

SAP Customer Success Story Utilities – Hydroelectric



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AT A GLANCE

Summary

Based in Portland, Oreg., PacifiCorp – a subsidiary of Glasgow-based ScottishPower – supplies electricity to more than 1.5 million consumers in the western United States. To reduce its monetary risk by automating its regulatory compliance processes, PacifiCorp chose SAP® software, including the SAP xApp™ Emissions Management (SAP xEM) packaged composite application and the SAP Environment, Health & Safety (SAP EH&S) application – both powered by the SAP NetWeaver™ platform.

Web Site

www.pacificorp.com

Key Challenges

- Regulatory licensing and compliance management growing more complex
- Manual system – spreadsheets, other desktop tools – could no longer process growing workload

Project Objective

Use SAP xEM as the heart of an automated compliance management system

Solutions and Services

- SAP xEM
- SAP EH&S
- SAP Business Intelligence and SAP Enterprise Portal, components of SAP NetWeaver

Why SAP Solution

- SAP vision for the Enterprise Services Architecture blueprint
- Integration expertise of TechniData

Implementation Highlights

- Single-plant pilot completed
- Pilot followed by rollout to additional plants on the Bear, Lewis, Klamath, and Rogue rivers

Key Benefits

- Automated compliance management lowers risk of noncompliance.
- System improves worker efficiency by devolving compliance tasks to operational personnel.
- System quality eliminates need and cost for separate, third-party compliance tracking system.

Implementation Partner

TechniData

Existing Environment

mySAP™ ERP solution

Database

Oracle9i

Hardware

Sun enterprise-class servers

Operating System

UNIX

PACIFICORP

Major Energy Provider Uses SAP® Solutions to Automate Compliance Management

For Oregon-based PacifiCorp, which supplies electric energy to more than 1.5 million customers in the western United States, caring for the public waterways – the rivers it uses to generate hydroelectric power – is very serious business.

PacifiCorp acknowledges its role as a steward of natural resources. “We really are the caretakers for the water and the land where we operate, and we have an obligation to the environment and the people who use the water and the land,” says Jerry Roppe, PacifiCorp’s Hydro Resources compliance manager.

However, the practical side of stewardship – complying with increasingly complex environmental regulations and licensing procedures – is a business challenge. Hydroelectric utilities are the energy industry’s second most regulated producers, after nuclear power plants. The licensing process is rigorous – plants are typically relicensed every 30 to 50 years, and the relicensing process itself can take 10 years. These licenses are based on adaptive management – a realistic approach to managing complex, dynamic, and unpredictable ecosystems – which results in “living” licenses with changing compliance requirements. To help create a robust IT infrastructure capable of managing the growing complexity of compliance management, PacifiCorp turned to SAP for solutions.

Coping with Increasingly Complex Regulations

For the utility, the regulatory process involves dealing with a variety of stakeholders. For example, as part of the process, PacifiCorp must satisfy the needs of a number of interested parties, including state and local government agencies, Native American tribes, environmental groups, and the Federal Energy Regulatory Commission (FERC), which is the agency ultimately responsible for issuing the license.

As part of the process, the utility must commit to any number of actions that the different parties ask for, from building fish ladders to expanding campgrounds. These can be very expensive. As an example, one improvement PacifiCorp is undertaking involves a \$50 million construction project to transport fish around the utility's turbines.

Companies such as PacifiCorp work hard to meet the licensing requirements – and then to stay in compliance with these requirements – because the consequences of noncompliance can be very expensive. If a plant is found to be out of compliance, FERC requires reporting that incurs considerable personnel time and cost, can levy fines, and can curtail or even shut down operations.

PacifiCorp: Getting Ahead of the Curve

In 1999 PacifiCorp was faced with relicensing six of its hydroelectric projects. The company was also facing increasingly stringent compliance reporting regulations from FERC and other agencies. PacifiCorp decided to look for a new way to satisfy and even anticipate the regulatory needs of the future.

“At the time, we were using a mixed bag of tools,” says Roppe. “These included Microsoft Excel spreadsheets, Microsoft Outlook, Microsoft Project – whatever people were comfortable with. But the reporting requirements from FERC and the others were growing more and more complicated, and we knew this system wouldn't work for the next round of licensing.”

Growing Regulatory Pressures

Examples of growing regulatory pressures are the increased complexity of reporting requirements and the enhanced scrutiny of operations. In addition, the new operating licenses have greatly increased not only the environmental conditions that have to be met but also the complexity of the associated controls and monitoring. FERC now requires more detailed reporting for certain incidents. Under the new and more demanding regulations from FERC, incidents relating to – for example – ramp rates, hazardous material spills, or minimum stream flows now require several layers of reporting. Now both real-time reports (as incidents occur) and written reports documenting the event, responses, and corrective actions must go not only to FERC but also to multiple local and state agencies.

“We knew we had to build a compliance management system that would be able to handle very high complexity – and deliver real-time reporting,” says Roppe. “It was one thing to put together the settlement agreements that would lead to the license – that process alone can take years to achieve. But it was another thing to come up with a set of processes that could actually track the progress of everything we'd committed to in the settlement agreements – and manage and report on any and all related incidents.”

Solution: SAP xApp™ Emissions Management

After reviewing possible solutions, PacifiCorp decided to implement the SAP® xApp™ Emissions Management (SAP xEM) packaged composite application. SAP xEM was originally developed by TechniData, a Chicago-based system integrator, using the SAP xApps™ portfolio of packaged composite applications as the core.

In addition, PacifiCorp brought in the SAP Environment, Health & Safety (SAP EH&S) application – also originally developed by TechniData – as well as the SAP Business Intelligence (SAP BI) and SAP Enterprise Portal (SAP EP) components of the SAP NetWeaver™ platform.

“We knew that SAP was committed to the importance of Web services and the Enterprise Services Architecture blueprint,” says Roppe, “and we knew they would work closely with TechniData in developing and integrating the SAP xEM application with our back-office software.”

What PacifiCorp didn’t know was that SAP xEM, which was originally developed for emissions testing and compliance, would prove ideal for PacifiCorp’s application, where compliance, not emissions, is the overriding need.

“We looked at a number of alternatives, but SAP xEM was perfect for us, even though Hydro Resources doesn’t have typical air emissions to measure,” says Roppe. “What we do have are water flows and rates with millions of fish, and thousands of acres of land and water to care for. SAP xEM is a major component of that effort.”

How SAP xEM Works for PacifiCorp

Put simply, a packaged composite application gathers information from enterprise applications and databases and other resources, and then uses that information to build a new solution to meet a specific business need. To do its work, the packaged composite application may draw information from a variety of heterogeneous sources and it can contact individuals in the enterprise who work at geographically diverse locations.

In the case of PacifiCorp, SAP xEM forms the core of a new, automated compliance management system, with an auditable trail of measurement and reporting. The compliance management system draws information from – and updates – any of a number of sources, including legal and regulatory databases, production-history and financial databases, along with the SAP EH&S application.

To do this, SAP xEM tracks down operating information, compares it with regulatory thresholds, exchanges information and analysis with the data warehousing capabilities of SAP BI, and delivers alerts and updates to appropriate personnel.

SAP xEM also lets users build applications on the fly by creating tasks – actually, composite applications – through a variety of templates. Task templates are accessible through SAP EP. Once users log on to the portal, they can then access status reports for their projects and, if authorized, create tasks to trigger follow-up actions where necessary.

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“The portal is a terrific time saver,” says Roppe. “Users love the portal because one logon gives them access to the entire system. They don’t have to keep logging on to every application.” For example, when a spill incident has to be processed, the user sees a template that includes a variety of tabs covering different aspects of the incident, such as event location, investigation, and regulatory outcome. Each tab shows information gathered to date and gives the user an opportunity to add new information, inquire about further information, request delivery of the task template to other personnel, or create reports either for internal purposes or for FERC and other agencies.

“What makes this process even more challenging,” says Roppe, “is that regulations can change by state or locality. So a spill that might require a report in one state might not pass the threshold of another state. Because of this, the compliance management system has to be smart enough to determine the exact compliance regulations for any specific incident.”

Getting Under Way with the Implementation

PacifiCorp embarked on a large-scale pilot program in 2004 to test its new compliance management system. For the pilot, the company chose the North Umpqua River system, which was recently relicensed and which consists of eight facilities along Oregon's North Umpqua River. PacifiCorp created six typical scenarios that would have to be covered under the current FERC regulations. These ranged from monitoring regulatory requirements for drinking water and minimum stream flows to managing hazardous spill incidents.

The pilot is now being expanded into its full incarnation and PacifiCorp is in the process of rolling out the new solution to its other plants – on the Bear, Lewis, Klamath, and Rogue rivers – that have recently received or are applying for licenses. “What the compliance management system gives us is a means of tracking and reporting on all the conditions that we committed to in our settlement agreements and in our final license,” says Roppe. “This could be a few hundred specific requirements and fulfilling any one might demand numerous steps. For instance, if we reduced water flows by a certain amount, that might trigger an incident.” In such a case, PacifiCorp might need to review a history of water discharges, alert certain personnel to take action, and file reports with a number of regulatory agencies.

“We felt we needed a tracking and reporting system that could be very flexible and could handle extremely complex scenarios. Many of these compliance flow requirements are calculated values and may change on a monthly, weekly, or even on a daily basis,” adds Roppe.

New Solution Already Proving Its Value

The compliance management system has proven its value to PacifiCorp in a number of ways.

First, it gives the company an automated system that can handle the new rigors of licensing and compliance management. “For example, we continually monitor flow level from our projects. If the operation flow drops below minimum levels, we have rigorous reporting and notification requirements. Spread this across

over 50 facilities in 6 states and you need a system that not only monitors compliance but also supports the entire process – from discovery and notification to documentation and reporting.”

Second, with the compliance management system, PacifiCorp lowers its environmental risks. It uses the system to proactively avoid missing a compliance milestone, one that might result in a reprimand or a monetary penalty. The process keeps employees informed of their compliance responsibilities with reminders and notifications. It also acts to heighten their awareness of their responsibility to the environment and to the company's compliance commitments.

Third, the new solution helps PacifiCorp align the compliance process with the way the company works and so makes better use of employees' time. The system integrates with work management, scheduling, and financials to make compliance just another aspect of normal operations.

Finally, says Roppe, “It lets me watch the status of all projects. I don't have to take action unless a threshold gets crossed. And then I can create a new task to investigate and alert people to do what's needed.” Likewise, this feature provides upper management with a quick, real-time status check on compliance activities. “It automatically elevates incidents to upper management as necessary and alerts them – rather than surprising them – on issues,” adds Roppe. “It also satisfies the requirements of PacifiCorp's internal environmental governance and our ISO-conformant environmental management system.”

A System That Can Adapt to Future Needs

“When we began the licensing process for the North Umpqua system, much of this technology wasn't around,” says Roppe. At that time, adds Roppe, no one expected that they would have to publish compliance information in real time via the Web. But now that situation is a reality; PacifiCorp can handle it with their compliance management system built on SAP xEM. “And thanks to SAP and TechniData,” says Roppe, “we are developing a compliance management system that can adapt and respond to the compliance challenges of new licenses.”