



## LONG-TERM PRESSURIZED TESTING CAPABILITY

### SUMMARY

Two long-term pressurized test facilities at White Sands Test Facility (WSTF) provide long-term, pressurized storage of undamaged or damaged pressure vessels. In one facility, the test articles are housed in separate and independent test enclosures designed to decelerate and contain vessel fragments and test fluid with no effect on nearby vessels and personnel. Each enclosure is equipped with an independent pressure piping system. In the other facility, smaller pressure vessels are installed in a series within the blast enclosure. Sixteen independent blast enclosures can test up to 9 test articles at ambient temperature and two systems can be maintained at sub-zero temperatures. An automatic dial out alarm system notifies personnel in the event of pressure or temperature excursions. Both facilities are dual heating, ventilating, and air conditioning (HVAC) controlled to ensure temperature induced cycles are held to a minimum. Test articles are typically tested using a noncorrosive test media such as high-purity mineral oil.

### FACILITY

Both facilities are housed in separate 24 by 14 ft Morgan buildings. The buildings are fully insulated and equipped with redundant HVAC units providing  $\pm 10$  °F, 24 h/day temperature control. One facility houses 11 separate and independent test enclosures for the testing of various sizes of pressure vessel test articles (up to 3,000 in<sup>3</sup> capacity with maximum expected operating pressures of 6,000 psig). Test articles are monitored weekly as required. The other facility houses 16 ambient temperature enclosures (each holds up to nine 110 in<sup>3</sup> test articles). Two freezer blast enclosures allow for the same configuration testing at sub-zero temperatures (down to 40 °F). These pressure systems are connected to bladder-type gas accumulators to minimize temperature-induced pressure excursions. The systems are also built with pressure transducer monitors in conjunction with an automatic alarm dialing system. This serves to notify test personnel in the event of a failure or deviation of temperature/pressure. Remote pressure monitoring and/or alarm system indicators are also available options.

### TEST CAPABILITY

The test facility is capable of testing pressure vessel test articles at elevated pressures in either an impact-damaged or manufactured-defect type condition. Impact damage can be inflicted very precisely via an instrumented mechanical impact tester. Manufactured defects can be provided by the customer or precision machined *in situ* at WSTF. Test pressurization is applied independently and discretely to each test article or test system and is measured on calibrated and redundant pressure indicators. Weekly or monthly pressure checks and/or adjustments can be made as required. Test duration can be measured in months or years, as desired. A full posttest burst-test capability exists for all test articles surviving the long-term test period. Full postburst failure analysis and reporting capability are also available.

### TEST LIMITATIONS

If current test capability is in use, duplicate facilities can be provided given ample notice. The cost to the user is negotiable depending on the scope of work required. Impact damage is described in the Modified Mechanical Impact Test System Capability sheet.

### CONTACT

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