Trenchless Technology Center Newsletter

December 2005

Innerseal Donation

This past summer saw the evolution of a valuable boost to the TTC research programs. A firm in the Boston area, New England Utility Constructors Inc. (NEUCO) had for the previous several years been developing a robot that could carry out joint sealing work in live cast iron gas mains. The need and potential benefits for such a development had been recognized by a NEUCO employee and a company to pursue the development of the robot was established by NEUCO as the "Innerseal" Corp.

With support from NEUCO, the Gas Technology Institute (GTI) and regional gas utilities, three robot prototypes were sequentially developed – each reaching an improved level of sophistication and successful field trials in both live and off-line gas mains were achieved. In spring 2005, NEUCO pursued the initiative of finding a strategic placement for the research and development that had been done. This raised a key question about the best way in which to deal with the legacy of a multimillion-dollar investment in the development of the robotic system. While several options were available, Ed Bond was instrumental in the option of donating the R&D operation to an academic organization that would be in a position to both continue development work on the robot and to use the ancillary research and test equipment effectively for future benefit to the built environment.

A natural choice for the donation became the Trenchless Technology Center because of its 14-year history of assisting the development and testing of trenchless methods for underground utility work. TTC provided a strong potential for the continuation of the R&D efforts for joint sealing in gas mains and the prospect for adaptation of the robot principles for similar work in other buried pipes. In the discussions that ensued, involving Bond, TTC and GTI, it became clear that many synergistic possibilities could evolve – not only could TTC provide a means to conserve the intellectual property developed by Innerseal in terms of its patents and "know how" but that the donation would provide many useful equipment items that would be valuable as the new National Trenchless Technology Research Facility was constructed (planned for 2006). Furthermore, the robot platform designed for live entry into gas pipes through a relatively small entry port would provide an excellent research platform to support laboratory and field trials for many types of equipment for pipe assessment and rehabilitation – avoiding the need to create a new platform for each technique to be tested.

Following Bond's recommendation that an equity donation would benefit TTC was the way everyone wanted to proceed. But he details of the donation and transfer of the firm needed to be worked out. Essentially a complete laboratory and the three existing prototypes would be transported to Louisiana Tech University from Boston and the Innerseal trademark and other intellectual property including its patents would also be transferred. The Louisiana Tech University Foundation, Louisiana Tech University's Office of Research and Development and its Office of Intellectual Property and Commercialization all collaborated on how to properly accept and handle such a donation.

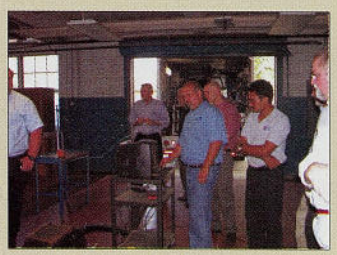
Bond

Ed Bond has more than 25 years of service in the construction industry. He started his career working in New England Utility Constructors Inc., involved with all aspects of the firm and providing services to the energy firms across New England.

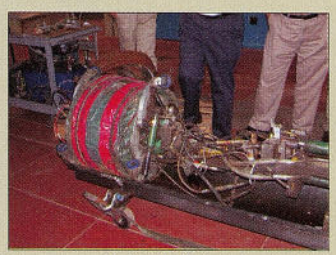
He has been equally involved with the operations at Bond Bros. Inc., which provides construction management services for building, civil and utility projects for many of the institutional, industrial, commercial and energy firms around New England. Bond Bros. was started in 1907 and Ed is the fourth generation of the Bond family managing the firm.

By the end of summer, most of the arrangements for the donation had been settled and on Sept. 20 the latest version of the robot housed in and supported by a Freightliner truck arrived in Ruston, La. This represented the final part of the shipments that had been arriving during September.

With the completion of the formal donation process, TTC is eagerly assessing the way to continue the robot research forward and to use the robotic capabilities in several of its current and planned research projects. TTC also will be glad to work with companies or other universities to use the existing robotic platform as a test platform for pipe inspection and rehabilitation technologies. Tony Winiewicz, former director of engineering for Innerseal who is a mechanical engineer by training, has been a great help in facilitating the transfer of the physical assets and know how and has already conducted several training sessions with TTC faculty and graduate students in the use of the equipment.



Tony Winiewicz demonstrating the Innerseal at the TTC IAB meeting in October.



Robot Inflation of the joint sealing unit.

The donation of the entire Innerseal process represents a major milestone for TTC both in terms of its opportunities for the further development and commercialization of robotic work in pipelines but also in terms of its rapidly expanding research equipment base. Bond's generous and major donation reinforces the significant donations of funds for the new