

**Public Page**  
**A New Approach to Control Running Fracture in Pipelines #141**  
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During the fourth quarter, the investigation of empirical functions that can be quantified using data from full-scale running fracture test results continued. The form of the function currently being investigated gives the crack velocity as a function of the pipe size, the dynamic wall stress, the fracture toughness, flow stress, and the distance the crack has traveled. The function has been used with the pressure-velocity response of the gas used to pressurize the pipe, to estimate the propagation distance of a running crack. Sensitivity studies are being conducted to establish the influence of the various pipeline design and operating variables. A major emphasis in the current quarter was developing a software packaging for the analysis methodology. In addition, a Charpy toughness correction that has been validated via full-scale burst testing was incorporated into the software. In addition, the software was used to conduct sensitivity studies that addressed the effect of the mechanical properties of the pipe on its ability to arrest a running ductile fracture.