MECHANICAL INTEGRITY INSPECTION FOR PRESSURE RETAINING EQUIPMENT

Jack R. Buller, P.E.
The National Board of Boiler And Pressure Vessel Inspectors

ABSTRACT

The purpose of this presentation is to discuss the benefits of having a solid mechanical integrity inspection program for pressure equipment such as boilers, pressure vessels, piping, and safety relief devices. Mr. Buller will explain why such a program will improve the safety of operations and add to the reliability of equipment. He will begin with a review of code of constructions, regulatory requirements, continue with practices and inspection procedures, and finish with an overview of three accidents attributed to lack of inspection.

Construction Codes Governing Pressure Retaining Equipment - There will be shown a listing of construction codes used by North American manufacturers. Many off shore (outside North America) manufacturers also fabricate to the same code for reason which will explained. The scope of these codes will be reviewed specifically for inspection and welding controls. The use of construction codes in the repair and alteration of equipment will be examined as will as codes used for repair guidance.

Government Regulation - The type of regulations and enforcing bodies will be presented. State, provincial, city or federal governments all have a stake in public and worker safety, how this interest translate to specific rules addressing boilers and pressure vessels will be shown.

National Board’s Role - How the National Board began, supports jurisdictions, assists industry, and publishes codes will be presented. Explanation of the National Board’s pressure equipment registration, inspector qualification and repair programs will give a fresh look at the organizations function and purpose.

Recommended Practices for Inspection of Pressure Retaining Equipment - Current standards and recommended practices for inspections, repairs, and examinations will be discussed. How important proper use of these documents are to industry will be reviewed.

Inspection Procedures, Evaluation, and Reporting - The importance of developing proper inspection programs for specific equipment using standards, guides, and recommended practices will be explained. Also, how evaluation and reporting of findings during inspection process becomes crucial to a viable program will be shown.

Description of Three Accidents Related to Poor Inspections - The final part of the presentation will be a review in some detail, with pictures, of three accidents where good inspection programs could have prevented the occurrences.