

VHA OPERATIONAL ALERT AND GUIDANCE DOCUMENT

FY2022 – 01

CAST IRON FITTINGS / VALVE HOUSING USE IN HIGH AND MEDIUM PRESSURE STEAM DISTRIBUTION SYSTEMS

DECEMBER 14, 2022

BACKGROUND:

The VA has generally prohibited the use of cast iron fittings and pipe components (valves, steam traps, etc.) due to the risk of failure with shock loading. A recent incident involving the fatality of staff and contractors has heightened the concern with the continued use of this material on steam systems.

DISCUSSION:

Based on the brittle nature of cast iron and the two fatalities at a VA Medical Center, VHA Healthcare Engineering leadership has made the decision to discontinue the use of any cast iron, ductile, or malleable fittings and components in high and medium pressure steam systems, whether existing or new.

Facilities with cast iron components in their high-pressure and/or medium pressure system must develop a plan to identify and replace these fittings and components as soon as possible. Facilities must always use due diligence to avoid any sudden pressure, temperature, or mechanical shocks to the steam distribution system, such as water hammer or energizing a steam system too quickly.

This guidance covers steam generation and distribution systems, or portions thereof, operating at a pressure of 15 pounds per square inch gauge (psig) or greater. Also included are distributions systems for hot water or other liquids at a temperature of greater than 257 degrees Fahrenheit.

AUTHORITY:

VHA Directive 1810(1) as amended on September 11, 2018: 5.a(1) and 5.b(1).

REQUIREMENTS:

New construction, renovation, repair, replacement, or any other projects shall not use cast iron fittings, and components or malleable/ductile fittings anywhere in the high-pressure and medium pressure steam system (15 psi or above). All new construction must use only cast steel or forged steel fittings and components, in accordance with applicable VA Master Specifications.

Existing steam distribution systems at VA facilities constructed prior to this operational alert shall conduct a steam distribution system survey to document the locations and type of any cast iron and malleable iron fittings and components. The facility shall develop a risk assessment and interim safety measures pending replacements of all cast iron or malleable fittings with forged or cast steel fittings over time. To mitigate the risk of deleterious effects of water hammer

and shock loading on the piping system each facility shall develop a detailed start-up procedure on bringing a steam system, or part of a steam system, back into service after it has been shut down for any reason. The procedure must also address action to be taken in response to any reported or observed water hammer. The purpose of the procedure is to mitigate the risk of effects of water hammer and shock loading on the piping system.

VISN's shall ensure facilities develop and implement steam system start-up procedures within six months. VISN's shall ensure facilities perform a steam distribution survey within one year of this notice and consolidate the results at the VISN level. Any required capital projects to replace cast iron fittings and components shall be programmed and prioritized in the FY2023 - FY2028 Strategic Capital Investment Plan.

VISN's shall report any issues regarding compliance to the VHA Office of Healthcare Engineering.

FOR QUESTIONS OR ADDITIONAL INFORMATION:

Contact VHA Office of Healthcare Engineering at VHAHealthcareEng@va.gov