Power Plant Fuel Management

Part 1

Fuel	Fraction	Sulfur (ppm)	PM(kg/T)	Pounds of Steam
Coal 1	0.0579710128	1100	1.7	24000
Coal 2	0.5507246362	3500	3.2	36000
Coal 3	0.3913043509	1300	2.4	28000

Constraints	Used	Max
Fraction	1	1
Sulfur (ppm)	2499.9999971	2500
PM(kg/T)	2.8	2.8

Total Steam 32173.9130385132

Part 2

Fuel	Fraction	Sulfur (ppm)	PM(kg/T)	Pounds of Steam	$/T
Coal 1	0	1100	1.7	24000	95
Coal 2	0.8295454545	3500	3.2	36000	83
Coal 3	0.1704545455	1300	2.4	28000	91

	$
$ w/out scrubbers	84.363636364
$ w/scrubbers	85.863636364

Fraction	1	1
Sulfur (ppm)	2500	2500
PM(kg/T)	2.4509090909	2.8

Total Steam 34636.3636363636

W/out Scrubbers

Objective Cell
Variable Cells
Constraint Cells

W/Scrubbers

Objective Cell
Variable Cells
Constraint Cells

Part 1 of this excel sheet uses optimization modeling to find the ideal fractions of 3 different types of coal to maximize profit, while staying in compliance with pollution constraints.

Part 2 uses optimization modeling to analyze whether or not it would be worth it to invest in scrubbers that would reduce pollutants by 20% for an extra $1.50 per ton of coal. An analysis of the results determines that it is cost effective to instal the scrubbers.