



Razorleaf Helps Nuclear Power Toolmaker Use PDM Tools to Speed New Product Design

Utilities worldwide are engaged in a complex struggle to meet the world's escalating demand for electricity without increasing emissions of greenhouse gases. The challenge has re-focused attention on nuclear power, enjoying a resurgence as today's only commercially viable, carbon dioxide-free technology.

AREVA, a world leader in nuclear power services and the only company that covers all industrial activities in the nuclear industry, is at the forefront of efforts to construct the next generation of U.S. nuclear power plants. AREVA also plays a critical role in maintaining the nation's 103 operating nuclear reactors, each of which is unique. Even "twin" reactors located side by side at the same site can have design differences.

To keep the nation's existing nuclear plants in prime condition, operators must regularly conduct first-of-a-kind maintenance procedures, which often require new tools and equipment custom-designed for specific operations – the specialty of AREVA's Component Repair Technologies, a group within AREVA NP Nuclear Services.

Whether AREVA is designing replacement equipment or the tools to service existing plants, documentation in this highly regulated industry is critical. Knowing which tools have been designed before also is important to meet unanticipated service requests that must be performed during a scheduled plant shutdown and so require quick turnaround.

"One big piece of our data management puzzle was to have a system flexible enough to allow us to do a design for a job like that as quickly as possible," says Gary Poling, design engineer for AREVA Component Repair Technologies. "The key to speed is being able to find your design data quickly. With ENOVIA SmarTeam, it takes a couple seconds to find a file, which frees time to focus on creating the best possible design."

Although each order is highly customized, AREVA has so much experience in the nuclear industry that it generally has designed something it can use as a starting point for a new project. Building on an existing design saves time, increases

the opportunities for design improvements and reduces prototype rework, because many design challenges have already been solved in the initial design process.

The challenge, however, is to quickly locate the best design to use as a starting point. To help address that challenge, AREVA NP Component Repair Technologies chose ENOVIA SmarTeam, a PLM solution from Dassault Systèmes. "Before ENOVIA SmarTeam, we saved all of our files on our network drives," Poling says. "With ENOVIA SmarTeam, we saw the opportunity to improve our search capabilities, making it easier and faster to locate the data we needed and ensuring that data is preserved. ENOVIA SmarTeam also provides revision management, which allows us to see all of the versions, who made changes, when they made them and why, which is valuable for the regulatory review process."

PARTNERING WITH RAZORLEAF OPTIMIZES SMARTTEAM'S BENEFITS

Making the decision to implement ENOVIA SmarTeam, however, was just part of the equation. AREVA also realized the importance of partnering with experts in order to make sure AREVA's internal business processes were tweaked to leverage the benefits of PLM. To meet this demand, AREVA turned to their CAD reseller, who in turn brought in consultants from Razorleaf, an independent professional services provider with special expertise in Product Data Management (PDM).

Throughout its implementation, AREVA has benefited from the support of Razorleaf. "Razorleaf adds invaluable experience," Poling says. "Razorleaf has done similar things for other companies so it can do it faster and better than we could." Razorleaf's experience also allows it to suggest the optimal way of achieving goals, such as changing an internal process to take advantage of existing PDM capabilities or writing scripts to customize the operation of ENOVIA SmarTeam to AREVA's processes.

Projects progress more smoothly with Razorleaf's input, Pol-

ing says, because the company imposes discipline on the process, using its experience to ask tough questions the AREVA team might not have thought to ask. “That process turns up a lot of hidden issues. By identifying them early and resolving them, we can be sure that the end users get what they want and that it matches what they need.”

Razorleaf’s support was pivotal in the project to integrate ENOVIA SmarTeam with the company’s PDF-based Records Management system, for example. “The stability, maintenance and support from Razorleaf allowed us to build an implementation that worked perfectly in the test environment,” Poling says. “Their technical expertise and patience, their willingness to learn what we need, and the fact that we can call them at any time to brainstorm ideas or ask questions has accelerated our success.”

With ENOVIA SmarTeam, files are stored in a centralized electronic database with powerful search functions that make it possible to locate one file among thousands in seconds. Multiple search factors are offered, and one small bit of information can be used to quickly drill down to the precise file being sought. “The faster we can find the part, the faster we can begin delivering for the customer and the more time we have to focus on creating the best possible design,” Poling says.

Revision management functions in ENOVIA SmarTeam also ensure that all versions of a design are retained, including both the original design and any modified versions created later. Automated time and date stamps ensure that everyone involved in a project can immediately identify the latest version of a work in progress. This ensures everyone is working on the latest version, another time saver.

Regarding some of the automations that Razorleaf has helped AREVA put in place, “It takes a little more time up front to follow the proper naming conventions, but taking that time saves you so much more at the end, when you need every second,” Poling says. “ENOVIA SmarTeam automatically generates your parts list from your full assembly and keeps up with your BOMs (Bills of Material). It’s very nice and very fast. All you do is push a button.”

REVISION MANAGEMENT CREATES REGULATORY HISTORY

In addition to organizing and locating data, protecting historical versions and tracking work in progress, PDM also is invaluable in

helping AREVA meet its regulatory documentation requirements.

“Especially for components that will be installed at the nuclear plant and left behind, what we call ‘safety-related’ materials, the documentation is critical,” Poling says. “Every component that gets left at the plant requires an official document that lists all of the other documents necessary to fabricate the component. It’s more than a bill of material. It’s fabrication, assembly, operating and maintenance instructions, and the design data we manage in ENOVIA SmarTeam is crucial to assembling those documents as well.”

Nuclear power plants operate for decades so the companies that build and service them must keep their data for decades as well. Records management is so important, in fact, that AREVA has an entire department dedicated to organizing, storing and retrieving historical documents. Because the technology for creating and storing documents as PDFs changes more slowly than engineering technology, and because PDF viewers tend to be backwards-compatible, AREVA with Razorleaf’s assistance has chosen to build its Records Management function around a system based on PDFs.

AREVA saw an opportunity to further streamline its operations by creating a system to transfer ENOVIA SmarTeam files, which can be stored as PDFs, directly to the company’s PDF-based Records Management system in electronic form. The process eliminated the need to print, physically sign and then re-scan documents such as BOMs and ensured that all data is maintained in an error-free form.

Razorleaf worked with AREVA to create the transfer capability to electronically integrate its Records Management and ENOVIA SmarTeam systems. When an electronic workflow is approved in the ENOVIA SmarTeam system, the PDF files are copied to a network folder, where the Records Management system automatically imports the files and populates the attributes into the Records Management system. Poling says that users enjoy the paper-free system, which allows engineers to spend more time designing and less time processing and manually tracking paper.

“In addition to their high level of knowledge of PLM technology, Razorleaf really took the time to learn and understand our existing business processes, industry-specific requirements and our needs,” says Poling. “Their deep understanding of our industry is what has made them invaluable to us as a business partner.”



RAZORLEAF HELPS AREVA FURTHER LEVERAGE ENOVIA SMARTTEAM FUNCTIONALITY

With Razorleaf's help, AREVA looks forward to obtaining even more benefits to their existing processes with ENOVIA SmarTeam. With each successful step, the company's PDM implementation has grown significantly into other areas of the company. Future projects on the company's wish list include linking ENOVIA SmarTeam to AREVA's Enterprise Resource Planning (ERP) system. This will eliminate the need to re-type BOMs into the ERP system for functions such as Purchasing and Inventory Management, and make engineering data available throughout the company.

"Our goal is to get to the point where we enter data once and reuse it in many systems," Poling said. "We've done it with Records Management. As soon as we get our new ERP system up and running, we want to do it there, too. I've looked at other PLM packages, and the robustness of ENOVIA SmarTeam lets you do so much more than the competitors. It gives you all the tools. You still have to pick out the right tool and use it the right way, but the tools to do what you want to do are there with ENOVIA SmarTeam. And as far as being sure we're using the right tool at the right time, that's what we have Razorleaf for." ■

ABOUT RAZORLEAF

Razorleaf is a services provider that helps companies become market leaders through the measured application of technology and best practices to existing business processes.

Razorleaf specializes in process analysis, implementation, training and support of enterprise technologies including Design Automation (DA), Enterprise Portal (SharePoint), Product Data Management/Technical Data Management (PDM/TDM), and Product Lifecycle Management (PLM) solutions.

With over 100 active customers and more than 200 implementations, our experienced team offers expertise in leading software from Oracle, Autodesk, Conisio, Dassault Systemes, DriveWorks, Microsoft, PTC, RuleStream and ShareVis. The company is headquartered in Ohio with satellite offices in Arizona, Florida, Georgia, Maryland, Michigan, Minnesota, New York, North Carolina, Pennsylvania, Texas, Virginia, and Wisconsin.

For more information about working with Razorleaf, [contact us here](#) or call us at 330-676-0022.