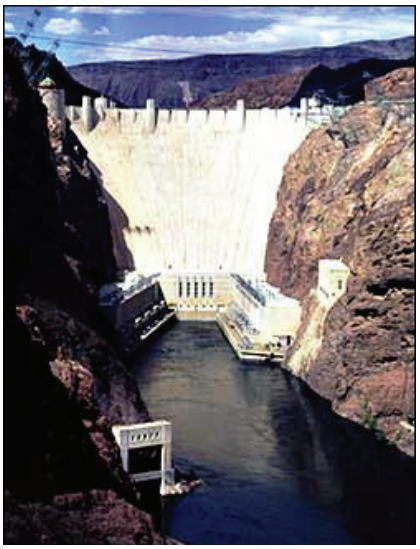
Distribution Network Data Intelligence

Project Spotlight

City of Boulder City, Nevada -Home of the Hoover Dam



Embracing Technology

By Ned J. Shamo, Electric Utility Administrator

For a number of years I had been concerned that the electrical system maps that we had in Boulder City, left much to be desired.

We had a mapping system that had been started when the town was first built in the 1930s; the United States Government built the town to serve as the construction camp for Hoover Dam, and they had developed a pretty good set of maps, and were fairly good at keeping them current. However, over time, the maps got further and further out of date and sporadic attempts to bring them up to date were usually met with only limited success.

Nevada Power had gone through an extensive evaluation of various mapping companies. A result of that evaluation process was the decision to choose JCMB Technology to do their mapping.

We continued to collect subdivision and other kinds of maps that were generated in response to various construction related projects, but they lacked any kind of uniformity or completeness. We literally had hundreds of different kinds of maps and "sketches" that were scattered everywhere. Over two thirds of our system is underground. Without accurate maps, it is almost impossible for someone who is not intimately familiar with the system to come in and troubleshoot a problem.

Like most small utilities, we have not had much turnover in personnel over the years; and pretty much everyone associated with the department had gotten to know the system very well. That works well for those who have been here for a long time; unfortunately, it can be a nightmare for the new guys coming on. We were beginning to experience that as some of our older, long term employees began to retire. It became apparent that we needed to bring our maps up to date so that the next generation of linemen and administrators would have something to work with.

Three years ago we hired an ex-Nevada Power employee to fill a vacancy in our line department. He had been involved with their computer mapping program. Nevada Power had gone through an extensive evaluation of various mapping companies. A result of that evaluation process was the decision to choose JCMB Technology to do their mapping. He was pleased with how well JCMB worked with Nevada Power. They proved to be flexible and were very responsive to suggestions to make the system more workable and user friendly.

We had made a couple of attempts to start a mapping program using our own personnel, but kept getting bogged down due to our own inexperience with unfamiliar software. Our new employee explained the system that Nevada Power had adopted and encouraged us to take a look at it. We made contact with Bruce Seidel of JCMB. He visited with us and introduced us to JCMB. He said that they were interested in getting into the small utility market, and felt that they could provide the service that we were seeking at an affordable price.

Today we are much more comfortable knowing that we now have a map of our entire system that is probably at least 95% accurate.

We subsequently contracted with JCMB to do the work. A short time later, a representative of their company came on site and began compiling data. She spent two weeks going over every map or sketch that we had. She cataloged and then scanned them into a database.

Technicians in Montreal then began the lengthy process of combining them all into a system database. For the next several weeks we received numerous packets containing map printouts of different areas of our system. Whenever the technicians would come across something that did not seem right, they would fax down a section of the completed map with a "query", or question about a particular transformer, line segment, or connection point, or some other mapping question. We would then research the issue and send back the correct information. This process took about 3 to 4 months.

Our linemen appreciate having maps that they can rely on when they are called out in an emergency, and our engineers now have a convenient and accurate tool for future planning..

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Photo credits: U.S. Bureau of Reclamation, January 2000. Photographer: Andrew Pernick

Eventually we had an electronic map of our entire system. For the next year or so, we spent time reviewing the map for accuracy. Any errors were noted and sent back to JCMB for corrections to the final map.

As with any mapping program, ours continues to be a work in progress. We are constantly making corrections and updates, as new lines and equipment are added to our system.

At some point we will probably begin to do much of the updating with our own personnel as they become proficient in the mapping program. Also, there is still much work to be done in building attribute tables for all of the lines and symbols, and we still need go into each junction location on the map and open or close junction points in order to build a working model on which we can perform actual circuit traces. Because we are a small utility, we cannot afford the luxury of having a full time person to do this work, but eventually hope to have someone who can do it on a part time basis.

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