

Spring Outages Completed at Plants

Scanner Magazine – July 2008

The Spring maintenance outages at Plants Morrow and Moselle are finally complete, and plant employees look forward to the challenges of meeting summer load demand. They are also looking forward to getting some much needed rest.

Morrow's Unit 2 began its scheduled five-week outage in February and was successfully returned to service at the end of March. Crews performed routine annual maintenance, as well as burner inspection and replacement, boiler chemical cleaning, and stack repairs.

The Unit 2 project went according to plan—work was completed a day early and the startup process was smooth.

The planned outage for Unit 1 began on April 6 and was scheduled to be completed within six weeks. Among other projects, the unit underwent a complete turbine overhaul, which only occurs every six or seven years. In addition to normal inspections and maintenance, other major projects included installing new crusher dryers, relining the Unit 1 stack, and rebuilding the ball mills (coal pulverizers) for the first time since the plant was constructed in the late 1970s.

The outage had to be extended when the turbine overhaul revealed unexpected damage to some of the turbine blades. The entire rotor was shipped to a General Electric facility in Atlanta for repairs.

"We think part of the nozzle block partitions, which also showed damage, broke off and went downstream. This may have caused some of the damage to the rotor blades," said Jeff Brown, mechanical maintenance superintendent. "Any time small pieces of debris get into the steam path, they are likely to cause problems. We had to replace the nozzle block and first stage turbine blading on the rotor. A crack was also discovered in a blade in the L-1 (next to last) stage on the generator end. We decided to replace both L-1 stages, generator and turbine ends, due to this crack and previous failures in this stage."

This was the first time a turbine overhaul was completed by contractor crews as a turnkey project. Plant crews supplemented the effort by providing technical assistance, doing machine work and supplying parts from inventory and through purchase.

For many employees, including Brown, the work meant different roles and responsibilities than in the past. "I had to switch gears from focusing on a few specific projects to overseeing the whole outage," said Brown, who was named to his position during the Unit 2 outage. "We also had several other people who were new or had new positions, so everyone focused on working closely together. Most importantly, there were no serious accidents."

Unit 1 startup activities were initiated during the Memorial Day weekend, and the unit was returned to service on May 27 after being down for seven weeks. It was taken off line for several additional days three days after the startup to repair steam leaks in the turbine and external piping.

“That is why we do preventive maintenance,” said plant manager Charles Stuart. “We are approaching our peak generating season and could have encountered dire consequences had we not discovered the damage to Unit 1.

“This was an excellent job by everyone involved,” Stuart said. “We faced some daunting tasks but got through it, and now we should be ready to meet our summer load demand.”

Morrow crews will now turn their attention to other routine maintenance and projects in the coal yard to repair the conveyors and structures that move coal to the plant.

At Plant Moselle, in addition to routine spring maintenance projects, GE contract representatives replaced the Unit 1 switchgear. The main and tie breakers were replaced with vacuum style breakers, the boiler feed pump breaker was replaced with a soft start, and the FD fan, circulating water, and 480-volt breakers were replaced with latching starters. In addition, plant crews replaced the oxygen analyzers on Units 1 and 2. This was done due to the unreliability of the existing analyzers. Prior to the installation, testing was performed on the boiler exit duct in order to better position the new analyzers.