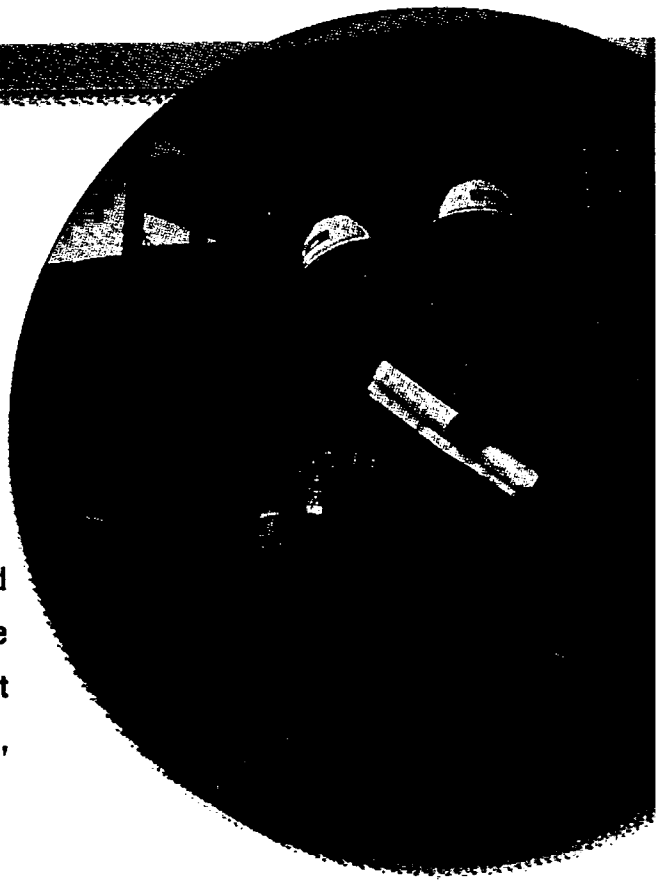
When quickness counts



Anita S. Becker

The elements of cooperation, coordination and coincidence came together this summer to produce remarkable results for Bell Atlantic's outside-plant construction for PennWell's new building in South Nashua, New Hampshire.

PennWell, the Tulsa, Oklahoma-based parent company of *Cable Foreman* and nearly 40 other trade publications, expects to have dialtone by Thanksgiving at its new location at 98 Spitbrook Road. What makes the date unusual is that the initial planning meeting among the customer (PennWell), property owner Flatley Corp., building contractor Pro Con Construction and Bell Atlantic was on June 5. The publishing house will be able to consolidate its three New Hampshire offices into one location for approximately 300 employees in the region before Christmas. This is, in part, thanks to an effort by Bell Atlantic and its contractors to expedite into a six-month timeframe a telecommunications project that usually takes more than a year.

The telecommunications system for the new building was built to accommodate PennWell's anticipated growth needs as well as Bell Atlantic's future plans for the local exchange area. "Given the number of lines PennWell wanted, we looked at Litespans and virtually brought the central office to the customer location," explains Bell Atlantic engineering specialist Dave Johnson, who was project manager for the job. The Litespan electronics system was put outside in a newly constructed controlled environment vault (CEV), about 40 to 60 feet in front of the new building.

Because the CEV is beneath the earth, it must be monitored remotely. The vault is wired with various environmental and security alarms. "The alarm system automatically notifies the main location that monitors all the remote terminals," says Johnson. "We also have a power alarm at the CEV. It automatically goes to a battery back-up power source (during an outage), so the customer won't even know the power has been interrupted. Then, a technician will be dispatched to power the vault with a generator."

Technology for the future

PennWell will be served by an optical digital loop carrier system. The services will consist of POTS and special services, such as 1.5-Mbps, 56-kbps, ISDN and DID (direct inward dialing) circuits. Laptop computers at the South Nashua Bell Atlantic central office and with the field technicians are used to turn up and test the system, and either end can activate the dialtone in the vault.

"We initially provisioned the Litespan to serve only 98 Spitbrook Road," explains Johnson. "But, we provisioned growth for a three-year period. We will revisit the plan annually to see what the fill percentage is and how much of the system is being worked." The state-of-the-art telecommunications system Bell Atlantic installed allows the company to do an upgrade in the South Nashua exchange in the near future. It could be as early as next year.

The most critical coordination point for the project occurred during the placement of the CEV. The 50-ton unit was lifted by crane, contracted through Able Crane (Merrimack, NH), and was installed in three pieces. "The biggest challenge we faced on this project was the window—the condensed time-frame," says Johnson. "A normal interval for a CEV is a year or more."

One of the other key ingredients for success was in locating a CEV ready for placement. Contractors ROTUNDO (Avon, CT) and CDTI (Westborough, MA) came through with a vault and equipment platform from nearby Massachusetts that could be used right away. "We have good relationships with our contractors," says Johnson. "Generally, we plan jobs more than a year in advance. So, here, the contractors had to expedite the process." The three pieces of the CEV assembled for Johnson included two rectangular concrete enclosures and an equipment platform containing the Litespan already mounted on relay racks.

The team needed a power pedestal for the CEV and initially had troubling finding one due to the short turnaround time. Johnson credits the work of engineering specialist Roger LaPointe, a design engineer who procured the Litespan for the enclosure, with solving their

Teamwork between Bell Atlantic and its contractors will expedite into a six-month timeframe a telecommunications project that usually takes more than a year.

problem. "The standard interval for ordering a power pedestal is 16 weeks," says Johnson. LaPointe not only found one in under a month but also was able to have the pedestal arrive at the same time as the Litespan.

"Roger's job is to order what my team and I need for the project," says Johnson. "He also handled the power pedestal because it was a problem. It made sense to have one person order the parts and have them married up at the same time. He saved me a lot of time."

Condensing the schedule

Quick turnaround on the necessary property easement was another challenge that cooperation made possible. "Because of the short interval on getting the CEV in, we did not have a lot of time to get an easement," Johnson explains. "I didn't really have time to wait for an easement, but Glenn Mills—who has a good relationship with Flatley—was able to get us a strong verbal approval so that we could start our major engineering effort."

Bell Atlantic right-of-way specialist Mills had an easement letter signed by property owner Flatley Corp. in hand by August. Three weeks later, on September 22, the CEV was placed in the ground. "Flatley really wanted to build the building for its tenant PennWell, which helped us procure the easement," Johnson says.

To make the overall condensed schedule work took the effort of eight key players at Bell Atlantic and 10 subcontractors spanning three New England states. Open lines of communication with contacts at PennWell, Pro Con and Flatley were also essential. Because Bell Atlantic was simultaneously building the outside plant as Pro Con was constructing the building, job site and roadway coordination between Johnson and his Pro Con counterpart, Wally Ryan, was critical. "We had to ensure that we wouldn't be in each other's way," Johnson says.

The precision coordination of the work of 10 contractors is a feat in itself. Kathleen Dumaine, contract work administration manager for Bell Atlantic's New Hampshire and Vermont territories, played an important role in scheduling the contractors for the project. For instance, when crews encountered ledge while digging, she quickly contacted Haron Company (Hooksett, NH), the lead contractor, who in turn hired American Explosives (Raymond, NH) to blast out five feet of ledge.

Dumaine also was instrumental when temporary power was needed in a hurry and there was no source on-site. She made a few calls and within a day was able to provide a contractor, JCR (Raymond, NH), to place a pole. Dave Johnson then was able to have Manchester, NH-based utility Public Service Company of New Hampshire hang a transformer and run service wire to the site from across the road to the new pole, followed by Soucy Electric (Manchester, NH) connecting the power for the CEV. In addition, Lucas Tree (Plymouth, NH) was called in to trim the trees in the area on short notice so that site work could be started. Morin Landscaping will come in at the end to place weed barrier, bark much, shrubs and maple trees near the hatch of the CEV.

Testing the plant

Coordinating testing of the plant was also part of the plan. Engineering specialist Scott Weigler, who formerly did plant testing, says the POTS lines will be tested using a mechanized loop testing system (MLT). It will test the network to find resistive faults, such as shorts and grounds. For PennWell's special services, a combination of a switched access remote test system (SARTS) and MLT will be used. MLT will be used to test ISDN lines, and SARTS will test 56k, T1 and the other special lines.

Additionally, optical time-domain reflectometers (OTDRs) will be used to test the new fiber cable for the system. "We are constantly upgrading our equipment," Weigler says. Outside technicians will do end-to-end optical fiber testing before the Litespan is put on line. "We will check each splice," explains Weigler. "If we have one bad fiber at any location, we know right where to go to clean it up." After the Litespan is installed, dedicated technicians will maintain it.

Doug Allen, loop technology planner for Bell Atlantic, spearheaded the team's "fundamental plan." The planning package describes Bell Atlantic's overall concept for the South Nashua exchange. "We had to plan the right network to allow us to do what we want to do in the future. Doug makes sure the plan is justified—logically and economically." In this case, placement of the CEV for the PennWell project dovetailed perfectly into Bell Atlantic's big-picture view for the area.

Location, location, location

The project worked out so well because of location. The PennWell site is in the exact place where Bell Atlantic had wanted to put a CEV to expand capacity for the South Nashua exchange. "It was a perfect match. It was pure luck—coincidence," exclaims Johnson. PennWell and Flatley had an immediate need: telecommunications service for their new building. It just happens that their need intersected with Bell Atlantic's long-term goals.

Construction at the PennWell site included digging for the installation of a controlled environmental vault (CEV) that will serve the new building and allow Bell Atlantic to upgrade the entire area in the near future.

"We were interested in the geographic area anyway," explains Johnson. However, without the trust and approval of Lee Hicks, area operations manager for the southern New Hampshire design build team, Johnson would not have been able to move forward with the rush status on the project. "The Bell Atlantic force was behind me and committed to allowing me to do this project in a compressed timeframe."

During the course of building the outside plant, once again taking advantage of the project's fortuitous location, Bell Atlantic will also be able to conduct a field trial of an 8100-pair serving area interface (SAI). The large-capacity crossconnect box allows Bell Atlantic to service PennWell's new building. Also, the Litespan will feed some of the existing service area, including several condominium complexes currently served by a 2700-pair SAI. The 8100-pair unit will be used as an access point to the entire network in the area. "Doing it this way eliminates the guesswork in service provisioning," says Johnson. He sees the 8100-pair SAI as "a major labor-saver for us." The interface eliminates the need for technicians to continually enter the CEV to add more channel-unit cards.

The PennWell project involved Bell Atlantic and 10 subcontractors spanning three New England states. The compressed timeframe required precise coordination between the telco and other construction crews.

The teamwork doesn't end with the completion of the construction. Maintenance, troubleshooting and expansion of the plant after its installation were also planned for. Engineering specialist Sue Stamas has participated in the planning from the first meeting with the customer. She has observed the process of building the Litespan from start to finish because she is involved in Bell Atlantic's day-to-day engineering issues for the South Nashua area. Stamas will also assess the Litespan's future expansion needs.

Overall, Bell Atlantic's PennWell project is a study in organizational management. Despite the inevitable wrinkle or two along the way, the team showed that open lines of communication, innovative problem-solving, building good relationships and having a focused plan can reap notable results. "I was very impressed by the team effort," says Johnson. ❑

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