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TRI/Austin Oil & Gas Technology Development and Testing Capabilities

Accelerated Life Testing and Reliability Engineering

- Marine accelerated life testing
 - Underwater cables and connectors
 - Hydrophones
 - Transducers
 - Towed streamers
- Failure Analysis
- Materials and process reliability improvement
- Corrosive environment accelerated life testing and test chamber development
- Hydrostatic pressure testing and viscoelastic creep testing

Materials Development and Evaluation

- Advanced polymeric materials development (i.e., abrasion resistant; impact resistant; high temperature tolerant; low fire, smoke, and toxicity)
- Environmentally friendly fluid and lubricant development
- Advanced coatings, primers, sealants, foams, and adhesives
- Materials performance evaluation and testing
- Bond life enhancement in cathodic environments
- Chemical compatibility testing
- Adhesives for wet and unprepared surfaces and saltwater tolerant greases
- Corrosion mechanism studies
- Thermal analysis
- Materials selection and consultation

Nondestructive Testing

- Nondestructive test method development
 - Pressure vessels
 - Storage tanks
 - Pipelines
 - Piping
- Corrosion detection method development
- Structural health monitoring
- Condition based maintenance
- Probability of detection studies
- Ultrasonic, acoustic emission, eddy current, dye penetrant, etc., test method development
- Level III NDE Inspection
- NDE test method development for manufacturing

TRI/Austin Oil & Gas Technology Development and Testing Capabilities

Composites Engineering

- Engineered composite structures
- Finite element analysis and modeling
- Composite pressure vessel design and testing
- Composite pipe design
- Low fire, smoke, and toxicity composites
- Specialized test equipment development

Customer Solutions – Examples

- Failure Analysis/Design Review/Materials and Process Recommendations/Accelerated Life Testing
 - Offshore platform electrical cable connectors
 - Towed/static geophysical hydrophone array elements
- Viscoelastic Creep Testing
- Protective, bond life enhancing coatings for underwater cathodic environments
 - Overmolded electrical connectors
 - Towed streamers
 - Seabed seismic arrays
 - ROVs
 - Cameras
 - Sensors
 - Electronics
- Bond strength enhancing coatings for downhole applications
 - MRI antenna collars
 - Fluoroelastomers
- Measurement of the effects of chemical aging on material performance properties
- Investigation of the effects of high temperature and pressure fluid exposures on Coflon material properties
- Nondestructive inspection equipment setup and inspection of oil well drill tube and coupling knuckles
- Inspection of large oil and chemical storage tanks (during construction and in-service)
- Development of NDE test methods and inspection of tubing in pressurized systems
- Inspection of high pressure storage tanks
- Ultrasonic inspection system development for monitoring fluids for contaminants

