

AGEING OF DISTRICT HEATING PIPES AN INTERNATIONAL TASK

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Abstract

District Heating (DH) systems in Europe developed historically, depending on local boundary conditions and corresponding requirements. Therefore, each DH system has its own individual characteristics. Nevertheless, DH utilities in Germany and Europe pursue similar targets: Increasing the overall efficiency of their systems while improving the security and quality of supply. This has led to a similar development of DH systems concerning the technical progress. In Europe, depending on age, operating conditions and installation costs, similar installation systems and pipe materials in DH networks are used.

Today DH utilities are forced to work on status assessment and lifetime prediction while a large number of pipes in their DH systems are close to the expected service lifetime, according to the design. Consequently, they have to think about suitable maintenance strategies. Additionally they must also work on the transformation of their DH systems towards the increased use of renewable energy sources. To solve these issues, there are several national research projects working on the improvement of knowledge of status assessment, accelerated ageing and models for lifetime predictions. Since in most cases the material characteristics of the pipe systems were not recorded during the construction phase and historical operating conditions are not sufficiently available, a major challenge is to develop reliable calculation models with this limited data basis. A suitable approach is to pool national research results, compile statistics and improve the state of the art through scientific discussion and international cooperation.

The IEA DHC Annex Task Shared Project “Status assessment, ageing, lifetime prediction and asset management of District Heating (DH) Pipes” intends to initiate this collaborative work within the International Energy Agency’s (IEA) Implementing Agreement “District Heating and Cooling including CHP” (DHC). Experts, researchers and manufacturers are invited to participate in this project and to contribute with their expertise on this international task.

Keywords: District Heating pipes, aging, lifetime prediction, IEA DHC