Third Writing Assignment
Due October 31

Roberta is an electrical engineer in the EIT (Engineer in Training) phase of her application for the PE license. She works for a producer and distributor of electricity in California. For two years, one of her assignments has been to collect data on maintenance costs of electrical power plants in the region served by her employer, which includes northern California, and portions of Nevada and Oregon. The electrical utility is publicly owned, and any profits made by the firm result in lower rates to all customers. Generally, the older plants are less efficient and are located closer to inner cities, where larger numbers of minorities and the poor live. The newer plants are located closer to suburban areas, where, generally, whites and the more affluent live. The older plants produce electricity for approximately $0.04/kWh (kilowatt hour), and the newer plants produce electricity for approximately $0.03/kWh. The more electricity sold and the cheaper the cost of production, the more profit the company makes. Generally, plants supply customers in their area. When a plant or some of its generating facility is “down,” electricity is brought in from other areas. Ordinarily, there is no power-supply problem in an area during maintenance periods in the local plant. However, if there is an overload of electrical demand in a given region of the country (such as the Northwest), and a local plant is “down” for maintenance, a loss or decrease in electrical service in the vicinity of the plant is more likely. Thus, when a plant, or part of the generating facility of a plant, is down, the customers in the area have a somewhat greater chance of suffering a loss or decrease of electrical service. Obviously, it is better for customers to suffer this loss or decrease of electrical service in non-peak seasons (March or October), than in the middle of the summer or the middle of the winter.

Roberta is given a new assignment. She is asked to develop a schedule of rotating downtime for the electrical generating facilities to allow for various scheduled maintenance operations. Roberta’s boss considered two plans for the scheduled downtime maintenance schedules. Plan I schedules the downtime maintenance operations so that the more efficient suburban plants have their maintenance operations during the seasons of lowest electrical demand, which occur during March and October. Plan II calls for downtimes to be distributed equally throughout the year for plants serving urban and suburban areas. Roberta’s manager directs her to make the schedule according to Plan I. She wonders whether there are ethical problems with his decision.

Prepare a written analysis (maximum of three double-spaced typewritten pages) of the ethical issues involved in the case, according to the outline given below. You should identify and resolve relevant factual, conceptual, and application issues.

1. Identify the conflicting values and obligations (1 point)
2. Identify the relevant members of the audience. (1 point)
3. Identify the issues involving RIGHTS that would favor Plan I and Plan II, showing how you would determine the level of rights involved. (2 points)
4. Identify the ACT UTILITARIAN considerations that would favor Plan I and Plan II. (2 points)
5. Suggest another plan (Plan III) that might have some advantages (in rights and/or utility), over Plan I and Plan II. Explain the advantages. (1 point)
6. Show what plan (I, II, or III) you think is the best, all things considered. Explain how and why you balance rights and utility. (3 points)