NOVA CHEMICALS

IMPROVE PLANT MAINTENANCE AND REDUCE REPAIR COSTS WITH SAP® SOFTWARE

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Ron Chow, Maintenance and Reliability Leader, NOVA Chemicals Corporation

QUICK FACTS

Company
- Name: NOVA Chemicals Corporation
- Headquarters: Calgary, Alberta, Canada
- Industry: Chemicals
- Products and services: Plastic and chemical materials
- Revenue: US$4.1 billion
- Employees: 2,500
- Web site: www.novachem.com

Challenges and Opportunities
- Provide organizational visibility and control of the maintenance schedule and related activities
- Coordinate repair scheduling, work execution, and material availability processes
- Improve maintenance efficiency and effectiveness
- Reduce reactive, emergency, and ad hoc repair efforts
- Increase preventative maintenance
- Facilitate communication and cooperation among all business groups and stakeholders

Objectives
- Replace a fragmented, disconnected plant maintenance system involving manual transactions with an automated, integrated SAP® solution
- Integrate plant maintenance processes and data with the rest of the enterprise

SAP Solutions and Services
Plant maintenance functionality of the SAP Enterprise Asset Management solution

Implementation Highlights
- Implemented at 11 plants, starting with a pilot program
- Enabled a smooth deployment, on schedule and within budget

Why SAP
- Trusted business partner with a proven solution
- Ability to extend and leverage the existing investment in SAP Enterprise Asset Management

Benefits
- Reduce time spent on reactive, emergency work by 47%
- Increase time spent on proactive, preventative maintenance by 61%
- Coordinate and integrate maintenance scheduling
- Improve maintenance scheduling compliance by 22%
- Increase communication between maintenance and operations
- Decrease unplanned equipment outages
- Reduce missed or rescheduled maintenance activities
- Help sustain world-class plant uptime levels while reducing associated expenses

Existing Environment
SAP Enterprise Asset Management

NOVA Chemicals®

NOVA Chemicals develops and manufactures chemicals, plastic resins, and end products that make everyday life safer, healthier, and easier. To improve maintenance scheduling and operations at 11 manufacturing facilities, the company deployed advanced plant maintenance functionality of the SAP® Enterprise Asset Management solution. The software enables NOVA Chemicals to better manage and coordinate maintenance activities, reduce related expenses, and sustain its world-class plant uptime levels.

A wholly owned subsidiary of the International Petroleum Investment Company (IPIC) of the Emirate of Abu Dhabi, NOVA Chemicals delivers value to its customers and supply chain by developing innovative technologies and products. Its value-driven philosophy means investing in relationships as well as research and development; maintaining a culture of dignity, respect, openness, and honesty; and remaining mindful of its impact on communities and individuals. The company's employees work to ensure health, safety, security, and environmental stewardship through its commitment to sustainability and Responsible Care, a voluntary initiative throughout the global chemical industry.

The plastics and chemicals industry experienced many challenges during the first decade of the 21st century. However, NOVA Chemicals remained highly responsive to customers and adapted quickly to changing market needs. Becoming part of IPIC in 2009 brought added strength and creates new opportunities for the future as IPIC evolves into a global industry leader.

Managing Plant Assets 30 Years Young

Based in Alberta, Canada, NOVA Chemicals has a long tradition of high asset performance. But as assets age – its oldest facility has been operating for 30 years – they naturally require more maintenance. Continuing to meet the highest asset availability standards has become more challenging, time-consuming, and expensive for the company. Business units across the global enterprise make heavy demands on the capabilities of the manufacturing facilities, adding to maintenance lead time and limiting the time available for repair work. Because of this, maintenance activities required detailed planning and scheduling to meet the windows of opportunity for getting work done.

To keep its equipment up and running, NOVA Chemicals processes some 20,000 maintenance work orders per year at each of its facilities. But the dynamic conditions of the company's fast-moving environment, combined with a web of stakeholders, made proactive scheduling and preventative maintenance too complex for its fragmented, unconnected maintenance system, which involved numerous manual transactions.

While NOVA Chemicals was already running some of the plant maintenance functionality of the SAP Enterprise Asset Management solution, the company had not deployed the full functionality. Plant maintenance processes were not integrated with related enterprise asset management processes, leading to inefficiency and a lack of transparency. Reporting and analytics activities were insufficient. What's more, the company's existing maintenance system could not provide a complete view of current and scheduled work, materials, and dependencies categorized by plant and department – adding to the challenges of capacity evaluation and prioritization of work orders.

The company knew that it needed a comprehensive view of data and processes to enable a more proactive approach and improve the effectiveness, efficiency, and transparency of its maintenance scheduling and processes. "With our old system, we just

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couldn't get a complete picture of what maintenance work was needed, when, and where," says Ron Chow, maintenance and reliability leader at NOVA Chemicals. "We needed a solution to help make sure that repair work on our equipment and plants is done correctly and as quickly as possible – at the lowest possible cost."

Continuing a Relationship

NOVA Chemicals has been an SAP customer since 1996. So when the company decided it needed a solution for improving its plant maintenance processes, it knew where to turn. The company recognized the significant power and value of the additional functionality of its SAP software, and implemented it in keeping with its program of continuous improvement. "We'd already been running SAP software to support a range of business processes," says Chow. "It was clear that deploying the additional functionality provided by SAP Enterprise Asset Management was the answer for integrating and coordinating our repair work activities as well."

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Gaining a Comprehensive View of Maintenance and Scheduling

Today, the SAP Enterprise Asset Management solution provides a complete and consolidated view of scheduled maintenance at NOVA Chemicals. The software natively integrates with other SAP solutions and endorsed partner solutions, and has enabled NOVA Chemicals to take a holistic approach to plant maintenance. Role-based access supports all key stakeholders based on their business priorities. The SAP software facilitates maintenance scheduling, work execution, and material availability processes. Business users can get a daily and weekly view of work scheduled, priorities, resources required, scheduling conflicts, and project status. The software drives consistent scheduling of maintenance activities and provides a complete view of work scheduled for future periods.

With its new plant maintenance capabilities, NOVA Chemicals is keeping its plants running, enabling schedule compliance, and cutting equipment downtime by scheduling groups of tasks to be performed concurrently. By supporting process and data integration, the software provides visibility into the company's maintenance processes. All involved business groups – including manufacturing, quality control, production planning, procurement, accounting, capital projects, and operations – get a better understanding of the wide-ranging effects of maintenance operations. "With the increased visibility we get into financials," says Chow, "we can see the direct impact of maintenance work on the bottom line."

SAP Enterprise Asset Management is integral to the company's maintenance workflow processes and facilitates documentation and compliance. Database functionality improves analytics for cost, reliability, frequency, and so forth. Scheduling, work order, and notification functionality streamlines workflows, improving efficiency and productivity.

Driving Proactive Maintenance While Lowering Costs

With the functionality provided by SAP Enterprise Asset Management, NOVA Chemicals has substantially reduced reactive emergency work and taken a more proactive preventative approach to asset maintenance. By integrating decision-making and prioritization processes, the software drives effective communication between maintenance and operations. With all business groups working together to finalize schedules, the company has decreased

equipment outages and reduced missed or rescheduled maintenance activities. "SAP Enterprise Asset Management provides a holistic view of the overall maintenance schedule and pre-execution work," says Chow. "And it gives all of our business users the details they need to make better decisions."

Since implementing the software, NOVA Chemicals has cut the time and expenses dedicated to maintenance while upholding excellent facility uptime. The company has enhanced schedule compliance, posting a 22% improvement in completing maintenance work on time. It has also reduced emergency work hours by 47% and increased the hours spent performing proactive, preventative maintenance by 61%.

Looking Forward

In the future, NOVA Chemicals expects to continue relying on SAP Enterprise Asset Management to help sustain a high level of plant availability and meet new challenges as assets continue to age. The company plans to use the solution to enable further processes, such as capacity evaluation, additional forecasting and spending analytics, and maintenance cost budgeting.

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