plant start-up and accelerate equipment performance.

In the commissioning phase, ABB and Vale Inco worked together to facilitate an efficient start to the next phase by ensuring all pertinent equipment, tools, and procedures were prepared, and key contractors were recruited. This involved creating the Maintenance Management Master Plan, a proven ABB methodology that improves maintenance by instituting best practices, and actively participating in the health, safety, and environmental continuous-improvement discussions.

Another key initiative in the commissioning phase was employee training and competency management. This included refining training materials, conducting equipment-specific training and doing company team-building exercises. In addition, Iskueteu/ABB participated in ABB Full Service® training, which included defining and developing roles and responsibilities, and training on work-order systems, customer relations and the ABB Full Service® agreement. One of the training approaches implemented is ABB’s Competency Development Program, where each maintenance employee has a specific personal development

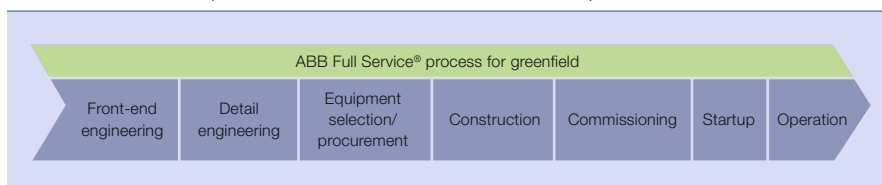
program that helps him complete a quality job safely, efficiently and effectively the first time. In Vale Inco, the Competency Development Program methodology identified more than 1,200 specific training programs required for maintenance operations to be successful.

**With ABB Full Service®, Vale Inco achieved 90 percent of rated capacity for the mine concentrator in just three months after startup.**



Startup at Vale Inco involved implementing maintenance programs and plans, including condition-based, time-based and breakdown maintenance. During implementation of condition-based maintenance, Iskueteu and ABB introduced new techniques, including ultrasonic testing, and developed an effective inspection strategy for each group of equipment. Furthermore, an Asset Management Program, which included life-cycle costing models and replacement strategies, was developed. Creating an optimal Asset Management Program for a greenfield site was a significant challenge since there was no historical asset and performance data to perform benchmarks and predict asset failures. So, during the startup, ABB and Vale Inco began measuring all performance indicators, including OEE and relevant operating costs, and developed and implemented continuous improvement programs.

2 ABB Full Service® operational excellence model for Greenfield plants





In the final ABB Full Service<sup>®</sup> phase for greenfields, primary maintenance programs were executed, managed, and supervised, and non-routine maintenance activities were performed. Also, KPIs continued to be measured and reported against targets, and root cause analysis procedures were implemented.

Vale Inco's commitment, ABB Full Service<sup>®</sup> management expertise and the ABB Full Service<sup>®</sup> methodology **2** produced the fastest ramp-up for any greenfield mine of the customer's consortium. Vale Inco achieved 90 percent of rated capacity for the mine concentrator in just three months after startup. In addition to an accelerated ramp-up, Vale Inco achieved significant performance improvements through incentive-based contracts, and experienced no major disturbance due to heavy investment on employee training. In fact, Vale Inco contributes six percent of all hours paid and worked by employees into retraining hours, and has achieved 1,000 days without lost time due to injury.

Achieving a fast ramp-up coupled with high employee satisfaction drove Vale Inco to realize commercial nickel production significantly ahead of schedule and attain an all-time high production level. Peter C. Jones, president and chief operating officer of Vale Inco, said in 2006, "We achieved commercial production well ahead of our original schedule. Thanks to this excellent ramp-up, we expect to produce some five thousand tons of nickel more than expected." This case clearly demonstrates that the combination of ABB Full Service<sup>®</sup> and strong

customer commitment and focus results in a partnership that delivers exceptional operational and financial achievements.

### **Sustainable performance**

Businesses can win by focusing on their core expertise and collaborating with companies that better understand other important non-core processes. ABB Full Service<sup>®</sup>, a partnership arrangement that improves plant operations through maintenance excellence, is an outstanding example of how customers can minimize risk and maximize success in their plant reliability investments. By bringing together excellence in reliability management, world-class business processes and innovative execution models, ABB delivers results for its customers.

For more information on ABB's Full Service offering, see "Outsourced maintenance" on page 79 and "Contracting good health" on page 84 of this *ABB Review Special Report*.

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