CHAPTER 11: LIFE-CYCLE COST SUB-GROUP ANALYSIS

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11.1 INTRODUCTION

The life-cycle cost (LCC) sub-group analysis evaluates impacts on any identifiable groups or customers who may be disproportionately affected by any national energy-efficiency standard level. The Department will conduct this evaluation for the Notice of Proposed Rulemaking (NOPR), in part, by analyzing the LCC and payback periods for those customers that fall into identified sub-groups.

The Department plans to evaluate variations in energy prices and variations in energy use that might affect the net present value (NPV) of a standard to customer sub-populations. To the extent possible, the Department will obtain estimates of the variability of each input parameter and will consider this variability in its calculation of customer impacts. Variations in energy losses for a particular type of transformer depend mainly on the varying load levels that the transformer serves, which in turn vary on factors such as type of load, climate, and time of day. The Department plans to perform sensitivity analyses to consider how differences in energy use will affect sub-groups of customers.

The Department will determine the impact on customer sub-groups using the LCC spreadsheet model. The spreadsheet model used for the LCC analysis can be used with different data inputs. The standard LCC analysis (described in Chapter 8) includes various types of distribution transformers and user groups. The LCC for any sub-group, such as rural electric cooperatives, municipal utilities, or specific classes of commercial or industrial customers, can be analyzed using the LCC spreadsheet model by sampling only that sub-group. (Chapter 8 explains in detail the inputs to the spreadsheet used in determining LCC and payback periods.)

11.2 PURCHASE PRICE INCREASES

As discussed in the engineering analysis (Chapter 5), the first cost of a transformer tends to increase as its efficiency increases. Identifiable population groups, such as rural electric cooperatives or municipal utilities, may not be able to afford significant increases in equipment prices that might result from a standard. To avoid negative impacts on these population groups, the Department will be especially sensitive to increases in the purchase price of transformers. For customer sub-groups that are sensitive to price, increases in first costs of a product can normally delay or preclude the purchase of a new model of that product. Since distribution transformers are an integral part of the electrical supply system, users must replace failed units and incur the financial impacts associated with increased first costs.