UNIFORM MECHANICAL CODE TIA FORM - 2018

Reference Code Section: 2018 Uniform Mechanical Code

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Proposed language for TIA:

1003.3 Gauges. Steam boilers shall be provided with a pressure gauge and a water level glass. Water boilers shall be provided with a pressure gauge and a temperature gauge. ~~Automatic boilers shall be equipped with the following gauges, as applicable:~~
~~(1) Oil temperature~~
~~(2) Oil suction pressure~~
~~(3) High and low gas pressure~~
~~(4) Stack temperature~~
~~(5) Windbox pressure~~

Substantiation:

Technical Merit:

Gauges were added to the UMC (Uniform Mechanical Code) that do not enhance the safety of the products or users, add unnecessary cost to boilers and make virtually all current boiler designs non-compliant.

The requirement for steam and water pressure gauges are consistent with requirements in the ASME Code books and do add to operator safety. A typical operator will know or can easily identify the desired operating pressure and the maximum allowable working pressure. The pressure gauges (required by ASME Code) will be located where they can be easily observed and an operator can take action to shut down the boiler and evacuate the area if an excessive pressure is indicated.

Gauges on the oil temperature, oil pressure, gas pressure, stack temperature and windbox pressure are typically connected only when an authorized service technician is checking / adjusting combustion. Permanently installed fuel pressure gauges will not be visible unless boiler jackets are removed. Even if the gauges were visible they would have no value for a typical end user since only a service technician would know if the readings were normal. These gauges are service devices, not safety devices and they will not enhance the safety of users / operators.

Because these gauges are service devices and not required by the ASME Code or ANSI standards applicable to these boilers, manufacturers have not included these gauges in their certified boiler designs. If the gauges were required to be added to the boiler designs, fuel trains and other parts of the boiler designs would have to be revised to add the gauges, requiring

updates to the boiler certification files at considerable expense to the manufacturers. Some enclosures and designs might not allow space for permanently mounted gauges and require additional redesigns. Finally, the addition of the gauges would add unnecessary expense to every boiler.

Automatic boilers are designed with automatic safety devices and limit controls to automatically shut down the boilers when appropriate. The gauges listed for automatic boilers are useful only for a service technician and are not appropriate or useful as safety devices and should be removed from the requirements in the UMC.

Please note that the phrase "as applicable" does not suggest that the gauges are optional, rather that gauges suitable for oil burners are required for oil burners and gauges suitable for gas boilers are required for gas boilers.

Emergency nature:

The current UMC language makes all currently produced boilers non-compliant. The confusion created by the UMC requirement may lead to the unnecessary shut down of otherwise compliant boilers by well-intentioned inspectors.

Submitter signature (required): _____ Date: 5/31/18

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