

## WisImage Speeds Documentation of Engineering Changes at a Power Plant



WisImage was successfully used at a power company in Taiwan. It met the challenges of working from a large store of Mylar films to efficiently carry out the configuration management of one of several operating power plants.

### About the Customer

The customer owns and operates several power plants and supplies 33,000 MW of electricity on the island. The power plant in question was built in the period of rapid industrialization (1970s and 1980s). The construction of the plant started in 1972; it started producing electricity in 1981.



At the power plant two departments use and manage a large set of drawings. These engineering drawings were created by the power plant contractor and number about 160,000 and are on Mylar film. A subset (20,000 to 30,000 drawings) is frequently needed. A physical change to the power plant is called an

engineering change (EC) and must be correctly documented. An EC typically requires 200 to 300 drawings to be updated. Originally the workflow consisted of the following groups of steps:

Archiving (carried out by the administrative department)

- The Mylar film is microfilmed.
- A microfilm copy is made from the original microfilm.
- The first microfilm (archival microfilm) is archived. The copy is available for viewing.

Viewing a drawing

- A viewing copy is requested from the administrative department.

To archive the engineering change (EC) the above processes are necessary:

- The original Mylar is requested from the administrative department.
- The engineering change is made on the Mylar original (by hand) by the design department.
- The administrative department carries out the archiving steps (listed above).

### **Problems when Documenting Engineering Changes**

The experience at the power plant showed that the updating the Mylars and microfilming not only took a long time, but the results were of poor quality. The configuration management requirement means that the archival steps have to be carried out. These steps took a significant time: often two to three months were required from applying for the original Mylar to the completion of archiving of the changes. In some cases due to delays in microfilming the process took upwards of six months.

Quality problems associated with the work flow include the use of pencil on Mylars (leaves a trace even when the original ink is erased), use of ink pen (changes cannot be undone), areas of frequent changes (uneven gray tones arise compromising the clarity of the document). These changes by hand are inconvenient, time consuming and often result in bad quality.

Clearly the current status needed to be changed – but how? The problem is how to avoid the expensive unsatisfactory process of manual redrawing. Even, the traditional approach of digitizing (tracing on a digitizing board or tablet) is time consuming and significant errors can enter. This is not acceptable as a new quality control would be required for every digitized drawing. Only a scanning and raster editing software can remove the manual work and avoid the costly new overall quality control.

### **The WiseImage Solution**

Initially 6 licenses of WiseImage and 2 licenses of WiseImage Pro were purchased. Later additional purchases, increase the seats to a total of 10 (WiseImage) and 4 (WiseImage Pro).

The new workflow is the following:

1. Scan a drawing into WiseImage
2. Raster edit the drawing in WiseImage.
3. Use MicroStation and WiseImage together.
4. Modify the drawing in WiseImage.
5. Merge the modified raster drawing with the original.
6. Print the updated master.
7. Save the new master drawing.

The speed of the workflow has been greatly improved as a result of adding WiseImage to the process. The archival process now takes as little as one week instead of several months. This also results in greater Employees satisfaction from their work.

Support consisted of training for about 20 engineers and technical personnel, a discussion of the application of WiseImage, and feedback on the WiseImage functions. The service offered to the customer includes quick response to questions after the training and the possibility to upgrade or extend the warranty.

### **Conclusion**

With WiseImage a slow, laborious, low-quality workflow was replaced by a fast, efficient, clear workflow that left the workers happier with their contribution to the process.



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