Homework #4 ChE 391 due 3/8/12

After solving the LP problem as given in Example 11.4 in the Edgar et al. optimization book that is posted on Blackboard as “steam system” (make sure your answers match those given), make the following changes to the constraints:

* Remove the constraint EP + PP ≥ 12,000
* Add constraint P1 + P2 – EP ≥ 0
* Change P1 + P2 + PP ≥ Demand to P1 + P2 + PP – EP = Demand

Set the demand to 10,000 kW. Change the price of HPS to $0.00522/lb (representing $4.48/MMBTU), the price of PP to $0.05/kWh, and the price of EP to -$0.045/kWh. What are the optimal turbine settings?

Now change the price of EP to -$0.01/kWh. How did the optimal solution change?