

The objective of the effort described in this proposal is to demonstrate the ability of SAFE, Inc. to develop an environmental test chamber for large scale metal samples (1 ft²) under mechanical loading. The ability to test materials and coatings under accurately simulated real world corrosion conditions (salt films, ozone, UV-light, pollution) would move structural integrity programs forward in their ability to understand and predict how materials will behave in operating conditions. This research will help eliminate over-conservative, costly, in terms of maintenance man-hours, fleet management approaches while also identifying material issues during Engineering, Manufacturing, and Development (EMD) as opposed to Sustainment when design changes are the most costly. In other words, a more thorough understanding of material behavior and degradation during acquisition will reduce management and technical surprises in service.