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June 28, 1979.

Memorandum to: The Commission.

From: John B. O'Sullivan, Chief Advisory Counsel; Robert E. Cackowski, Deputy Director, OEPR.

Subject: Section 210 of the Public Utility Regulatory Policies Act of 1978, Concerning Cogeneration and Small Power Production Facilities.

This memorandum is intended to serve as a discussion paper on Section 210 of the Public Utility Regulatory Policies Act of 1978 (PURPA). The memorandum will describe this section of the law, our preliminary view as to how the law might actually work, and some problems that might develop in implementation.

#### Introduction

Under the Federal Power Act (FPA), sales from cogenerators and small power producers to a public utility (as defined in Part II of the FPA) would, so long as the electricity might make its way into the bulk power transmission grid, make the cogenerator or small power producer itself a public utility. In other words, by virtue of its sale for resale in interstate commerce, the cogenerator or small power producer would itself become a public utility under Part II of the Power Act. Prior to the enactment of PURPA, the FERC was not authorized to abstain, in whole or in part, from exercising its jurisdiction over such cogenerator-public utilities and small power producer-public utilities. The prospect of plenary regulation unquestionably acted as a powerful disincentive to the generation and sale of surplus power by such facilities, particularly where the owner was an industrial concern unfamiliar with the arcane intricacies of utility regulation. It should be noted that sales of supplemental or back-up power to such cogenerators and small power producers by the local public utility would in most instances be a retail sale regulated by the State.

In Sections 201 and 210 of PURPA, Congress has grappled with both the split jurisdiction and the disincentive to certain desirable kinds of electric generation imposed by the rigid jurisdictional provisions of the FPA, as well as with allegations that some utilities were not dealing in good faith with certain existing or proposed

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#### [18 CFR Part 292]

[Docket No. RM79-55]

#### Staff Paper Discussing Commission Responsibilities To Establish Rules Regarding Rates and Exemptions for Qualifying Cogeneration and Small Power Production Facilities Pursuant to Section 210 of the Public Utility Regulatory Policies Act of 1978

**AGENCY:** Federal Energy Regulatory Commission.

**ACTION:** Staff paper issued, by direction of the Commission, for comment.

**SUMMARY:** This paper discusses the Commission's responsibilities to issue final rules pursuant to section 210 of the Public Utility Regulatory Policies Act of 1978 (PURPA) relating to the rates at which power should be exchanged between qualifying cogeneration and small power production facilities and electric utilities and the criteria under which certain qualifying facilities should be exempt from certain State and federal regulations.

**DATE:** Comments are due by August 1, 1979.

**ADDRESS:** All comments to: Secretary, Federal Energy Regulatory Commission, 825 North Capitol Street, N.E., Washington, D.C. 20426 (Reference Docket No. RM79-55).

**FOR FURTHER INFORMATION CONTACT:**

cogenerators and small power producers. The PURPA scheme, though certainly novel in the context of traditional utility regulation and probably complex to administer, is a logical approach to solving the problems with which Congress was concerned.

Section 201 of PURPA generally defines a "qualifying small power production facility," "qualifying small power producer," "qualifying cogeneration facility," and "qualifying cogenerator." The Commission is to establish by rule the detailed criteria for qualifying facilities of both types. Generally, a qualifying small power production facility (SPPF) can only use biomass, waste, renewable resources (including hydro from existing dams), or a combination thereof, as a primary energy source; and, together with other facilities at the same site, cannot have a capacity greater than 80 megawatts. A cogeneration facility is defined as a facility which produces both electricity and steam or some other useful form of energy, such as heat. There is no size limit for qualifying cogeneration facilities. A qualifying facility of either type must be "owned by a person not primarily engaged in the generation or sale of electric power (other than electric power solely from cogeneration facilities or small power production facilities)."<sup>1</sup>

Having delineated by Section 201 and the Commission rules promulgated thereunder the class with which it was dealing, the Congress provided certain substantial benefits of qualification in Section 210. Broadly stated, these benefits are the following:

(1) Electric utilities (defined as any person, State agency or Federal agency which sells electric energy)<sup>2</sup> can be compelled to buy power from qualifying facilities. The price applied to such required purchases must be just and reasonable to the customers of the purchasing utility and in the public interest. The Commission may not prescribe a price for such sales that

<sup>1</sup>However, a utility or a number of utilities may participate in the ownership of a facility; and nothing in the statute bars a utility from operating a qualifying facility. In fact, a utility operating such a facility which it did not own would become a "qualifying cogenerator" or "qualifying small power producer."

<sup>2</sup>The definition of electric utility applicable to Section 210 is that which appears in Title I of PURPA (and which includes the Federal power marketing agencies), not the Title II definition (which does not). The Title II definition (from PURPA § 201) has become a part of the Federal Power Act (specifically, § 3(22)), and thus applies to the parts of PURPA which amend the Power Act. Section 3(4) of PURPA establishes the definition to be applied to those parts of PURPA which, like Section 210, are not made a part of the Federal Power Act.

"exceeds the incremental cost to the electric utility of alternative electric energy." The price shall not discriminate against the selling qualifying cogenerator or small power producer.

(2) Utilities can be compelled to sell to qualifying facilities. The price applied to such required sales shall be just and reasonable and in the public interest and shall not discriminate against the qualifying cogenerator or small power producer.

(3) Qualifying small power production facilities whose size does not exceed 30 megawatts of capacity and all qualifying cogeneration facilities may be exempted in whole or in part by Commission rule from the Federal Power Act, from the Public Utility Holding Company Act, and from State laws and regulations respecting the financial or organizational regulation of public utilities, if the Commission determines such exemption is necessary to encourage cogeneration and small power production.

Rules embodying these principles are to be issued by the Commission within one year after enactment; viz, by November 8, 1979. The law provides that the State regulatory authorities and nonregulated utilities are to implement the Commission's rules within a year after they are prescribed.

As this bare-bones description of the statute may or may not make apparent, there is the potential, if not a requirement, for a fundamental reordering of the traditional dual regulatory scheme as it applies to certain cogenerators and small power producers.<sup>3</sup> Whereas before the FERC had jurisdiction over sales from such power producers for resale in interstate commerce, while the states regulated retail sales, PURPA provides for FERC rules governing both transactions. And the states, which have not had jurisdiction over sales for resale in interstate commerce, will in all likelihood carry out the day-to-day regulation of such sales where they involve qualifying facilities (QFs) in addition to continuing to regulate all retail sales, including sales to QFs. However, the regulation of transactions involving QFs may well be conducted under the state regulations implementing the FERC's rules promulgated pursuant to Section 210, rather than under State laws. In other words, the requirement that the States and nonregulated utilities implement the FERC's rules, together with the FERC's authority to exempt

<sup>3</sup>Except where a precise point of statutory construction is being discussed, we will use the terms "cogenerator" and "small power producer", interchangeably with, respectively, "cogeneration facility" and "small power production facility".

QFs from some or all of Parts II and III of the FPA and from State law could (and almost certainly will) result in the delegation-by-exemption to the States of both old and new FERC regulatory responsibilities.

The second major departure from or reordering of traditional utility regulation inherent in the Section 210 scheme is a consequence of the Congress's intention to avoid the treatment of qualifying cogenerators and small power producers as utilities, where such treatment is a disincentive to these kinds of generation. Traditional regulation has, naturally, focused on the seller. For the most part, regulators regulate the public utility, not its customers. There is plentiful precedent for a requirement to sell (Sections 202(b) and (c) of the FPA, virtually all State laws concerning service to retail customer), but almost none for required purchases of the sort provided for in Section 210. Similarly, under conventional regulation, the seller's rates are subject to regulatory approval, the test of the reasonableness of which is the seller's costs. Here, because of the effort to relieve some generators of the burdens of regulation, Congress has established a scheme in which the primary reference point for determining the price for a sale from a QF to a utility is not the seller's cost but the buyer's avoided cost. Indeed, the Congress has specifically instructed FERC that QFs are not to be subjected to the same scrutiny and requirements for organization and reporting as regular utilities; and the authority to grant exemptions is the device which Congress has given the Commission not only to avoid such regulation on its own part, but also to ensure that once the Federal preemption of such regulation is removed, the States do not begin to regulate QFs as utilities.

All this is not to say that there is a lack of precedent for the Commission, State regulators, and nonregulated utilities to look to in implementing Section 210 of PURPA. Many utilities have experience with their own cogeneration (primarily those that provide district heat steam service.) With regard to the sale from a utility to a qualifying facility, the primary model is conventional State-regulated retail sales, though in some instances partial requirements or interchange wholesale rates provide a better basis of comparison. With regard to the sale from a qualifying facility to an electric utility, wholesale rates probably provide the best analogy in most cases, particularly where a relationship between a utility and a number of

qualifying facilities begins to resemble a power pool. Useful information may also be gleaned from the not-uncommon arrangement whereby a utility purchases power from an industrial cogenerator or self-generator. A number of States have already begun work on rules concerning cogenerators and a few are quite far along this road, and this also can provide substantial guidance.

Nonetheless, it is fair to say that in many instances the transactions between utilities and those who will qualify under Section 201 have in the past fallen into a gap between the FPC/FERC and State regulators. It is certain that the terms under which these transactions take place vary enormously from utility to utility and region to region. In the following more detailed discussion, we will not attempt to provide in all instances a single correct or even preferred approach to implementation. Because of regional differences in circumstances, the enormous range of characteristics as to both loads and power production likely to be exhibited by various qualifying facilities, and simple uncertainty as to what the law means or what the best approach to a problem is, we will often merely list some apparent alternatives. By this we do not mean to imply that the Commission will in every case ultimately be faced with making a choice of a single approach from among a number of alternatives. It is quite likely that the Commission will want to leave the States and the nonregulated utilities flexibility for experimentation and accommodation of special circumstances on a number of these matters.

With respect to the nonregulated utilities, consideration will be given as to the necessity of a separate set of rules from that applicable to the State commissions due to the fact that the nonregulated electric utility will be both the entity responsible for implementing the Commission's rules and the utility directly dealing with the cogenerator or small power producer.

#### Exemptions

Section 210 directs the Commission within a year of enactment to prescribe rules exempting small power production facilities with no more than 30 megawatts of capacity and all cogenerators from part or all of the Federal Power Act, from the Public Utility Holding Company Act, and from State laws and regulations respecting the rates or respecting the financial or organizational regulation of utilities, if the Commission determines such exemption is necessary to encourage

cogeneration and small power production. Small power production facilities of greater than 30 megawatt capacity using biomass exclusively as a primary energy source may be exempted from the Holding Company Act and State laws, but not from the Federal Power Act.<sup>4</sup> Under 210(e)(3), no QF can be exempted from Part I of the Power Act, Sections 210, 211 and 212 of the Power Act (added by Sections 202, 203 and 204 of PURPA, and having to do with interconnection and wheeling), and State laws and regulations implementing the Commission's rules promulgated pursuant to Section 210.

It is clear from the Conference Report that Congress intended the Commission to make liberal use of its exemption authority:

The conferees wish to make clear that cogeneration is to be encouraged under this section and therefore the examination of the level of rates which should apply to the purchase by the utility of the cogenerator's or small power producer's power should not be burdened by the same examination as are utility rate applications \* \* \*. The conferees expect that the establishment of utility type regulation over them would act as a significant disincentive to firms interested in cogeneration and small power production.

Although we have not conducted an exhaustive survey, there is good reason to believe that many if not most State laws provide for regulation of cogeneration and small power production facilities as utilities. These State laws have been rendered ineffective in most instances because of the FPA preemption of regulation of sales for resale in interstate commerce. Were the Commission to exempt QFs from FPA regulation, but not from State regulation, the State laws would then take effect, frustrating the intent of Congress that QFs not be subjected to the same scrutiny and organizational

<sup>4</sup>Thus the Commission is not authorized to exempt small power production facilities of 30 to 80 megawatt capacity from any of these laws, with the exception of biomass users who still cannot be exempted from the FPA. As a technical matter, this would leave in place two conflicting regulatory schemes covering this group: Section 210 pricing, and traditional Federal Power Act regulation of the QSPF who becomes a Part II public utility by virtue of a wholesale sale into interstate commerce. The Conference Report resolves this for the most part by instructing the Commission to use Section 210 pricing for this group. Left unresolved are two questions: (1) What will be the effect of State regulation on small power producers of greater than 30 megawatts who are making sales for resale but not into interstate commerce (such as in Alaska, Hawaii, Puerto Rico and most of Texas)? and (2) Should the Commission exempt biomass small power producers in these areas from State regulation, where the consequence is that they will not be regulated at all?

requirements as utilities. It would be difficult to maintain that the Federal preemption continued even after the Commission exempted QFs from the FPA (that is, that the area was deliberately left vacant, and that the States could not then occupy the area) if the Commission chose not to exercise its authority to exempt from State regulation. Therefore, it seems likely that in the great majority of cases where the Commission provides an exemption from the FPA it will also want to provide substantial exemptions from State law.<sup>5</sup>

Basically, there are two approaches that can be taken to the State law exemption. The first, which is both more precise and more cumbersome, is to analyze the laws of each State and specify the exemptions to be provided citing sections of State law and regulations. We do not recommend this approach, except possibly for the non-contiguous states and territories and contiguous areas not hooked into the interstate grid (primarily parts of Texas). The second approach is to make a broad prescription exempting from any and all provisions of State law and regulations as would conflict with the State's implementation of the Commission's rules under Section 210. This approach, while it may lead to some disputes which the Commission will have to become involved in, has the advantages of simplicity, administrative ease, and permanence (*i.e.*, the language of the exemption would not have to be changed every time a State changed its laws or regulations).

While the proper course seems obvious with regard to Federal and State rate regulation and the requirements for filing voluminous reports concerning operating, cost and revenue data,<sup>6</sup> the matter of exemption from provisions of the FPA concerning financing and related matters and from the Public Utility

<sup>5</sup>Note that the Commission does *not* have the authority to exempt cogenerators from State regulation as a steam utility. This fact may have somewhat disparate consequences (assuming that some cogenerators may be interested in selling steam), since some States do not regulate steam sales, some do so only if the seller is already a utility, and some do so whether or not the seller is an electric utility.

A quite different and somewhat anomalous situation involving preemption may arise if a State has by statute directed the State regulatory authority not to regulate cogenerators. The most reasonable approach to this situation would seem to be to treat the State law as consistent with Section 210 of PURPA, in that (as the Introduction points out) it is really the utility as buyer and seller that is regulated.

<sup>6</sup>Though it is worth noting that some exemptions here will affect the data provided to the Energy Information Administration, where EIA's authority is derived from the Federal Power Act.

Holding Company Act is not nearly so clear. Pending consultation with the Staff of the Securities and Exchange Commission, we will not attempt an exhaustive analysis of this subject. However, as a rule of thumb it seems reasonable to provide that where a firm is subjected to more stringent regulation than other companies simply because it is engaged in electric utility business, those requirements should be eased through exemptions for QFs; but where a certain kind of regulation is applied to electric companies under the FPA or the Public Utility Holding Company Act, and applied in equal measure to non-utilities under other statutes enforced by the S.E.C., the argument for exemption is not nearly so strong. An example of the former, utility-only kind of provision is the requirement that a holding company show that its subsidiaries are or are capable of being operated on an integrated basis. In this case, we think exemption warranted. By contrast, exemption from certain security acquisition and interlocking directorship provisions may not be warranted.

As the Conference Report indicates, some participation by one or more utilities in the ownership of qualifying facilities may be permitted by the Commission's Section 201 rules. However, an exemption granted to a facility under 210(e) would not serve to release a utility or holding company participating in some way in a QF's ownership from any other unrelated obligations it may have under the law, since Section 210 permits the exemption of the QF, not of a parent (or grandparent). (In this context, we take this to mean that where a facility is granted an exemption, participation in the ownership of the facility will not give rise to a particular legal obligation that would have otherwise attached.) We interpret 210(e) as giving the Commission sufficient flexibility to grant an exemption such that a non-utility parent is relieved of certain obligations while a utility or holding company participating in the same project is not. Again, the test for an exemption is whether it is "necessary to encourage cogeneration and small power production."

Finally, it should be noted that the exemption of QFs from traditional utility-type regulation, as specifically discussed in the Conference Report, may have the effect of making QFs eligible for a 20% energy investment tax credit. A recent change (March 1979) in Treasury Department regulations permits the exclusion from "public utility property" of property used in the business of the furnishing or sale of

electric energy if the rates are not subject to regulation that fixes a rate of return on investment. Prior to the change, any rate regulation made property subject thereto (and involved in the furnishing or sale of electric energy) public utility property. Being thus excluded from public utility property, qualifying facilities have an opportunity to come within the definition of "alternative energy property," and thus qualify for the 20% ITC.

In fact, it may well be that even small power production facilities too large to be exempted may be eligible for the higher tax credit, due to the Conference Report's instruction to set the prices for sales by these SPPFs to utilities "in accordance with the requirements of" Section 210 rather than by "utility-type regulation."

#### Interconnection

Section 210 requires that utilities buy from and sell to QFs. It does not, however, explicitly provide authority to the Commission to order any interconnection necessary to effect the required transaction. The question thus arises as to whether there is inherent in section 210 of PURPA the authority to order such interconnections, or whether QFs must use Sections 210 and 212 of the FPA (added by Sections 202 and 204 of PURPA) to gain interconnection.

Perhaps the strongest argument against the finding that there is an interconnection authority within the cogeneration section is that the interconnection section itself explicitly lists qualifying cogenerators and small power producers as among those who are eligible to make an application. (By contrast, the next section, dealing with wheeling, does not confer eligibility on QFs.) Moreover, the requirement under Sections 210 and 212 of the FPA that the party seeking interconnection must show himself to be ready, willing and able to pay the resulting costs, and the companion criterion that the interconnection order not be issued if it would result in a reasonably ascertainable uncompensated economic loss for any electric utility, might be seen as consistent with the statement in the Conference Report that the cogeneration section was not to be applied so as to force a utility's customers to subsidize a qualifying facility.

Although this argument is respectable, we think it the better view that the requirement to interconnect is subsumed within the requirement to buy and sell. To hold otherwise would mean that Congress intended to have qualifying

facilities go through an extended and expensive proceeding simply to gain interconnection, contrary to the entire thrust of Sections 201 and 210.

These sections evince the clear Congressional intent to encourage development of these desirable forms of generation, and to have the commercial development of these facilities proceed expeditiously. In other words, Congress has already made the judgment that these kinds of facilities serve one of the purposes of the Act as set out in Section 101, viz, "the optimization of the efficiency of use of facilities and resources by electric utilities", and it would be both redundant and unduly burdensome to have the sponsors of individual facilities show in an evidentiary hearing (FPA § 210(b)(2)) that their project in particular would serve this end (or one of the other related goals established as criteria for an interconnection order in § 210(c)(2)). After all, the purpose of an interconnection application, whether under Section 202 or 210 of the FPA, is to secure service, whether emergency or otherwise; and Section 210 of PURPA establishes the entitlement of a QF to service from the interconnected utility. In effect, the proponents of the view that a QF must apply under Sections 210 and 212 of the FPA have the burden of showing that Congress intended interconnection and the entitlement to buy and sell be denied to a QF which is unable to make the showings required by those sections even though a previously-interconnected customer installing qualifying facilities would not have to do so.

This is not to say that all of the protections that Congress has given the target of an interconnection application in Sections 210 and 212 of the FPA are necessarily absent from Section 210 of PURPA. The Conference Report on Section 210 states that customers of utilities are not to be compelled to subsidize QFs, and this principle would seem to bear on the question of who pays the costs of interconnection as well as on the per-unit price to be paid for energy. On the other hand, the conference Report includes a prescription against "unreasonable rate structure impediments, such as *unreasonable hook up charges.*" (emphasis added) This provides another argument in favor of reading Section 210 as including interconnection authority, since the elaborate cost determination required under Sections 210 and 212 of the FPA is redundant if the costs of interconnection are viewed simply as a feature of the rate structure with the

charge therefor based on the cost of the utility.

#### Reliability

Section 210(a) states that the rules requiring utilities to buy from and sell to QFs "shall include provisions respecting minimum reliability of [QFs] (including reliability of such facilities during emergencies) and rules respecting reliability of electric energy service to be available to such facilities from electric utilities during emergencies."

This statutory language raises the question of whether the Commission must prescribe minimum reliability requirements for qualifying facilities selling to utilities.

Section 201 specifically mentions reliability as one of the factors the Commission may take into account in establishing the criteria for qualifying small power production facilities. (It is not mentioned in the parallel language concerning co-generators.) We read Section 201 as permitting but not requiring the Commission to establish a minimum standard for the reliability of small power producers. Whether one agrees with this interpretation or believes that the Commission must establish such a threshold, the question remains as to why the Congress included provisions concerning reliability in Section 210 for both kinds of facilities after having mentioned it in Section 201 as to one kind but not the other.

Of course, the degree of reliability and/or availability can and should be reflected in the price for electric service, whether a utility or a QF is the seller. Putting a price tag on a particular degree of reliability is practically an everyday exercise for utilities and regulatory agencies. Put another way, then, the question is whether the Congress intended the Commission to establish rules on QF reliability under Section 210 that went beyond a requirement that differences in reliability be fully reflected in prices.

The Congress evinced a clear concern that utility customers not be required by the Commission's Section 210 rules to subsidize QFs. The 210(a) language concerning reliability might well have been intended to prevent indirect subsidies resulting either from frivolous or otherwise uneconomical interconnections (with the costs borne by the utility's customers) or from a diminution in the quality of service rendered by a utility due to an interconnected facility's disruption of a utility's operations.

Elsewhere in this memorandum we have recommended that the incremental

costs of interconnection or reinforcement of a utility's distribution and transmission facilities (*i.e.* those costs which the utility would not have incurred in securing the same power from an alternative source, or in providing service to the qualifying facility if the facility did not have its own generation) should be borne by the QF. So long as facilities can be devised which are sufficient to protect the utility from disruption of its operations by a QF—and our present understanding is that such protective devices can always be provided—and the QF rather than the utility bears the costs of these facilities, then no such indirect subsidy would occur.

Our analysis thus leads us to the conclusion that every incidence of a QF's reliability (or unreliability) can be accounted for through prices. If this conclusion withstands the test of public comment, we would recommend to the Commission that it establish no minimum reliability standard pursuant to Section 210(a), but that it make full provision for the consequences of varying degrees of reliability in the rules on pricing.

It is reasonable to expect many different kinds of facilities to be covered by and become involved with Section 210, ranging from large, self-sufficient and previously-isolated industrial generators to small, experimental and somewhat exotic facilities. The reliability that these different kinds of QFs will need from utilities and will be able to offer utilities will run the gamut. The needed services may vary from something comparable to a typical firm retail sale to more sophisticated pooling and interconnection arrangements. Similarly the service offered by QFs to electric utilities will range from dump or interruptible energy to firm power sales, *i.e.*, a reliable substitute for capacity that would otherwise be installed by the utility.

It is difficult, if not impossible, to predict what kinds of facilities will present themselves to any given utility. Thus it appears that the approach that would best satisfy the statutory mandate to encourage cogeneration and certain types of small power production is to require all electric utilities to offer to buy and sell services providing a complete range of reliability,<sup>7</sup> with the proviso that in each instance the price will have to be calculated so as to

<sup>7</sup>We do not mean to imply by this that qualifying facilities could rely on this requirement to secure a higher degree of reliability than firm, full requirements customers, or secure for themselves a higher priority than other customers with similar end-uses under a short- or long-term emergency load-shedding plan.

satisfy the other provisions of section 210, including the principle that utility customers not be compelled to subsidize QFs.

This requirement that electric utilities offer a complete menu of services (at appropriate prices) should not be too great a hardship, at least for public utilities, since between their wholesale and retail rate schedules most now offer a broad range of services, including firm all requirements, standby, interruptible and emergency services (though many do not offer what may be the closest parallel in many instances, partial requirements service).

With regard to emergency sales from QFs to utilities, we would note that cogenerators and small power producers can be the subject of an order under Section 202(c) of the FPA to provide energy if the Economic Regulatory Administration determines that an emergency exists. Absent the declaration of a 202(c) emergency, we would recommend leaving the terms of emergency availability to the negotiations of the parties, subject only to the rule recommended in the preceding paragraphs.

#### Sales from Utilities to Qualifying Facilities

Section 210(c) of PURPA provides that:

The rules prescribed under Subsection (a) [which requires, *inter alia*, that utilities sell to QFs] shall insure that in requiring any electric utility to offer to sell electric energy to any qualifying cogeneration facility or qualifying small power production facility, the rates for such sale—

- (1) shall be just and reasonable and in the public interest, and
- (2) shall not discriminate against the qualifying cogenerators or qualifying small power producers.

This statutory language is similar to the language contained in Sections 205 and 206 of the FPA and is probably similar to many of the State statutes with respect to utility regulation. Such language thus permits traditional ratemaking concepts with respect to the sales to QFs.

In most instances, it would appear appropriate for the proposed rules to require the States to apply their standard ratemaking concepts in establishing rates for the QFs to the extent possible, even where there is a significant difference between FER's approach and that of a state. That is, in most instances the test as to whether a QF is being discriminated against as a utility customer will be made by comparing the QF to other retail customers of the utility. For example,

although California might choose to exempt qualifying facilities from having to pay a share of the subsidy for lifeline rates required of other industrial customers, there does not seem to be a valid argument that the failure to exempt QFs is discriminatory, since the QFs would simply be treated like others in the class to which they would belong if they did not have their own generation. Similarly, there seems no reason why any steps taken under Title I of PURPA with respect to such matters as time of day rates should not also apply to QFs.

In determining the rates to QFs, one of the first issues likely to arise is whether all or some QFs should be served as a separate rate class or included among a more general class such as the industrial or large power customers. It would appear that latitude should be given in the rules to permit inclusion of QFs within a general rate class to the extent that the load characteristics permit. This may be the most practical approach where the number of potential QFs is relatively small and might not warrant the costs associated with developing a separate rate class. Similarly, latitude should be given to permit classification as a separate rate class if the number of potential customers is large and/or the load characteristics are likely to impose substantially different costs on the system from the general rate class. These general problems of customer classification will of course become less important to the extent the states move to time-of-day rates.

Two major problems arise in the area of customer class assignment due to a shortage of good data. First, a majority of utilities do not have good load data even for their major retail customer classes, and in a number of states neither the utilities nor their regulatory agencies set rates based upon a class cost of service calculation. (The load data problem will be resolved over the long haul for the larger electric utilities by Section 133 of PURPA, which requires the collection of cost and load information by customer class.) Second, even where utilities have good data for their existing major classes, estimates as to the service requirements of QFs, and thus the costs imposed on the utility (determined to a considerable extent by the outages of the customer's own generation and the type of standby service the customer wants), may not at first rise above the level of speculation.

The second problem may be eased substantially over the short run if QFs and utilities can agree to contracts specifying the services the utility will be called on to provide. However, where

the two parties cannot reach this kind of agreement (such as where a cogenerator is unsure of its own production and is not willing to contract for interruptible service from the utility for any part of its potential load), the problem remains.

Whether or not a QF agrees to specific contractual levels of service, and whether a QF is assigned to an existing customer class, has a custom-designed individual rate, or is placed in a special class (or one among several special classes) for QFs, the first problem does not seem susceptible of precise solution over the short term. It would seem difficult to declare with any confidence that rates for a particular customer or class of customers is just and reasonable if there is no approved way of determining the customer's cost responsibility; and it would seem to be impossible to determine with any precision whether or not a proposed rate were discriminatory when one does not know the cost of serving the class or classes whose rates the QF's rates are to be compared to. Indeed, it may even be difficult to determine whether or not some or all QFs should be grouped with a particular class or subclass when little is known about the cost and load characteristics of the class.

Since some cogenerators and small power producers may have operations similar to those of utilities with generating facilities, the rules should provide sufficient latitude to permit interconnection and coordination agreements or partial requirement agreements similar to those subject to this Commission's jurisdiction. This would provide contractually specified operating criteria and would allow a full range of services including the sharing of mutual benefits of diversity and coordination. In fact, wholesale rates may provide some makeshift basis for determining what retail rates are appropriate for QFs where little is known about retail loads and costs by class.

Where large numbers of existing customers are converting their operations from those of a full requirements customer to that of a cogenerator or small power producer, such conversion may significantly alter total system loads and costs and almost certainly alter the outcome of a class cost allocation. To the extent that the conversion increases the total system costs from what they would otherwise be, or, more likely, leaves roughly the same fixed costs to be spread over fewer units sold, the rules should permit consideration of this fact by the states in determining the rates for such customers and the remaining customers on the

system.\* This situation might become a significant factor in determining whether the rates are in the "public interest" as required by Section 210(c). (The effect on system loads and costs is also an important consideration in determining the rates for power purchased by the utility from the cogenerator or small power producer, as discussed later.)

One of the most often discussed problems of rates for cogenerators or small power producers is the charge for backup or standby service. Here, the question of what costs the customer(s) imposes on the utility, and thus what the appropriate rate is, essentially turns on three factors: first, the reliability of the customer's generating equipment, or, put another way, the likelihood that the customer will be unable to supply part or all of his own electricity needs; second, the extent to which the customer will call on the utility to make up such a deficiency; and third, the degree of coincidence between such outages and the utility's peak demands. Cogenerators generally argue for lower backup charges based on the fact that they are unlikely to experience outages all at the same time, whereas the utilities argue for higher charges due to lack of ability to predict the time or duration of an outage since the operation of the facilities is outside a utility control. In part, this argument comes down to prudent utility planning for meeting loads that are potentially volatile and are dependent in part on the maintenance practices of the non-utility operators.

Where there is not a retail class of customers for backup service, with a rate based upon group outage probabilities, or perhaps even where there is such a class, latitude should be given in the rules to permit groups of qualifying cogenerators or small power producers to contractually "pool" their operations among themselves to minimize the potential cost impact on the utilities. By first pooling among themselves, QFs might facilitate individual contractual dealings with utilities and reduce its attendant costs. Pooled QFs certainly could make a much stronger argument that probabilistic analysis should be used in determining the backup charges, and based on the coordination the analysis would show a lowered probability of coincident outages. Such "pooling" might include arrangements such as coordinated maintenance or mutual

\*We do not mean to imply that the entire shortfall, if there be any, should be imposed on QFs; rather, we merely suggest that it does not seem inappropriate for QFs to bear some share of the burden.

pinning reserves.\* The pooled operations could also be coordinated with the utility further to minimize the potential cost impact of outages. Such pooling would entail some sacrifice of the QFs' flexibility in operations, but the resulting lower backup charges may provide a sufficient incentive. To the extent that operations are not coordinated and individual QFs and the group of QFs as a whole impose greater capacity requirements on the utility system, the costs of such backup service should be fully recovered.

In the analysis of and negotiations over backup probabilities and responsibilities, recognition should be given to the fact that some cogenerators will not be able to continue part or all of their industrial operations if their steam (and thus electric) production facilities break down or are closed down. In other words, some cogenerators may not want or need backup for the part of their electric requirements related to industrial processes that also require steam—when there is no steam, they shut down and go home. On a related matter, recognition should be given to a customer's own backup or reserves in the form of redundant capacity. A customer having sufficiently reliable facilities of its own might consider contracting for backup service from the utility on an as-available basis for the portion of its load that it is sure it can supply itself.

One likely area of contention that arises in connection with interruptible and standby service is the recovery of the utility's customer or facilities costs. There is likely to be somewhat less debate concerning the magnitude of these costs where the customer is a large industrial or commercial facility, since the design of facilities and determination of their cost is often arrived at on the basis of individual negotiation now even where the customer does not have its own generation. (We will discuss these interconnection costs in the next section.) Where smaller customers are involved, however, the rate design for the class to which the customer is assigned may provide for the recovery of some customer costs through usage charges, and may also provide for the recovery of some capacity costs through energy charges. In these situations, the utility is likely to assert—and with considerable merit—that minimum charges have to be increased so as to ensure the recovery of its fixed costs (and some expenses) from dedicated

facilities when the customer does not buy enough energy in a given period to reimburse the utility under the conventional rate design. A minimum bill calculated to recover these costs would seem to be a reasonable approach to this matter, though a discrimination problem might arise if the QF is paying a fully compensatory minimum charge while substantial numbers of customers in the class to which the QF would belong but for its own generation do not return their customer costs.

The final question to be addressed in this section is whether the Commission should specify the kinds of interconnection that should be made available to QFs as customers of a utility. Specifically, the question is whether QFs in general should have an entitlement to operate in parallel with utilities (so that the same customer circuits can be served simultaneously by both customer- and utility-generated electricity), or whether this should be left to the States or the parties (in which case some QFs may be forced to segregate circuits).

In addition to the considerations of cost and possible interference with system operations, there are safety aspects which will require coordination and procedural safeguards. For example, when certain lines are taken out of service in order to perform maintenance or repairs on such lines, adequate procedures must be in place to ensure that they are not energized by the other party prior to completion of the work. However, on the basis of preliminary discussion it appears that problems of operations, equipment protection and worker safety can all be solved, and that in the final analysis this question mostly concerns cost. Therefore, we recommend that operation in parallel be a required option, so long as the customer is willing to bear the costs of the facilities necessary to protect workers and equipment.

#### Sales From Qualifying Facilities to Utilities

Section 210(b) of PURPA provides that the Commission's rules shall insure that in requiring any electric utility to offer to purchase electric energy from any qualifying cogeneration facility or qualifying small power production facility, the rates for such purchase—

- (1) Shall be just and reasonable to the electric consumers of the purchasing utility and in the public interest, and
- (2) Shall not discriminate against qualifying cogenerators or qualifying small power producers.

\* \* \* \* \*

The statute provides that the rate for required purchases not exceed the incremental cost of alternative electric energy, which is defined as the cost of energy which, but for the purchase, the utility would generate or purchase from another source. The rules may not authorize a QF to make a sale other than for resale, though State law may permit a QF to make such sales.

Perhaps the most important question facing the Commission in the pricing area (but probably not the most difficult question) is whether Section 210 contemplates the payment of capacity charges to QFs under any conditions. Section 210 itself speaks only in terms of "electric energy." While this term does not exclude the payment of capacity charges, it does not clearly include it either. For the most part, the Conference Report also uses the term "electric energy." Even the example given in the Conference Report (in support of the point that the cheapest energy available at a given time does not necessarily fix the ceiling of the amount to be paid a QF, because the utility may not have intended to use that cheap (hydro) power at the time the sale took place) is cast in terms of energy costs and energy charges.

There is, however, considerable language in both the statute and the Conference Report in support of the proposition that capacity payments are, at least in some circumstances, not only legal but mandated. First, the "incremental cost to the electric utility of alternative electric energy" would, where capacity is purchased or installed, include a capacity cost. If a cogenerator were offering energy of a like reliability for a similar term, the alternative cost would clearly not be limited to, for example, the energy component of the alternative rate where the alternative is a firm or unit purchase. Indeed, one can well argue that to pay the QF a price based only on displaced energy costs where another utility would receive a capacity payment as well for the same service is discriminatory in violation of the statute.

The Conference Report addresses the calculation of the alternative cost standard at some length. The final paragraph of this section of the Report is the following:

The conferees expect that the Commission, in judging whether the electric power supplied by the cogenerator or small power producer will replace future power which the utility would otherwise have to generate itself either through existing capacity or additions to capacity or purchase from

\* Although the latter would arguably reduce backup generating requirements on the utility's system it may not reduce transmission costs.

other sources, will take into account the reliability of the power supplied by the cogenerator or small power producer by reason of any legally enforceable obligation of such cogenerator or small power producer to supply firm power to the utility.

The references to "additions to capacity" and to obligations "to supply firm power" (the rates for which, in our experience, always include a capacity component) bring us to the conclusion that the better reading of Section 210 is that capacity payments to QFs can be required under certain circumstances; and that, indeed, a utility's refusal to make payments based in part on avoided capacity payments could be discriminatory.

The paragraph from the Conference cited above also has a message for QFs, however: utilities make capacity payments to each other where firm commitments to make and hold capacity available are involved. A cogenerator or small power producer which is unwilling or unable to make such a commitment and to achieve a high degree of reliability, is not enabling the purchasing utility to avoid the costs of construction or a capacity purchase, and thus these costs do not serve to increase the ceiling on the rates the QF can demand.

In short, the statute provides an upper limit on the price for a capacity purchase (including an energy rate component) at the alternative capacity and energy costs avoided due to such purchase. Among other things, the duration of the purchase, the planning horizon of the utility and the capacity and load situation of the utility will affect such alternative costs. Generation expansion models (which discount the future costs of alternatives to a common present value) may be used to quantify such costs once the magnitude and duration of capacity purchases are known. The composition of such studies would vary depending on the answers to certain questions: Will utilities be required to pay now on a discounted basis for capacity not yet needed? Will capacity sales have priority over dump energy? How far into the future must utilities commit to buy, both as to initiation and duration of the sale?

Interruptible (by the QF) energy sales can be priced a number of ways. For example, a split-the-savings concept similar to economy energy purchases in existing interchange agreements could be employed.<sup>10</sup> Although economy

energy is normally priced on an hour-by-hour, transaction-by-transaction basis, consideration should be given to a more general approach with lower administrative costs such as estimated monthly or annual savings. The difference between the cogenerator's out-of-pocket cost and the utility's out-of-pocket cost avoided as a result of the transaction would be shared on an equitable basis between the QF and the utility. Rather than the typical equal split of the savings, latitude should be given to permit negotiations resulting in a greater proportion of the savings going to the cogenerator in order to encourage cogeneration as intended by the statute. So long as the price is less than the alternative cost to the utility, the buying utility's ratepayers benefit from such transactions, and the statute would seem to be satisfied.<sup>11</sup> Such an approach may seem to depart from the Conferees' directive not to scrutinize the costs of QFs as though they were utilities. However, this approach should not generally produce a substantial burden on the QF since in most cases the QF should have calculated its marginal energy cost to determine if it can afford to sell to a utility, particularly at times when the utility's marginal running cost is low. In any case, the statute does not prohibit all inquiry into a QF's costs, and this approach would not require a determination of a reasonable rate of return to the QF, which appears to be the conferees' primary concern.

Where a utility is a member of a centrally dispatched pool, the pool's marginal running cost will probably be the appropriate measure of the ceiling for energy rates. Similarly, if a pool has coordinated planning for capacity additions, the pool's method of sharing those costs should be considered, and in some instances utilized, in determining a pool member's avoided capacity costs.

<sup>11</sup> The Conference Report states that a utility shall not be required to purchase energy from a QF at a rate which exceeds the lower of (1) the rate that is just and reasonable to the utility's customers and nondiscriminatory as to the QF and (2) the incremental cost of alternate electric energy. As stated above, we think that so long as the service being offered by a QF is fully comparable to the alternative, the payment to the cogenerator of the full cost of the alternative would be just and reasonable to the utility's customers. Thus we have difficulty in describing some particular price other than the avoided cost as being just and reasonable to the utility's customers; and difficulty in giving the Conference Report language cited above any precise meaning in a particular situation, other than that some price below the avoided cost is also just, reasonable, and permitted by statute. We do not understand the prescription that the proper price is the lower of the just and reasonable price and the avoided cost as requiring that the selling QF be restricted to a minimal mark-up from its marginal generation cost on its sales to a utility.

As in the case of purchases by QFs, the rules for sales by QFs should permit sufficient latitude to allow "contractual pooling" among QFs to "firm up" capacity available to utilities. Such pooling could permit such things as coordinated scheduling for maintenance which would increase the assured availability of capacity to the utility. Although this may assure increased generating capacity, further consideration should be given to the potential impact on transmission costs of such arrangements.

Section 210(b) also requires that the rates for the purchases by the electric utilities not discriminate against QFs. It is not clear whether the statute only bars discrimination against QFs as a class, or whether it would also bar discrimination among QFs. If the latter, this may create some practical problems in administration. Since the price to be paid for the purchases by the utility is dependent, in part, on the utility's avoided costs, and these costs will vary over time and with the number and magnitude of cogeneration arrangements previously entered into, the rates paid will probably have to differ from one arrangement to another depending on when they were entered into and what future costs are being avoided. Further, as with multiple simultaneous interchange transactions, some priority among QFs may have to be established to determine which is viewed as displacing the utility's highest cost alternative power. Some vintage arrangement or consistent formula approach to the computation of the costs avoided may be considered in the rule for the purpose of determining whether the rates discriminate among qualifying facilities.

Under certain circumstances it may be desirable to allow a cogenerator or small power producer to sell all its output to a utility and, at the same time, purchase all its needs from the utility. Specifically, where a utility needs additional capacity, and one of its customers can build and operate a new generator more cheaply than the utility can, it would be in everyone's interest for the QF to build the unit. However, if the utility's embedded cost-based rates even after it built the new plant are lower than the incremental cost of power from the new facility the QF would have built, then it would be in the QF's interest to let the utility build the plant and supply its needs. Put another way, if a QF were prohibited from buying from and selling to a utility simultaneously, it would be compelled to "buy" from itself at its marginal cost. Where this is lower than the utility's

<sup>10</sup> This analogy may be of some assistance where a State's fuel adjustment clause rules, like FERC's, permit a complete pass-through to customers of the cost of economy purchases where the cost is lower than that of the displaced fuel.

rate based on average embedded cost, then the QF would still build the facility, as it should in this situation; but where the utility's rate is lower than the QF's marginal cost, the wise firm would allow the utility to build and operate the new plant, even though it cannot do so as cheaply as the QF. This problem only arises where a new facility is involved. We have no idea how often the costs would be such that the more costly plant would be built,<sup>12</sup> but since the utility's customers would benefit whenever a QF builds a lower-cost plant than the utility can build, we tentatively recommend that this simultaneous buying and selling be permitted in connection with new facilities.<sup>13</sup>

With regard to existing facilities, however, the situation is exactly the reverse. Here, permitting a customer who has been providing part or all of its own power needs to sell to a utility at or near the utility's incremental cost and simultaneously buy back the same power at average embedded cost would drive up the costs of power to the utility's other customers without doing anything to encourage new cogeneration or desirable kinds of small power production. Thus we would recommend that the rule prohibit this practice.

As indicated in the preceding section, the ratemaking aspects of the interconnection costs may be handled in a variety of ways. Depending upon the size and type of generating equipment a QF has, whether or not the QF wants to operate in parallel with the interconnected utility, and the extent to which the QF expects to sell to the utility, many different types of facilities and arrangements may be appropriate. In many situations, all the required facilities may not be placed on the QF's facilities or at the point of interconnection; rather, it may be necessary for the utility to install or modify equipment elsewhere on the system in order to protect its and QF's equipment and operations.

While we are of the view that the authority to order interconnections is inherent in the Commission's other powers under Section 210, we do not regard this as settling the question of who bears the attendant cost. As to this

question, we think the proscription against compelling to the utility's customers to subsidize QFs is dispositive: the QF should pay the reasonable costs of the interconnection necessary and appropriate to its circumstances. By the same token, however, the comparable costs attending the purchase or supplying of the same electric energy from an alternative source should be taken into account in determining the price the utility should pay the QF for electricity.

The recovery of the utility's costs of interconnection can be accomplished in either of two ways: through a lump-sum hook-up charge, or through a credit (where the utility is buying from the QF) or surcharge (where the QF is buying from the utility) to the basic price. Where these facilities' costs are to be amortized over a period of years, or volume of sales, it would seem reasonable to allow the utility to secure its investment in some manner where either the financial integrity of the QF or the duration of the arrangement are in question.

As this entire discussion of pricing and interconnection indicates, the variety of arrangements that might be made between QFs and utilities is enormous. Therefore, we would recommend that the Commission promulgate broad general rules in the nature of guidelines, leaving flexibility for the States to experiment and accommodate local circumstances, and leaving room for the parties to negotiate the particular terms and conditions of their arrangements within the broad parameters of the Commission's rules. Under this approach, the States and the Commission would function more as arbitrators of disputes the parties can not resolve than as traditional regulators. This approach is, in our view, practically unavoidable with regard to the sales by QFs to utilities. On the other hand, as noted above, the sale from utilities to QFs is in most instances the type of transaction the States now regulate, and continuation of this regulation without substantial change is certainly a real option.

Finally, we must observe that the arbitration of disputes approach espoused above is not appropriate where a utility is participating in the ownership or even the operation of a QF. We would recommend that the specific terms of such arrangements be scrutinized by the States to ensure that the pricing or other provisions are not unduly discriminatory or beneficial.

#### Environmental Impact Statement

It appears to us that an environmental impact statement will not be necessary for Section 210 alone. We reach this preliminary conclusion on the basis that most of the effect of Section 210 flows from statutory mandates as to which the Commission has little or no discretion. the requirement that utilities buy from and sell to QFs; the requirement that the Commission grant exemptions necessary to encourage QFs (though it is not authorized to grant exemptions from environmental laws or regulations); and the requirement that prices be set within certain guidelines. In other words, we do not think that the Commission's adoption of one set of rules rather than another on those matters as to which the Commission has discretion or flexibility would constitute a major Federal action significantly affecting the quality of the human environment.

There does exist some question in our minds, though, as to whether the Section 201 rules together with the Section 210 rules might not require an environmental impact statement. The Section 201 rules will establish the fuel use and fuel efficiency standards for qualifying cogenerators and qualifying small power producers; and the Section 210 rules will describe with some greater specificity than does the statute the benefits of qualification. The environmental impact of this part of PURPA (whether or not the impact is significant) will be a product of the two rules acting together.

As stated elsewhere in this memorandum, we anticipate that the number, size, and kind of QFs that will develop will vary considerably from state to state and region to region. Similarly, the amount and kinds of utility fuel displaced by QFs will differ significantly around the country. As a consequence, the states would appear to be in a very good position to provide the information from which the Commission can determine whether the Section 201 and 210 rules would have a significant effect on the quality of the human environment, and whether that effect will be beneficial or detrimental. Therefore, we recommend that the Commission promptly invite comment from the States in particular and the public in general on this matter so that, at the least, there will be a basis for an assessment of environmental impact.

End of Memorandum.

#### Written Comments

Interested persons are invited to submit written comments on this staff paper to the Office of the Secretary, Federal Energy Regulatory Commission,

<sup>12</sup> Unfortunately, it is quite possible that the difference in the investment tax credits which may be available to, respectively, a utility and an owner of a QF will distort this cost comparison.

<sup>13</sup> Under the provisions of the Fuel Use Act of 1978, the sale of more than 50% of the output of a new installation would give the facility the status of an electric power plant. As a consequence, absent exemption on other grounds, a cogenerator could not use oil or gas as the basic generation fuel. However, the Fuel Use Act does not apply to installations consuming less than 100 million Btus per hour.

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825 North Capitol Street, N.E.,  
Washington, D.C. 20426. Comments  
should reference Docket No. RM79-55  
on the outside of the envelope and on all  
documents submitted to the  
Commission.

Fifteen (15) copies should be  
submitted. All comments and related  
information received by the Commission  
by August 1, 1979, will be considered  
prior to the promulgation of final  
regulations.

By the Commission.  
Kenneth F. Plumb,  
*Secretary.*

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