

# Principles for the construction of technically tight gas caverns and inspection measures used for confirmation

by

Gernot Jäpel; Helfried Zipper  
UGS Mitenwalde; VNG AG Böhlitz-Enrenberg

## Summary

The state of the art of gas cavern completion indicates trends:

- More and more sensitive testing techniques are applied to tightness tests in the region of the last cemented casing. Testing the technical tightness also includes the error analysis for detecting individual errors and for the general process.
- With the aim of placing technically tight completions and to secure them for long-time operations, welded gas production strings expansion joint less, are used increasingly which are pulled under prestress conditions. The installation steps and elements involved have become routine procedures.
- By the example of the double-tube liner, an alternative completion for the use of packers is described. Based on the references on the technical tightness in the rock salt, further simplifying variants are expected to become routine in the practice of cavern construction,

Technical planning and geomechanical analyses are interrelated in the construction and operation of gas caverns.

Pneumatic in-situ stress tests as a basis of a rock-mechanical evaluation example permit - in addition to regulations concerning the maximum operating pressure of the cavern - also predictions on the uncritical stress development in rock salt bed between cavern roof and salttop over the total time of operations.

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