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**TECHNICAL JOB SPECIFICATION**

**199/10**

**REVISION 0**

**DATE 05/04/2011**

# HIGH PRESSURE (HP) TRANSMISSION SYSTEMS

# STANDARD TOLERANCES

## QUALITY ASSURANCE PAGE

### CHANGES LOG

### REVISIONS LOG

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| 0 | 05-04-2011 | FIRST ISSUE | PQ DPT | V.G. |
| Rev. No | Rev. Date | REASON FOR CHANGE | Made By | Approved By |

## CONTENTS

## REFERENCE DOCUMENTS

Std Drawing STD-1-41-22
[Line Valve Station for Pipelines. Access Road, Pavement and Turning Area]

## 1.0 SCOPE

This specification covers tolerances applicable to construction activities for natural gas lines.

## 2.0 COMPULSORY MEASUREMENTS

All measurements explicitly specified in specifications or on drawings as "minimum", "at least", "not less than", or equivalent shall have no negative tolerance.

Respectively, specified measurements as "maximum", "not to exceed", or equivalent shall have no positive tolerance.

Maximum compulsory levels shown on the drawings (see also Legend, **Std Drawing No. STD-1-41-22)** shall be the highest permissible "as-built" level without any exceeding allowance. Respectively, minimum compulsory levels shall be the lowest permissible as-built level without any missing allowance.

In determining whether "as-built" measurements comply with the specified limits, the number of significant digits of the as-built measurement shall be the same as is used in the specified limit (e.g. if minimum cover is 1.0 m then an as-built cover 0.97 m- rounded to 1.0 m- shall be acceptable, while an as-built cover of 0.94 m -rounded to 0.9 m - shall not be acceptable).

## 3.0 TOLERANCES

### 3.1 GENERAL

Tolerances given below shall not by any circumstance overrule minimum requirements as per **section 2.0.**

The tolerance shall be considered as standard values, which must be adhered to, unless exception explicitly has been granted by the Owner's Representative in each separate case.

### 3.2 CROSS COUNTRY PIPELINE

The as-built pipeline axis shall never be in the horizontal direction more than 0,5m away from the theoretical line, shown in the detailed field engineering AFC drawings, scale 1:1.000 or less.

An exception can be made in the vicinity of TIP'S.

Other exceptions may be accepted by the Owner's Representative if conditions warrant it.

### 3.3 STATION PIPING

Unless otherwise specified on the drawings, as built geometry of piping axes and end points shall conform to geometry shown on the construction drawings within the following tolerances:

- On horizontal dimensions : 5 mm
- On vertical dimensions : +25 mm
- On angularity in all directions : +30 mm

Placing of coordinated items (e.g. line valves, interface points, etc) shall be subject to same tolerances on the actual points set out in the field, unless otherwise specified on the drawings.

## 3.4 CONCRETE WORKS ON STATIONS

Horizontal dimensions of concrete works shall be consistent with piping so as to ensure the vertical centre lines of items to be supported (e.g. a valve) merge into corresponding footing centre lines within a tolerance (measured horizontally) of ± 50 mm.

Top levels of completed footings shall correspond to the level of piping to be supported within a tolerance of ± 10 mm.

## 3.5 SHIFT OF LINE PIPE WALL THICKNESS CHANGE POINTS

As-built points for change in line pipe wall thicknesses (e.g. at road crossings, near stations, etc) may be shifted up to 2.0 meters in the direction of the thinnest wall compared with the drawings. The change point may, under no circumstances, be shifted in the direction of the thicker wall.