SEALSYSTEMS
THE DIGITAL PAPER FACTORY

Application Report

Maintenance Orders at Nebraska Public Power District

Plant Maintenance Orders delivered with document attachments in SAP®

On January 1, 1970, three separate utility companies in Nebraska (the Platte Valley Public Power and Irrigation District, the Consumers Public Power District, and the Nebraska Public Power System) merged to become Nebraska Public Power District. Since then, people have depended on the Nebraska Public Power District (NPPD) to keep electricity flowing to their homes. Today, NPPD serves approximately 1 million customers throughout 91 counties, utilizing a variety of generation sources, including hydro-electric, coal¬fire, and nuclear plants.

This public utilities company lives by the slogan: "Always There When You Need Us." This means not only keeping the plants and distribution networks at high levels of output, but also practicing strict safety standards at all times. A major part of maintaining this strict safety regimen includes scheduled outages every 18 months; during these outages, extensive maintenance is performed, covering all aspects of the plants, within a matter of weeks.

Of course, when dealing with something as complex and powerful as a nuclear power plant, there is no margin for error. Maintenance or repairs require extensive, highly¬-detailed work packages to ensure proper safety protocols are followed at all times. At NPPD's Cooper Nuclear Plant alone, approximately 100 people rely directly on these work packages for maintaining the facility (although, clearly, the importance of these documents extends far beyond those working directly with them, impacting the safety and

quality of life of the entire community).

These work order packages are maintained inside SAP's PM module, and each package requires additional document attachments in order to be complete.

Unfortunately, the massive attachments accompanying the work packages proved extremely difficult to compile. Different attachments were stored in different servers, rather than linked to Document Information records in the Document Management System. This being the case, the cumbersome printing process required an employee to draw up each attachment in it's native application, print it separately, and then compile the entire work package by hand. There was no simple way to print the attachments out of SAP. Even after the attachments were printed, they bore no identification to indicate which work package they belonged to. Each Plant Maintenance order could have anywhere from 1 to 15 attachments, and each individual

attachment could range anywhere from 40 to 200 pages long (one even tipped the scales at 1100 pages!). It took seven employees, and a lot of grief, to assemble these packages.

In an average month, 550 work packages were produced. A normal package would take 9 minutes to assemble, or 82 hours a month. While that figure sounds substantial on its own, it pales in comparison to the workload during outages, when the numbers triple: an average 1600 work packages were produced, some with literally thousands of pages of attachments. This translates into 240 hours per outage!

Though it was common knowledge within the plant that the method for printing work orders was less than ideal, few people knew just how overwhelming a challenge it could be. That would soon change. During a particular scheduled outage, when the demand for work packages intensifies greatly, Kyle Pavel, a business analyst for the nuclear plant, assisted the employees in assembling the work packages. ''It was very frustrating, tedious and timeconsuming,'' she recalls, ''It was just a mess.''

Clearly, something had to be done to improve this process.

An inhouse solution was sought, but proved impossible. The massive coding job would have proved far too costly to have been feasible.

Finding no resolution within the company itself, Kyle looked for outside assistance. ''At the time, SAP had come out to conduct an engineering assessment for [the nuclear plant],'' Kyle notes. Kyle met with SAP and explained the ''painful, time¬consuming'' printing process currently

being used at the plant. The SAP representative directed Kyle to look at SEAL Systems as a potential solution, with whom SAP already had a respectful, productive business relationship.

As mentioned previously, one of the greatest flaws in NPPD's original printing process was the tedious process of retrieving each attachment, printing it, and then compiling it which took substantial operator intervention. SEAL Systems worked with Kyle and her Cooper Nuclear Plant colleagues to address this problem, and several other issues as well. The new SEAL Systems process distilled the printing of work packages down to a single step. The entire work order could now be printed as a single unit.

The fact that the attachments include many types of documents was also taken into account by SEAL Systems. Specialized attachments, such as graphics or drawings, are sent directly to a plotter during the course of the print job, rather than requiring an employee to print and then retrieve the attachments separately.

In addition, every attachment in the package now received a watermark stamp, identifying the work order it belonged to and its sequence in the package. This assures that, not only will the correct, most recently updated documents be included in the work order, but they will appear in the right succession. Not only that, but it guarantees that the attachments can be restored to their correct order, once they return to the plant. Often the attachments become split in the field, where a worker can make notations on the document. This information has to be returned, in its entirety, to the Work Package Center to ensure complete documentation of the Work being done. By utilizing SEAL Systems' identification methods, this task has become a much easier process.

The advantages of plant maintenance workflows

The benefits of the SEAL solution are easy to see, and not just from the smile on the employee responsible for assembling all those work packages. Prior to implementation, an average work package took 9 minutes to assemble. After adopting the SEAL printing process, the time was slashed to 1.5 minutes. This means a savings of 69 hours during an average month, but a huge savings of 200 hours during an outage. In addition, the number of people required to produce the packages was reduced to one individual, as opposed to the 5 or 7 people needed prior to the SEAL solution.

About Nebraska Public Power District

Nebraska Public Power District is Nebraska's largest electric utility, with a chartered territory including all or parts of 86 of Nebraska's 93 counties. NPPD's revenue is mainly derived from wholesale power supply agreements with 50 towns and 25 rural public power districts and rural cooperatives who rely totally or partially on NPPD's electrical system. NPPD also serves about 80 communities at the retail level.

With the help of SEAL Systems, Nebraska Public Power District was able to increase the efficiency of their operations. "We're very happy," Kyle Pavel, business analyst, reports, "We've gone from a time intensive process to a very streamlined process, where one individual can handle the entire workload." Quite a change from the "painful" experience during previous outages! By utilizing the benefits of the SEAL Systems solution, Nebraska Public Power District can spend less time and resources worrying about their printing, and more time focusing on serving their customers.

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