standard to consecutive 12-month periods, rather than to rolling 12-month periods beginning with each month.

Pennsylvania P&L suggests that the Commission apply the 12-month standard only to new QFs in order to minimize administrative problems with existing QFs whose power purchase contracts may be based on calendar year periods. SDG&E and Southern California Edison suggest that the Commission continue to apply the existing calendar year standard, beginning with the first full calendar year of a QF's operation and apply the new 12-month standard only to the initial period of operation.77 SDG&E and Southern California Edison believe that this would respond to the Commission's concern about the difficulties QFs initially encounter in their operation and make it easier for utilities to monitor the operation of a large number of QFs.78

Commission Response: American Forest and Paper's proposal to establish a 60–90 day grace period for new facilities is beyond the scope of this proceeding and the Commission will not adopt it.

The Commission is revising its regulations to require that the technical standards be measured during the first year of operation, on a consecutive 12-month basis beginning with the date the facility first produces electric energy. A new facility can fail to meet the technical standards in any period from one to 11 months as long as the facility meets the technical standards for the 12-month period. Compliance with the technical standards will be required on a calendar year basis beginning with the first full calendar year of operation following the date of initial electric

power production.⁷⁹ This should simplify compliance with contracts and regulations. The final rule revises the Commission's operating, efficiency and small power fuel use standards accordingly.

2. Clarification of the Sequential Use of Energy Requirement

In the NOPR, the Commission proposed to clarify its requirements pertaining to cogeneration facilities' sequential use of energy and useful thermal energy output. The Commission, therefore, proposed to define sequential use of energy in a new § 292.202(t); in the final rule, this new section is designated § 292.202(s). The NOPR also proposed to codify Commission precedent that: (a) A topping-cycle installation must subsequently use some of the reject heat from the electric power production process for a useful thermal purpose; and (b) that the useful portion of thermal energy output refers to the heat used in a heating or cooling application or made available to a commercial or industrial process.80 In the case of a bottoming-cycle cogeneration installation, where all of the energy is first used for a commercial or industrial process, the Commission proposed that the facility must subsequently use some of the reject heat to produce electric power.

Comments: EEI refers to a multiple turbine cogeneration configuration in which some of the turbines are sequentially producing electric power and useful thermal output, and other turbines are only producing electric power. EEI contends that the latter turbines should not qualify because they do not save fuel. Southern Companies also maintains that sequential energy use must remain central to the

qualifying cogeneration facility concept. AGA approves of the Commission's discussion in the NOPR on this matter, because it contemplates that useful thermal energy will be extracted at any point along a chain of linked turbines rather than from every turbine in a multi-turbine topping-cycle installation.

SDG&E asks the Commission to specify a minimum percentage threshold for sequentially produced useful thermal energy output. It submits that the setting of a minimum threshold would better promote the conservation and efficiency goals of PURPA. SDG&E also recommends that the Commission exclude from the operating and efficiency values of a facility the incremental electrical and thermal output related to any supplementary firing in a combined-cycle (toppingcycle) extraction turbine configuration. SDG&E contends that to allow supplementary firing when only a token portion of the thermal input is converted to useful thermal energy output is not an efficient use of energy.

American Cogen suggests that the Commission require facilities to account for inefficiencies in the thermal host's equipment with greater specificity. However, if the Commission's intent is to net out such inefficiencies from the useful thermal energy output at each point of interconnection with the thermal process or application, American Cogen contends that accounting for such inefficiencies is onerous and should not be adopted. **Electric Generation Association raises** similar concerns. Independent Energy Producers suggests that the Commission use an approach similar to that proposed for waste fuels and provide a non-exclusive list of useful thermal purposes to help reduce any uncertainty.

SDG&E is concerned that the proposed revised definition of useful thermal energy output does not exclude heat dumped or rejected after delivery to the process, and that space and domestic water heating and cooling uses have not been included in useful thermal energy output.⁸¹ SDG&E also suggests that a modified independent business purpose test be applied to determine the usefulness of novel thermal applications or processes.

Commission Response: With regard to the concerns of EEI, Southern Companies and American Cogen, the Commission's final rule both maintains the sequential use of energy concept and permits a QF to extract useful thermal energy at any point along a chain of

⁷⁷ Southern California Edison also suggests that, since certain combined-cycle configurations have characteristics of both topping-cycle and bottoming-cycle facilities, the Commission should make the operating and efficiency standards for combined-cycle facilities the same as for topping-cycle facilities. The Commission considers combined-cycle installations to be topping-cycle facilities subject to the operating and efficiency standards applicable to such facilities.

Southern California Edison suggests that the Commission should also require combined cycle facilities to calculate the efficiency value to take into account total energy input. The Commission includes the total energy input of only oil or natural gas to such topping cycle facilities in the calculation of the efficiency value.

⁷⁸ SDG&E also contends that the current operating and efficiency standards have failed to encourage alternative energy development and conservation and suggests that the Commission should initiate a new rulemaking proceeding to raise the operating and the efficiency standards. At this juncture, however, the Commission is primarily concerned with codifying QF precedent and otherwise streamlining its QF regulations. It is not prepared to initiate another generic QF proceeding at this time.

⁷⁹ Under this approach, small power producers and cogenerators will account for the early period of a QF's operation under both the 12-month standard and the calendar year standard. For example, with respect to a facility that first produces power on July 1, 1994, conformance with the 12-month standard will be necessary for the 12-month period ending June 30, 1995. In addition, conformance with the calendar year standard will be necessary for that facility for the calendar year ending December 31, 1995.

⁸⁰ Under the Commission's proposal, a topping-cycle cogenerator applicant would provide a mass, heat balance (cycle) diagram to demonstrate sequentiality, an adequate level of useful thermal energy output, and conformance with the operating and efficiency standards. Cycle diagrams delineate average annual hourly energy flows at various points of the cogeneration facility (including points of fuel input and working fluid input), accounting for hourly and seasonal variations, and conditions such as temperature, pressure and enthalpy (heat content) at these inputs, at the outputs of the prime movers, and at delivery points to the thermal application/process, and account for losses between the cogenerator and the host.

 $^{^{81}}$ (See Electrodyne Research Corporation, 32 FERC ¶ 61,102 (1985) (*Electrodyne*)).