

ready for sales to municipalities, which add it to their water supplies — usually at a rate of one part for every million parts of water. If this sounds as though it doesn't add up to very much hydrofluosilicic acid, note that ERCO ships more than 30 tons of the acid per week to the City of Toronto alone.

As with any project of this size, our Chemical Plant Division engineers and construction men found many problems to be overcome. High on the list was the difficulty of lining outdoor tanks in mid-winter, with an icy wind blowing from Lake Erie across the flat surrounding land. But for Dunlop crews who are regularly involved in applying tank linings at far-northern mining sites, this presented no insurmountable obstacles and the neoprene and rubber-lined tanks were completed on time, despite temperatures that frequently fell below zero.

Exterior tanks were assembled on the site, and surrounded with a tight wooden casing. The interiors of the tanks were then shot-blasted to prepare the surface of the metal for adhesives. Dunlop crews applied 3/16-in. or 1/4-in. layers of neoprene or natural rubber, overlapping the joints in every case, and a brick lining was added in some of the tanks to protect against mechanical damage and to serve as a thermal barrier.

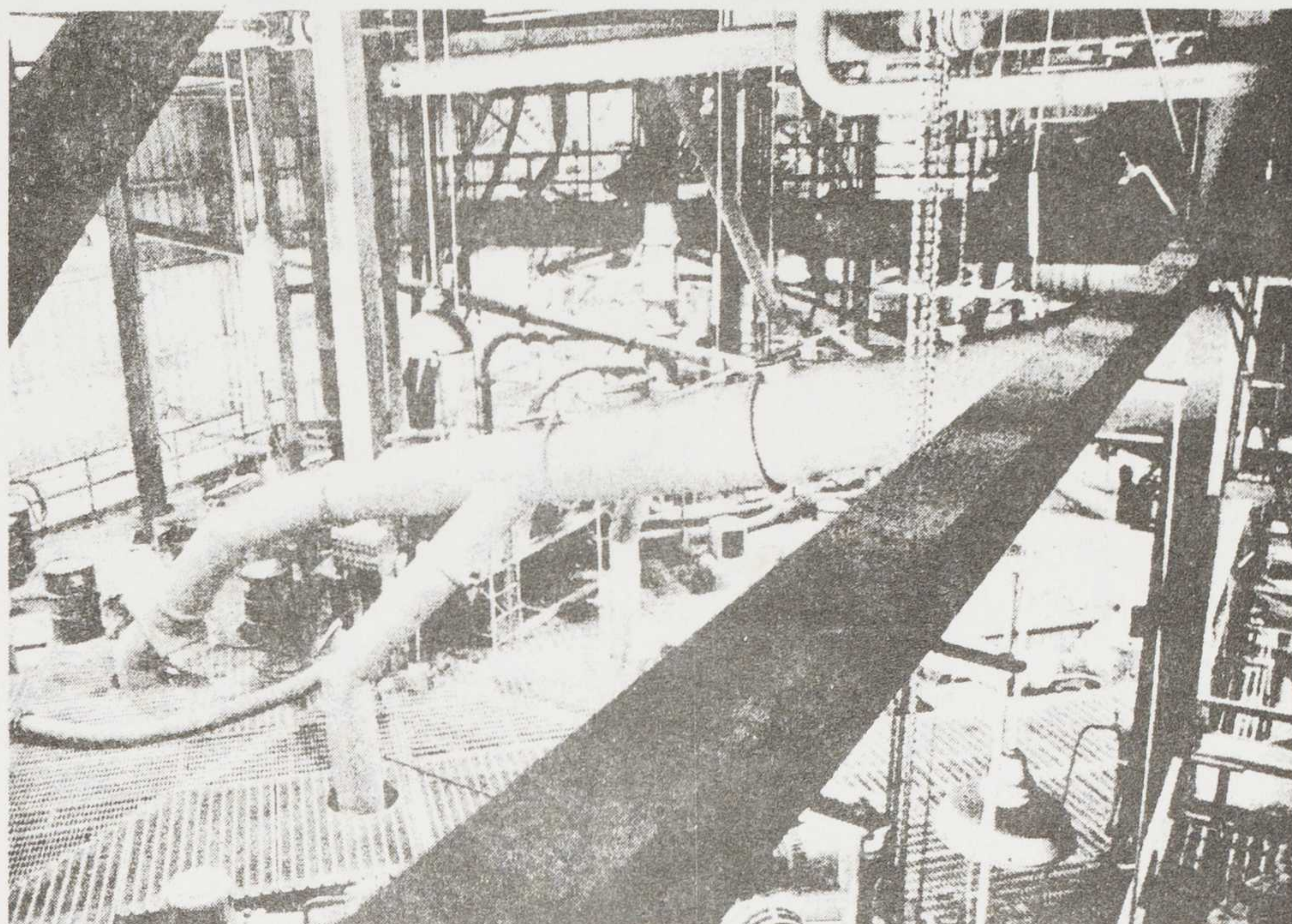
Why the exterior wooden casing? Because it was necessary to heat the tank structures to an acceptable temperature from the outside before live steam was injected into the tanks in order to vulcanize the rubber lining materials.

The hose and pipe inside and outside the plant involved a wide range of standard Dunlop types and considerable quantities were custom made to fit the exacting requirements. The materials used included Hypalon, neoprene, polypropylene, hard and soft natural rubber, and Penton. All hose which was to be used for acid suction services was especially reinforced with steel, embedded between the plies of regular textile reinforcement.

Most of the hose and piping inside the plant is required to withstand considerable heat and severe corrosive action. Hydrofluosilicic acid is a colourless, fuming, and very corrosive liquid which reaches temperatures in excess of 212°F. during processing. It is so corrosive, in fact, that without the protection afforded by the rubber linings, the steel tank structures would be eaten away in a matter of hours.

The future for sales of hydrofluosilicic acid looks extremely good. ERCO, with the growing demand for the acid for use as a fluoridating agent in water supplies, saw a market facing them and built the plant to tap it. While it is not the only fluorine compound that can be used for water fluoridation, hydrofluosilicic acid is a particularly effective one.

Meanwhile, the demand for fertilizers is increasing by leaps and bounds. The fertilizer plant has already completed an expansion programme and indications are that it won't be long before the hydrofluosilicic acid plant will need additions. When it does, Dunlop will be ready to continue its important role.



*Phosphate rock is mixed with sulphuric acid in huge tanks under this flooring. Dunlop also equipped this part of the plant with rubber-lined steel tubing.*



*Road tankers deliver hydrofluosilicic acid to cities which use it to fluoridate water. Tanker is typical of the many that are rubber-lined by our Chemical Plant Division.*



*Dunlop representative, Frank Potter, shown inspecting an acid hose connection outside the process building.*