

The proposed method for testing the state of steel vessels and equipment operating under pressure consists in determining the number of loading cycles under action of pressure within a specified period, comparing the actual number of the loading cycles with a limit allowable number, and calculating the parameters that characterize the fatigue strength of the material of the vessel or equipment element operating under pressure. The number of the loading cycles and the calculation of the parameters that characterize the fatigue strength of the material are accomplished by using a system for data acquisition and processing during the operation of the vessel or equipment element. The system would provide alarm signals if the state of the vessel or equipment element is critical. The present invention provides the possibility to improve accuracy and reliability in testing steel vessels and equipment operating under pressure.