

PROPER SUPPORT OF SAFETY RELIEF VALVE EXHAUST LINES

In keeping with MECS commitment to provide Total Quality plants and service to our customers, this Technical Brief is intended to serve as a reminder of the importance of ensuring that steam relief vent pipes are properly supported. There have been several recent instances of the vertical section of steam relief valve exhaust lines separating from the relief exhaust line when the relief valve discharged; this has resulted in damage to surrounding equipment or the relief valve itself.

Safety relief valve exhaust lines should have a minimal horizontal run projecting from the relief valve outlet flange prior to a 90 degree elbow with one end of the elbow facing upward. From this elbow a short vertical pipe section should be added to help direct the exhaust upward. It is important that this vertical section not have any offsets or bends, as this will produce additional thrust reaction loads for which the support system is often not designed. Proper support of this short-vertical-style exhaust line should include a pipe support that extends from the bottom side of the elbow to the top of the header pipe on which the relief valve is located. This support should be welded to the elbow by utilizing a dummy weld connection and also welded to a support plate that conforms to the outside radius of the header pipe. In the case of insulated header pipes, it will be necessary to remove the insulation to ensure the support plate rests firmly on the header pipe. This installation will ensure that when the relief valve discharges, the resulting reaction load is directed downward and toward the header pipe. For relief valves located on boiler steam drums, we recommend the same type relief valve support, except the support plate rests of the shell of the steam drum, which again ensures that the discharge reaction load is directed toward the steam drum. Installations that include a drip pan elbow are to have the exhaust stack independently supported in at least two locations.

Please contact your MECS representative should you require assistance with your specific installation or have any questions. Consultation will be provided at nominal and standard industrial rates.