

PHMSA/DOT PROJECT UPDATE ASME PCC-2 CODE COMMITTEE

Michael W. Keller, PhD, PE
19 February 2014

Research Overview



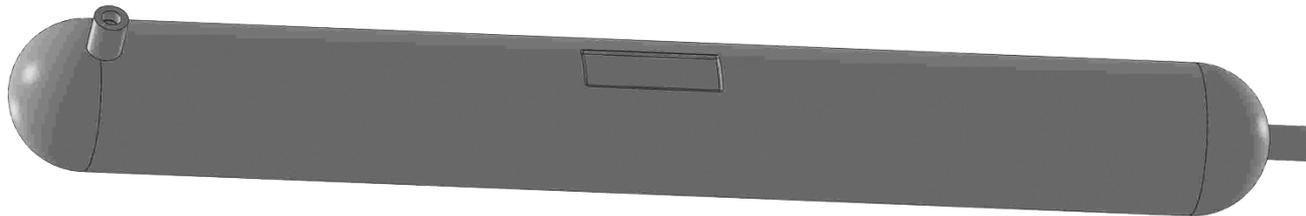
Two Primary Goals

1. Determine the performance of 'Patch' vs. 'Full Encirclement' repairs for non-through wall defects
2. Investigate scaling effects from 'small' sample performance to 'large' sample performance

Experimental Approach

Patch Performance

- ▣ Patch flaw in 4 or 6 in pipe
- ▣ Pressure fatigue test
- ▣ Two or three specimens per repair approach
- ▣ Unrepaired control



Experimental Approach

Scaling Investigation

- ▣ Larger pressure vessel (36 or 60 in diam)
- ▣ Patch flaw
- ▣ All repairs are patch
- ▣ Pressure Fatigue testing

Current Progress and Timeline

- Student has been identified and has been accepted to graduate school
- Sourcing material
- Analytical modeling for fatigue is ongoing
- Expected student start date is early May
- Repair installs sometime in August or September (hopefully earlier)

Acknowledgments

- DOT PHMSA
- Airlogistics
- Citadel Technologies
- NRI
- PipeWrap
- Phillips 66

Advanced Composite Materials Laboratory