New Pre-commercial procurement to ensure quality of joining of PE-pipelines

Background

As more and more leaking electro fusion welds are discovered, clients have begun to demand non-destructive testing of the PE joints, similar to the methods available today for steel pipes.

The non-destructive testing methods that are available today, only evaluates if the joint is tight at the moment it is installed and gives no indication if the joint is tight even during the relatively short guarantee period of five years

Currently, there is only destructive testing of joints available, which means that the joint must be removed from the pipe (in practice cut from the pipe) and sent for destructive testing. The cut piece of pipe must then be repaired and the problem repeats itself.

Most of the existing joining methods comes with installation instructions but practice have shown that to ensure proper installation an inspector must control every single joint. To avoid the necessity of this stand-by inspector, non-destructive methods for testing of joints needs to be developed.

When joining steel pipes, it is possible to test the joint before the contractor's work is approved. For this reason, PE pipes in larger dimensions are often excluded in the planning and construction of new pipelines.

By develop a method (technology) to secure the quality of the joints without having to destroy them, this project will reduce installation costs and future costs during operation and maintenance.

Existing methods for NDT-testing

The 4S group have evaluated a series of NDT-technologies and the conclusion is that none of these technologies can give a correct knowledge if the weld is correctly done or not.

The lack of quantitative values (hard data shown in figures like “2,4”) from the existing NDT-methods rule out the possibility for the end-users to develop acceptance criteria for the different joining methods.

Challenge

Therefore 4S group will perform a Pre-commercial procurement of New Methods of Non-Destructive testing of joining of PE pipes to develop technologies to perform NDT-test and receive data so the group there after can establish acceptance criteria for the different methods. Thereafter it is possible for Pipeline owners to determine if the joining with both electro fusion and butt welding is correctly performed.

The pre-commercial procurement will be devided into three parts, decleration of interest, concept study and field test of a prototype. The first step, decleration of interest, will be begun in the end of March and the test of the NDT-methods will be performed during the autum 2015.

For more information go to http://www.4sledningsnat.se/