National Power Corporation (NPC) is the largest provider and generator of electricity in the Philippines. Built in 1979, NPC's Agus 6/7 Hydroelectric Plant Complex is located along the Maria Cristina Falls on the Agus River in Mindanao. The Complex is made up of two hydroelectric power plants: Agus 6 encompasses Units 3, 4 and 5 and produces 150MW of electricity, while the smaller Agus 7 consists of Units 1 and 2 and has a rated capacity of 54MW. Between 2008 and the end of 2011, nine Scalewatcher water-conditioner systems were installed in the generator air-cooling equipment at the Complex. They have markedly improved both cooling efficiency and rated capacity.*

Problem

Prior to the installation of the Scalewatcher systems, one set of generator air coolers was removed from the water-cooling system during every planned maintenance shutdown so that sludge could be manually removed from the copper tubing. According to A. F. Suezo, Jr., Plant Manager of the Complex, "Scientific studies showed that scale build-up reduces the efficiency of the cooling system and just 1/4 inch of scale formation can increase heating costs by 40%."

Solution

Scalewatcher's environmentally friendly technology provides a permanent solution to hard water problems without the need of chemicals, salt or maintenance. These systems work by producing a varying electronically applied force field, induced by a coil wrapped around the outside of the pipework, which keeps minerals in suspension and, thus, prevents lime scale from forming. The water's increased solubility lets it dissolve existing scale, which is then gradually flushed away.

Return On Investment

Once the Scalewatcher systems were installed, it was observed that the scale, sludge and slime formation in the generator air coolers had been reduced to a point whereby during subsequent planned maintenance shutdowns, the plant's maintenance team was able to discontinue the dismantling of all other air coolers for cleaning. Although it's diffi cult to quantify the apparent increase in capacity and other benefits, Mr. Suezo points to conservative estimates indicating that even with a minimal increase of 1%, the plant will save 204MW of electricity per year—*whic h equates to*
annual savings of P15,202,800.00 (or around US$350,000)
.

In November 2011, Scalewatcher North America was advised that although Unit 4 was rated at 50MW, because of its age, the capacity had deteriorated to 30MW. Since installation of a Scalewatcher system, the unit's capacity has increased by 5MW. Although their report was conservative, Mr. Suezo and Mr. Pates, the site's Maintenance Manager, noted that the additional capacity was suffi cient to light as many as 5000 homes and provide savings of $232,558 a month. Therefore, in the 39 months following the fi rst Scalewatcher installation, Unit 4 generated additional revenue amounting to $9,069,762.

Scalewatcher, North America
Oxford, PA

**Founded in 1936, in Quezon City, National Power Corporation (NPC) produces power using geothermal, natural gas, hydroelectric,*
oil and coal, and primarily serves distribution utilities,
co-operatives and industrial customers across the Philippines.

Scalewatcher North America, manufacturers of the original, patented and award-winning computerized electronic waterconditioner, offer a range of systems to suit domestic, commercial and industrial applications. Scalewatcher's technology is based on continuous research and over 20 years experience and expertise as market leaders in electronic scale control with countless units sold worldwide. Each Scalewatcher system has a 5-year manufacturer's warranty and comes with a full-year performance guarantee. Costs include free shipping within the USA.

Joomla SEO powered by JoomSEF