

1 Q. RE. p. B-41 Purchase and Install Voltage Regulators – Barchoix (\$112,000)

2

3 30.1 Over what period of time has the peak load level on the feeder
4 resulted in low voltage levels? How have these problems been
5 reflected in the reliability figures for the Barchoix area?

6

7

8 A. 30.1 The problem of low/imbalanced voltages on the feeder was identified
9 during system load flow simulations conducted in 2000. The
10 simulations indicate that primary voltage levels decrease to
11 approximately 110v, on a 120v base, at the source side of the existing
12 regulator bank on certain phases during peak and that load
13 rebalancing will not alleviate the problem. (Normal planning criteria
14 specifies that primary voltage magnitudes be at least 116v.) Four
15 customers are located within 1 km of this location. Past recloser and
16 regulator field data indicates that these problems have existed in
17 varying degrees since 1995. The data shows that the existing
18 regulator bank has in the past, operated to its design limit when
19 boosting feeder voltages, thereby preventing it from providing the
20 additional regulation required. The regulator bank's performance, and
21 the accompanying low voltages, were confirmed during subsequent
22 simulations based on past peak load readings. Low voltages are not a
23 component used when calculating reliability figures.