

1.3.24. IMPORTANCE OF ULTRASONIC TESTING IN ADDITION TO ENCIRCLING EDDY CURRENT TESTING FOR CONDENSER TUBES OF POWER STATIONS

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With voice for environmental concern rose higher and higher around the world, more countries prefer the choice of “clean energy solution”, like nuclear or thermal power stations, rather than petrol. As an evident result, the quality and security of these power stations are more than ever the central concern of the market.

Valtimet, Subsidiary of Vallourec Group, world leader for both straight and special formed welded tubing products, is fully involved in the supplying of tubing products for the 2nd circuit of the cooling process of these power stations, and is the world leader on the premium products of this market, by supplying straight stainless steel welded tubes, straight titanium welded tubes, and straight cooper alloyed welded tubes, to all of the world's main companies of power stations, like Alstom, SAP, Haerbin, DongFang, Holtec, TEI, and Yuba.

To be able to propose the maximum guarantee of quality to our clients, Valtimet has spent a lot of time and energy to study on an efficient quality control on its tubes destined to this condenser market. After years of trials and analysis, Valtimet has concluded that the most dangerous defects of tubing products on this market are the possible longitudinal oriented defects from the weld. Also, Valtimet has arrived at the conclusion, that the only demanded NDT (non-destructive-testing) quality control by the Standards of this market, the encircling ET (Eddy-Current-Testing), is not the most efficient testing technique to stop this kind of longitudinal defects.

While most of the competitors of Valtimet on this market are content with only an ET installation, which is cheap and easy for maintenance, Valtimet has gone much further beyond the requirements of the Standards, to install a sophisticated and expensive UT (ultrasonic-testing) installation, in addition to the demanded ET installation, and has trained its operators to the best level of knowledge on utilization of the UT installation.

Camping of samplings of validation have been carried out and analysed, as shown in this paper with photos of defects: only a double NDT control by ET + UT can guarantee a premium quality of the tubing products for condenser application, therefore the quality of these nuclear / thermal power stations, which is in return the guarantee of quality and security of our everyone's life.