TABLE A.4.1
Copper/Nickel Smelter SO_2 Control Systems

Smelter Process				SO_2 Control System						
Technology	Relative Cost[3]	Technology availability	Energy consumption[5]	Technology	SO_2 Control %	Estimated Cost[6]	Technology availability[7]	Operating reliability	Energy consumption	By-product
Green charge or multi-hearth roaster, reverb., converter	90-110	High	High 106-118	Acid plant on converter	To 50%	52	High[4]	High	Low	Sulfuric acid
Fluid-bed roaster, reverb., converter (base case)	100	High	High 100	Acid plant on roaster	To 45%	33	High	High	Low	Sulfuric acid
Multi-hearth roaster, reverb., converter	110	High	High 100	Non-regenerative FGD	To 85%	134	Low	Low	High	Sulfur compound for waste disposal
Multi-hearth roaster, reverb., converter	110	High	High 100	Regenerative FGD	To 85%	108	Low	Low	High	Sulfuric acid
Fluid-bed roaster, electric furnace, converter	100	High	Very High 106-156	Acid plant on roaster, electric furnace, converter	To 90%	33	High[4]	High	Low-Med.	Sulfuric acid
Fluid-bed roaster, reverb., converter	100	High	High 100	Acid plant on roaster and non-regenerative FGD on weak gas streams	90-92%	83	Low	Low	High	Sulfuric acid and sulfur compound for waste disposal
Fluid-bed roaster, reverb., converter	100	High	High 100	Acid plant on roaster and regenerative FGD on weak gas streams and acid plant	90-92%	70	Low	Low	High	Sulfuric acid
Dryer, oxygen-enrishec reverb., converter	90	Med.	Med. 90-95	Acid plant	90-94%	52	High[4]	High	Low-Med.	Sulfuric acid