Renovation of density and velocity measuring transmitters in 'IHC Systems' renovated workshop

The measuring transmitters for density and velocity need maintenance from time to time as these are subject to wear. The internal linings will wear as a result of the sharpness and size of the material that is transported through the pipeline. Also the velocity and lesser the density of the transported mixture play an important role in the rate of the wear. Not only the internal lining of the measuring tubes needs replacement when worn but also the density transmitters radioactive source when "decayed". This is mainly valid for the transmitters of larger internal diameters that are equipped with a source of the Cobalt-60 isotope which have a half life time of ± 5.5 years. The Caesium sources in small transmitters have a half value life time of 33 years and mostly outlive the dredger these serve.

Since the year 1960 IHC Systems delivered over one thousand of their nuclear density transmitters so it will be clear that the maintenance of these is an important part of the After Sales Services activities. The maintenance on the transmitters is carried out in the IHC Systems' facilities located in Sliedrecht, a small village close to Dordrecht and abt. 20 kms south of Rotterdam. For easing and economising of the maintenance the workshop has recently been renovated by means of better sound proofing by relining of the floor and by installation of a new calibration unit. The calibration unit comprises a watertank with a pumping unit that allows the water to be reused many times so avoiding any pollution of the environment. The working table and the pumping system allows the filling with water of large transmitters, over the maximum diameter of 1200 mm that is in use now. As it is likely that the internal diameters will increase matching the increase in size of the new trailing dredgers we are now set for the future.

Density transmitters are adjusted for zero and range and supplied with a calibration figure. The density calibration figure only depends on the geometry of the construction and on the internal diameter. As the increase of the internal diameter as a result of wear is not significant for practical transmitter sizes the calibration figure remains suitable for accurate measurement in practice throughout the life time of the transmitter. The life time is designed to be the half value life time of the radioactive source. When this is exceeded considerably the measuring accuracy for higher density values will grow unacceptably low.

Recalibration on board is limited to checking the zero setting from time tot time whilst pumping clear water.

Velocity transmitters are adjusted for zero setting and signal correction as a quality control activity. The final zero and range setting has to be done later on board in its working environment. The on-board settings can be realised by the staff on board with our advice when needed. The IHC Systems Field Service is of course prepared to render the calibration service if so desired.

On the 27-th and 29-th of October 2000 the redyness of the 1000-th density transmitter has been celebrated with our relations and our personnel, taking the opportunity to invite also the retired collegues who worked on the units in the beginning.

With the advantages of the new facilities IHC Systems can serve the customers with the speed that repair and renovation activities require.