

I.T., Not Just Elbow Grease, Help Utility's Recovery

By [Bob Violino](#) | Posted 2006-01-14 [Email](#) [Print](#)



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The electricity distributor restored service in September 2005 to its Mississippi customers within 12 days, instead of 28. A system to find critical documents offered an assist.

Talk about being proactive.

Southern Co., the energy company that produces electricity for much of the Gulf Coast region, began preparing for Hurricane Katrina more than a year before the storm struck.

In fact, even before Katrina's predecessor, Ivan, roared across Alabama in September 2004, Southern began taking steps to meet worst-case scenarios, relying on an

enterprise content management platform to ensure that engineers could get immediate access to design plans of electrical substations and other power equipment.

Workers at two utilities under the umbrella of Southern Co.—Gulf Power and Mississippi Power—took drawings of substations from the company's new content management database and burned the information onto CDs. The company's substation design group then distributed the CDs and laptop PCs to field engineers responsible for each of the substations.

After hurricanes Ivan and Katrina hit, engineers in the field were able to immediately access the design plans to begin work to restore power, including repairing damaged substations. Previously, engineers or maintenance workers would have to physically track down plans from a file, a process that took an average of two hours, according to Holly Godfrey, technical consultant at Southern Co. With the new setup, documents could be obtained within minutes.

While some workers viewed data to rebuild assets in the affected regions, others used the plans to buy specific parts and equipment. That enabled them to restore power faster, Godfrey says.

In fact, after Hurricane Katrina, all of Mississippi Power's 195,000 customers lost electricity, and two-thirds of the subsidiary's transmission and distribution was damaged or destroyed, according to utility executives. Power was restored to Mississippi Power customers within 12 days. Initially, utility workers estimated the work would be done within four weeks, according to a published report.

Southern CEO David Ratcliffe said the company's quick response to the outage was the result of several factors—most important, the company was prepared to respond to a disaster in its hurricane-prone territory. Though he did not single out the content management system, Ratcliffe on Nov. 16 told the Senate Committee on Homeland Security and Governmental Affairs: "At a high level, our success can be attributed to extensive pre-planning, excellent execution of a well-defined plan and significant help."

Southern Co., one of the largest electricity generators in the U.S., has 272 coal, oil, gas and hydro generating units at 68 power plants. It provides electricity to more than 4 million customers in Alabama, Georgia and parts of Mississippi and Florida.

Southern's operating companies, divisions and departments generate and share millions of documents, which range from engineering drawings of plant assets such as boilers to personnel data. Which is where content management enters the picture. In general, the software enables employees at organizations to create, store, revise and access information from the desktop as well as from enterprise applications such as supply chain and customer relationship management.

Until late 2002, Southern's power generating operations used a hodgepodge of custom applications and legacy systems to store and access digital content, as well as old-fashioned filing cabinets to store paper documents.

Digital information resided in any number of places—mainframe applications, homegrown databases and on local area networks. With no central location in which to store content, Southern had no control over versions of documents and drawings, and no way to easily identify the current version of a given document or keep track of who had access to which information. As an example, in the energy business, standards procedures change frequently. Under Southern's former decentralized catch-as-catch-can approach, an engineer had no sure way of knowing if the procedures being deployed were current or outdated.

Other content, particularly older information, existed solely on paper. That not only kept storage costs high, but made it difficult and time consuming for people to locate items. When technicians needed to replace an element at a power plant—a boiler, for example—they needed to locate documentation on the boiler itself as well as on all related systems. That often involved physically looking for paperwork, because much of the older content hadn't been converted to digital form.

"When we'd bring in contractors to help with upgrades or outages, they didn't know where to look" for information, says Godfrey, the technical consultant at Southern. Engineers and maintenance workers on average had spent two hours per day looking for content such as drawings, according to Godfrey. The cost in terms of productivity was high; employees lost time that could have been spent on initiatives such as plant upgrades or repairs. Even more important, the difficulty of locating content often hampered efforts to restore power after outages.

In November 2002, Southern deployed an enterprise content management platform from Documentum (since acquired by EMC Corp.) across its 71 fossil-fuel and hydro plants, as well as its generation and energy-marketing business units, to support more than 7,000 geographically dispersed employees and contractors. Vendor manuals, engineering drawings and maintenance data were among the 2 million documents moved to the Documentum system for central storage.

A goal—and result—of the implementation: speed up the amount of time it takes for Southern employees to locate information. How much more efficiently? The average search time for engineering drawings has improved from two hours per day to less than 10 minutes, according to Godfrey. The success rate for finding the right content on the first try increased from 50% in 2002 to 90% by 2005.

Setting up the content-management system, which involved

2 million documents, presented some challenges. Before loading content into Documentum, Southern had to match data from one legacy system with a second one. The former system was a database with text data related to drawings, but no images; the latter contained drawings without the related text. Drawings had to be matched with text. From there, the corresponding drawings and text were loaded into Documentum using a tool called DocLoader from McLaren Software. Over three months, three workers spent 75% of their time, and another worker 25% of his time, to get this match and load the information.

Volume testing and tweaking of hardware was required to maximize the throughput of the new system, Godfrey says. And Southern had to train thousands of employees; key personnel at each Southern location that used the system attended four-hour sessions. Southern also developed a half-hour video training program, and offered instruction in an auditorium-style group setting at remote locations.

Southern also retained Gimmel Group of Houston, a consultancy, to help plan its enterprise architecture design to support the content management system, including a server farm with Windows-based Web, file and content servers and a separate Oracle database.

Once the Documentum system was in place, Southern's geographically dispersed employees immediately gained faster and easier access to content, including vendor manuals, engineering drawings, maintenance data on plant assets, standard operating procedures and departmental documents.

Southern achieved its goal of consolidating data and retiring legacy applications, and today there's only one place from which employees can access generation drawings and other content. Three legacy systems were retired, resulting in savings of \$40,000 per year through the elimination of administration and hardware and software maintenance costs.

Shandeon Logan, a senior technician in the document services department at Southern Co. Generation, a business unit that operates the company's fossil-fuel (non-nuclear) power plants, says the elimination of steps in searching for content has made the department more productive.



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When Southern was still relying on legacy systems, Logan says, engineers looking for drawings had to first search one system to find a drawing number and then key the number into a second system to access the drawing. The Documentum setup combines these functions, saving time and reducing the likelihood of errors.

After seeing the results the content management deployment was bringing, other business units at Southern, including information technology, supply chain management, marketing and transmission, moved content from their own local networks and storage systems to the new platform. There are now about 9,500 people using the system throughout the 26,000-employee organization.

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The expanded use of the platform has brought further benefits. One is that Southern overcame the geographical limitations of its regional operating companies by providing for the first time an electronic, central repository of vendor contracts. This has eliminated the time spent looking for, copying and mailing paper contracts.

"Plant support personnel find design documentation is much easier to locate since the data and functionality of the legacy systems were consolidated in Documentum," says Jeff Pruitt, a senior information systems analyst who supports Southern Generation. "Before this implementation, a search for the current version of a document sometimes necessitated searching up to four legacy systems, and possibly paper and microfilm."

Perhaps most important for a power company, the content management system has led to increased reliability of its services to customers, because employees are better equipped to solve problems.

A *Baseline* analysis of major power outages in the U.S. shows that Southern Co. has restored power faster than other utilities (see "Quick on Its Feet," above). In 2004, Southern Co. responded to eight power outages, restoring electricity, on average, within 1 day and 20 hours. Of 65 other major disturbances affecting 37 utilities elsewhere in the U.S. the same year, it took an average of 3 days and 5 hours to restore power.

Southern declines to say how much it spent on the content management implementation, citing a non-disclosure agreement with Documentum. The company recently upgraded from version 4 of the system to version 5.2.5, which includes a new Web interface.

Tony Byrne, founder of CMS Watch, a Silver Spring, Md., consulting firm that specializes in content management technology, says it's difficult to estimate how much a project of this type would cost because vendors tend to charge different rates for different customers. But he says the entire project, including consulting and maintenance services, probably cost "from the high six figures to the low seven figures."

Measuring a return on investment for content management systems can also be difficult, Byrne says. "When you're talking about managing electronic documents, it's often very hard to prove an ROI," he explains. "It tends to be a cost of doing business," where a company needs the technology in order to be more agile or to improve records management.

. Base Case">

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Business: Operates Alabama Power, Georgia Power, Gulf Power, Mississippi Power and Savannah Electric.

Chief Information Officer: Rebecca Blalock

Financials in 2004: \$11.9 billion in revenue; \$1.53 billion in net income.

Challenge: Manage more than 2 million documents and other content, from technical manuals to engineering drawings of boilers and other plant assets, and enable employees in far-flung locations to easily access the information.

BASELINE GOALS:

Reduce average time spent finding content such as engineering drawings, from two hours to less than 10 minutes.

Increase the rate of success in finding the right content on the first try, from 50% to 90%.

Save \$40,000 a year by eliminating three legacy systems.