

E.2.2 PROJECTED EMISSIONS FROM COPPER-NICKEL SMELTER COMPLEXES

A report recently prepared by Environment Canada provides an insight into projected levels of SO₂ emissions from the Canadian copper/nickel smelting sector (1). The projections are based on various assumptions which are considered to be the most probable for future emissions. While based on expert analysis and current information, they could be considerably altered by several variables. Historically, strikes, recessions, market prices, shutdowns, etc., have all affected emission levels. Such variables are obviously too difficult to predict very far into the future.

The last decade has reflected the effects of environmental pressures being brought to bear on the non-ferrous smelting industry. Emissions from this sector have decreased almost continuously since 1970 and can be attributed to process improvements, production cutbacks, and the closure of a smelter. Throughout this period, the decrease in total SO₂ emissions was augmented by increased pyrrhotite rejection at the Inco (Thompson), Inco (Sudbury area) and Falconbridge (Sudbury area) smelters; furthermore, the expansion of the acid plants at Inco's iron ore recovery plant (IORP) (Sudbury area), the addition of acid plants at the Gaspé (Murdochville) and Falconbridge smelters, coupled with the plant modernization completed at Falconbridge, combined to reduce emissions even more. Overall, SO₂ emissions from Canadian copper/nickel smelters decreased from a level of 3.7 million tonnes in 1970 to 2.5 million tonnes in 1977, or about 32%, while at the same time nickel production decreased by about 16% and copper production increased by close to 5% (1).

The total emission levels for 1978 (1.7 million tonnes) and 1979 (1.6 million tonnes) were not indicative of what might have been expected on an annual basis because of a severe 8 1/2 month strike which spanned both years and which served to artificially reduce emissions at Inco's complex in the Sudbury area from approximately 1.14 million tonnes in 1977 to about 0.54 million tonnes in each of 1978 and 1979. However, under a new Ontario government regulation, Inco emissions at its Copper Cliff complex are restricted to approximately 0.87 million tonnes per year starting in 1980. This level has been chosen as the base level assumption to estimate future emissions.

Based on the historical pattern of emissions to date (1950-1980) (1), and on current economic conditions which indicate an impending recession, it is not appropriate to project production increases for the near future. Therefore, based on these facts and the following assumptions: