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This project is focusing on the design, construction and testing of a prototype segmented MFL sensor system for ultimate integration into a robotic platform for the inspection of unpiggable transmission pipelines. The effort was initiated in December 2004 and at the conclusion of this first quarter in March 2005, the project has progressed well.

The major issue facing the concept development phase, is the requirement that the sensor and entire robotic platform are able to pass through a plug valve in a transmission pipeline. The restrictions imposed on the sensor in such a case are severe, necessitating the use of segmented sensor elements, each able to fit through the plug valve. Once the elements have passed through the plug valve, they can be potentially arranged in different ways to accomplish that task in hand.

A sensor concept has been selected for more than eight considered. The selected design offers maximum resolution and accuracy in wall thickness measurement, and minimum need for software development. A shunting mechanism was designed and tested via a prototype sensor/shunting system with great success.

The project now moves into its third quarter during which the detailed design of the sensor module will be undertaken.