

Requirements for the Design and Fabrication of Pressure Coils in Petroleum and Chemical-Plant Fired Heaters

Fabrication of pressure coils in petroleum and chemical-plant fired heaters for use within Saskatchewan must comply with *The Boiler and Pressure Vessel Safety Act* and *Regulations* as well as Section 10 of *CSA-B51* (Canadian Standards Association Boiler, Pressure Vessel, and Pressure Piping Code). Tubes, return bends, headers, and manifolds inside the internally insulated enclosure may be designed, constructed, installed, inspected, and tested in accordance with ASME Section I, ASME B31.1, ASME B31.3 or API Standard RP530. Fabrication and inspection of items designed in accordance with API Standard RP530 are to be performed in accordance with the requirements of ASME B31.3. During the fabrication of any component or assembly, shop inspection must be performed by a third party Authorized Inspector (an inspector who holds a valid National Board Commission). Upon completion of the component or assembly, a Manufacturer's Data Report for Fired Process Heaters (CSA-B51, Figure D4) must be completed and countersigned by both the manufacturer and the Authorized Inspector.

Piping, headers, manifolds, crossovers, and other equipment external to the enclosure may be designed, constructed, installed, inspected, and tested in accordance with ASME B31.1, ASME B31.3, or ASME Section VIII Div 1. A Construction Data Reports for Pressure Piping Systems (B31.1, B31.3) or a Manufacturers Data Report for Pressure Vessels (ASME Section VIII Div 1) must be completed and certified by the manufacturer of the assembly as well as any manufacturer involved in the fabrication of welded sub-components being incorporated within the final assembly.

Before fabrication commences, the design of a pressure coil must first be submitted to our Codes and Standards Compliance office so that a design review can be undertaken and a CRN (Canadian Registration Number) can be issued. In order to accomplish this task, please refer to the instructions within the document titled "Registration Requirements for Boilers and Pressure Vessels (New Designs)". All welding must be performed in accordance with ASME Section IX to qualified welding procedures and all welding procedures used are subject to registration by the Technical Safety Authority of Saskatchewan. Fabrication must also follow a quality control program similar to that of an ASME Code shop and shall be verified by providing a copy of the certificate of authorization (issued by ASME or the provincial or territorial regulatory authority) or certificate of compliance (issued by a recognized third party inspection agency with inspectors holding National Board Commissions). Note that a certificate of compliance must specifically address welded fabrication.

If there are any further questions or concerns, feel free to contact the office at (306) 787-4567.