INTERNATIONAL INTEREST IN FIELD OF MAGNETIC WATER TREATMENT

Many readers will be familiar with the process of magnetic water treatment which has been employed around the world - particularly in the United States and northern and eastern Europe for many years as a means of controlling and removing inorganic scale and biological slime coatings in pipes and equipment. Some will also be familiar with the controversy that has surrounded the process.

Manufacturers of the many magnetic water treatment devices currently on the market claim that slime and scale can be controlled simply by installing their units in water supply and recirculation lines.

Many scientists and engineers have had difficulty accepting that these problems, which have traditionally plagued processes involving water, can be reduced so dramatically simply by passing water through a magnetic field. In spite of this scepticism, the range of magnetic water treatment devices available worldwide as well as the applications into which they are being fitted continues to grow.

Algarid Pty.Ltd., a firm based in Melbourne, Australia, has been manufacturing devices they call magnetic water "stabilizers" for more than ten years and during this time has had success in ridding systems such as swimming pools, cooling towers, water supplies and film processors of the persistent problem of slime build-up.

As part of their continuing research effort, Algarid have carried out a computer-assisted survey of the engineering and biological literature and have turned up some very interesting results.

Although there are a number of current patents covering magnetic treatment in Western Countries, and dozens of treatment devices are available in the United States alone, only two scientific studies on the effectiveness of the treatment process appear to have been published in Western journals over recent years. Both proved inconclusive. During the same period, however, there have been numerous reports in Soviet and Eastern bloc journals revealing remarkable results of magnetic water treatment in applications ranging from scale prevention in heat exchangers and oil wells to the enhancement of soil characteristics and crop growth.

A model explaining the anti-scale effects of magnetic treatment recurs in many of the scientific articles and most of the trade literature. This model maintains that the magnetic field has a catalytic effect causing dissolved ions, that would otherwise form the hard crystalline coating well known to engineers as "scale", to form small "amorphous" crystals. These microscopic crystals either remain in suspension or settle out in low velocity areas creating sediment, which is easily removed by normal blow-down procedures. In spite of extensive research in Norway, the USSR and other countries, it appears that the precise nature of the mechanism underlying this magnetic effect is still unknown.

The literature in both eastern and western countries on "biomagnetic" phenomena turns out to be vast. It reflects a growing scientific interest in the inhibition and enhancement of biological systems, (eg. cell cultures, tissue repair mechanisms and whole organisms) during exposure to magnetic fields. Interest has been such that an international journal, “Bioelectromagnetics", was launched several years ago to publish papers on this topic. The relationship between the biological effects of constant magnetic fields and the residual effects of a once only or infrequent exposure as occurs in magnetic water treatment is not yet clear.

For further information contact Algarid.