

To : [REDACTED]  
Cc : [REDACTED]  
From : [REDACTED]  
Subject : Relief Valve Calcs  
Date : Tuesday, January 21, 1997 at 11:39:02 am PST  
Attachment : C:\DATA\WINWORD\RELVAL.DOC  
Certify : N

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Colleagues:

Attached is the latest version of the document covering relief valve calculations for CPUC mandated reliefs. A few minor editorial changes were made. The following is also noteworthy.

1. Calcs and/or field testing and calibration must be done each calendar year.
2. Calcs should be reviewed and field calibration and checking should be performed at about the same time.
3. An earlier version of the document appears in Section 2A of the HFR Manual. The new version should be inserted in place of the older version.
4. Some calcs may need updating due to specific gravity changes.
5. Older stations which had downstream MAOPs lowered because of the 5-year rule may be inadequate because the regs will now have a higher capacity and the reliefs will have a lower capacity.
6. Older stations may have Flexflos which have the bodies which do not have the capacity the modern Flexflos do. Problems can arise with this, especially when the regs are replaced and the reliefs are not.

Continue to check set pressures to assure that the pressure in the pipeline being protected does not exceed MAOP plus 10% or a pressure which produces a hoop stress of 75% SMYS, whichever is SMALLER. If actual relief valve testing has not been done, setting a relief (on a system which has an MAOP over 60 psig) at no more than 5 psig above MAOP has been deemed appropriate.

[REDACTED]

## **Relief Valve Calculations - Record Maintenance and Responsibility**

*DOT 49 CFR 192, Paragraphs 192 731, 192 739 and 192 743, dictate the inspection and testing requirements for relief valves To determine the applicability of these requirements to specific equipment, the following scope is given*

*Part 192 prescribes minimum requirements for maintenance of **pipeline facilities***

**Pipeline facilities** are defined as "new and existing pipelines, rights-of-way, and any equipment, facility or building used in the transportation of gas or in the treatment of gas during the course of transportation "

**Pipelines** are defined as "all parts of those physical facilities through which gas moves in transportation, including pipe, valves and other appurtenance attached to pipe, compressor units, metering stations, regulator stations, delivery stations, holders, and fabricated assemblies

*Utilizing this scope and these definitions a summary of the requirements is*

### **192.731 - Compressor stations: inspections and testing of relief devices**

- a) Except for rupture discs, each pressure-relieving device in a compressor station must be inspected and tested in accordance with 192 739 and 192 743, and must be operated periodically to determine that it opens at the correct set pressure
- b) Any defective or inadequate equipment found must be promptly repaired or replaced
- c) Each remote control shutdown device must be inspected and tested at intervals not exceeding 15 months, but at least once each calendar year, to determine that it functions properly

### **192.739 - Pressure limiting and regulating stations: inspection and testing**

Each pressure limiting station, relief device (except rupture discs), and pressure regulating station and its equipment must be subjected at intervals not exceeding 15 months, but at least once each calendar year, to inspections and tests to determine that it is

- a) In good mechanical condition,
- b) Adequate from the standpoint of capacity and reliability of operation for the service in which it is employed,
- c) Set to function at the correct pressure, and
- d) Properly installed and protected from dirt, liquids, or other conditions that might prevent proper operation

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## Relief Valve Calculations - Record Maintenance and Responsibility Continued

### 192.743 - Pressure limiting and regulating stations: testing of relief devices

- a) **If feasible**, pressure-relief devices (except rupture discs) must be tested in place, at intervals not exceeding 15 months, but at least once each calendar year, to determine that they have enough capacity to limit the pressure on the facilities to which they are connected to the desired maximum pressure
- b) **If a test is not feasible**, review and calculation of the required capacity of the relieving device at each station must be made at intervals not exceeding 15 months, but at least once each calendar year, and these required capacities compared with the rated or experimentally determined relieving capacity of the device for the operating conditions under which it works. After the initial calculations, subsequent calculations are not required if the review documents that parameters have not changed in a manner which would cause the capacity to be less than required
- c) If the relieving device is of insufficient capacity, a new or additional device must be installed to provide the additional capacity required

*Gas Supply Maintenance has determined that the responsibility for complying with these requirements will be delegated as follows*

#### **Gas Supply District Foremen and Division T&R Supervisors are:**

Responsible for ensuring that all pressure relieving devices in their District or Division are annually inspected, each device is tested or a review is conducted of its operating parameters, and all insufficient relieving devices are replaced. These activities must be performed each calendar year in accordance with the above Code requirements

The District or Division will be responsible for requesting assistance from the responsible Gas Supply Pipeline or Facilities Engineer, whenever changing operating conditions or a new installation requires a relief valve capacity calculation

#### **Gas Supply Pipeline and Facilities Engineers are:**

Responsible for performing capacity calculations for any new installations or when changing operating parameters dictate the need to verify sufficient capacity  
Responsible for ensuring that all projects in assigned facilities, including those assigned to a project manager, are checked for effects on existing relief devices and the appropriate Foreman or T&R Supervisor is notified in writing of any required changes  
Responsible for ensuring that Walnut Creek - Records Section has copies of all original relief valve calculations

#### **Documentation Requirements :**

To facilitate the maintenance, review and audits of the pressure relieving devices, all original records shall reside in the appropriate Division or District office. To provide a backup for the originals, copies of the calculations will be maintained by Walnut Creek - Records Section

1/18/1997