

Remembering—B.C. McCabe and Ben Holt

by Susan Fox Hodgson

Richard Campbell, the new GRC president, has spent a great deal of time with the geothermal pioneers B.C. McCabe and Ben Holt. In 2011, embarking on his presidency, he looks back at working with these two men.

S: Describe your relationships with Ben Holt and B.C. McCabe.

R: Well, I started at the Ben Holt Company straight out of school in 1976. Several years after that, Ben asked me to optimize a binary-cycle process for the Mammoth geothermal site. It became apparent to me, after working on it for a few weeks, there were a lot of advantages with going to air-cooled condensing, rather than water-cooled condensing—what the original expectation was.

At that time, Ben was working very closely with B.C. McCabe, known as Mac, at Magma Power Company, with offices in a beautiful old house in Los Angeles. Magma had the Mammoth lease so we were going to be paying a royalty, but Magma was interested in how we were going on that project. When I first recommended to Ben to use an air-cooled, binary-cycle power plant, he didn't like the idea and Mac didn't like the idea either. Here I was, this kid in his twenties, trying to convince these two giants of the industry that air-cooled condensing was the right way to go.

When finally I was able to convince those two, I figured I probably had the right idea and could probably convince anybody. Because of some problems, it took several years to get a power purchase agreement, but the project was built in 1984—so successful it was expanded in 1990 to quadruple the size. That's how I, as a young engineer, got to work with Ben and Mac. In the early stages, we were pretty much the only three involved in an interesting project that proved to be great.

S: How did you convince them?

R: Well I had to have the numbers to back it up, with justifications. When I was able to lay it out over the course of a full year—calculating the revenue on an hourly basis and showing the income would be greater and the other advantages, such as no cooling tower plume in an environmentally sensitive area—it was a pretty convincing argument. But it had to be rock solid with those two.

S: Were there other examples of air-cooled power plants you could point to?

R: No. We had used air coolers in oil-refinery work, so I had some experience with air coolers—but not an air-cooled condenser in a binary-cycle power plant.

S: How were their personalities the same and how were they different?

R: Both of them, of course, were extremely intelligent men. Ben tended to be one who would really listen, sit there pretty quietly and then show really outstanding judgment because he could take everything in and sort it out in his mind and understand it and then come up with a really clear and lucid reply. Mac, perhaps, tended to be a little bit more open and upfront, but both of them certainly understood everything they were told and they could look at the details and understand the big picture too.

S: Have you met other people like them or do they really stand alone?

Geothermal History

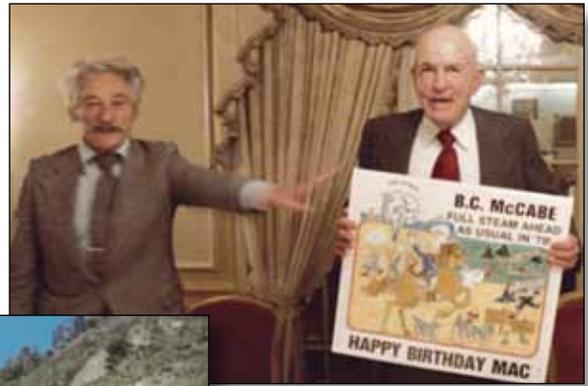
R: I would say they stand alone. I've known a lot of great people in this industry. But I worked with Ben for 23 years and he was my boss. When he retired to a consulting role, I became president with the interesting situation that he was suddenly working for me. I was able to see a different side of Ben—that he really cared about the people working for him and their situations, although sometimes he might have appeared a bit gruff. I didn't have that opportunity with Mac, but I did spend a fair amount of time with him.

S: Talk about working with Mac.

R: Here is a quick story about Mac. Prior to doing the air-cooled, binary-cycle power plant at Mammoth, California, we had a direct-use snow melting and space heating demonstration project, partly funded by the California Energy Commission and partly by the US Department of Energy. We—the Ben Holt Company—had rented a vertical-turbine production pump from Magma and I was the process/project engineer on the job.

One day I was at the geothermal well, which was a little bit remote, down a dirt road. I was in the process of changing out the lubrication pump and having some trouble getting all the fittings to go exactly where they needed to be. I had oil all over me and was working down on my knees changing out this pump. I was struggling, trying to get everything to fit and saw this Cadillac coming down the dirt road. I thought, "Doggone it, I don't want to have to deal with some skier that's coming to look." (Because there was a fumarole there, a natural fumarole, that attracted quite a bit of attention.) I walked over to the Cadillac, and I'm actually kind of angry. I can't get the pump in and there's this skier interrupting me.

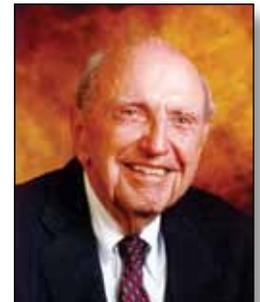
Sure enough, it was Mac. I apologized for being covered with oil and he ended up giving me a tour. The two of us just drove around and he showed me where the wells were that were drilled in the 1950s. What I remember most was that he really wanted to put a spa there. He didn't really



B.C. McCabe holds a large birthday card at a party in 1979 and Joe Aidlin points to "The Geyser."



B.C. McCabe standing at the site of well Magma No. 1, the first modern geothermal well drilled at The Geysers Geothermal Field.



Ben Holt.

care about the power plant. He felt the curative properties of the geothermal fluids, the vapors, and the hot waters—with the minerals dissolved in them—were the most important aspects of the geothermal resources at Mammoth.

After that whole thing was over, I called Ben Holt to tell him about it. Ben said, "You could never have made a better impression on Mac than what you just described." So that was good.

There's another story about Mac I've heard from people in the Imperial Valley, where the Vulcan geothermal power plant and other Magma projects were located. Mac would go down there wearing one of his nice, long-sleeved shirts and he'd just say, "Doggone, it's hot here." Not necessarily doggone, but he'd say, "It's hot here," and he'd take out a pair of scissors and cut the sleeves off. In many ways, he was quite a character. ■



Richard Campbell.