

ADMINISTRATOR'S FINAL RECORD OF DECISION
VARIABLE INDUSTRIAL POWER RATE
VI-91

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ADMINISTRATOR'S FINAL RECORD OF DECISION

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ATTACHMENT - PROPOSED VARIABLE INDUSTRIAL POWER RATE

CHAPTER I
BACKGROUND

A. Introduction

Bonneville Power Administration (BPA) sells electric power to its direct service industrial (DSI) customers under the Industrial Firm Power (IP) rate schedule and, for those DSI aluminum smelters electing to participate, the Variable Industrial Power (VI) rate schedule and contracts.

The VI rate contracts are for a term of 10 years, ending June 30, 1996. The VI rate schedule is in effect through June 30, 1993.

On September 28, 1990, BPA published a notice proposing to adopt a rate virtually identical to the existing VI rate for the period July 1, 1993, through June 30, 1996. 55 Fed. Reg. 39,691. This Record of Decision (ROD), based on the record developed during a rate hearing, adopts the proposal.

B. History of the VI Rate

During the first half of the 1980s, the amount of electric power demanded by the DSI aluminum smelter customers was unstable and unpredictable due to fluctuating aluminum market conditions. Many of the region's smelters were operated at reduced levels or shut down during that time. The unpredictable demand for power caused uncertainty about BPA's resource planning, financial strength, and rate stability.

The issue of the DSIs' long-term viability was raised in BPA's 1985 wholesale power rate proceeding. The DSIs claimed that they need predictable and stable rates to help them make long-term investment decisions. In June of 1985, BPA issued the DSI Options Study, which examined mid- to long-term DSI policy, service, and rate options. Based on the results of the study and public comment, BPA decided to pursue the development of a variable power rate linked to the price of aluminum.

In 1985 and 1986, BPA conducted a hearing pursuant to Pacific Northwest Electric Power Planning and Conservation Act (Northwest Power Act) § 7(i), 16 U.S.C. § 839e(i), which resulted in the adoption in 1986 of the VI rate. Administrator's Record of Decision, 1986 Variable Industrial Power Rate Proposal (June 1986) (1986 VI ROD). The structure of the VI rate is described in detail herein in Chapter II.

The VI rate was first implemented in August of 1986. The rate was designed to be in effect for 10 years, through June of 1996. All DSI aluminum smelters elected to take service under this rate schedule and entered into the 10-year contracts with BPA to implement the rate. The Federal Energy Regulatory Commission (Commission) granted final approval of the rate for only 7 years, through July of 1993. United States Dep't of Energy - Bonneville Power Admin., 36 F.E.R.C. ¶61,078 (1987).

In order to fulfill the full 10-year term of the VI contracts, BPA proposes to adopt a rate, nearly identical to the existing VI rate, for the remaining 3 years, through June 30, 1996. BPA proposes to adopt a VI rate more than 2 years before the current VI rate expires because rate certainty would help the DSIs make investment decisions that will maintain their competitiveness in the aluminum market. The DSIs' ability to make investment decisions may be hindered by unnecessarily introducing uncertainty about the availability of the VI rate. Parker *et al.*, VI-91-E-BPA-01, 2. Moreover, the analysis forming the basis for adopting the VI rate for the additional 3-year period was prepared during the summer of 1990 to address whether BPA should terminate the VI rate and contract. (The VI-87 rate schedule and VI contract contain provisions allowing BPA to terminate the rate and contract at the 5-year point, effective July 1, 1991. In a letter dated January 15, 1991, the BPA Administrator informed parties that the VI rate and contract would not be terminated.) The analysis received public comment and would have to be re-done at a later time if BPA delayed the VI rate hearing. *Id.*, 2.

C. Procedural History of This Rate Proceeding

In accordance with Northwest Power Act § 7(1), 16 U.S.C. § 839e(1), BPA announced a hearing on its rate proposal. 55 Fed. Reg. 39,691 (1990). Five interventions were filed on behalf of the following: Public Power Council 1/; PacifiCorp, dba Pacific Power & Light Company and Utah Power & Light Company; Puget Sound Power & Light Company; Association of Public Agency Customers 2/; and Direct Service Industrial Customers. 3/

Dean F. Ratzman, Hearing Officer, commenced the proceeding with a prehearing conference on October 11, 1990, wherein he ruled upon matters of interventions and scheduling. Judge Ratzman also issued "Special Rules of Practice to Govern This Proceeding." VI-91-O-02. BPA's direct testimony, filed October 2, 1990, was sponsored by Nancy Parker, Raymond D. Bliven, and Samuel O. Sugiyama. VI-91-E-BPA-01. Qualifications of those witnesses were filed at the same time. VI-91-Q-BPA-01, -02, and -03. The parties waived cross-examination of BPA's witnesses (see VI-91-M-04, VI-91-O-03). During the course of discovery, BPA responded to 17 data requests, and the DSIs responded to 2 data requests.

1/ The Public Power Council is a trade association consisting of 114 of BPA's preference customers.

2/ The Association of Public Agency Customers is a trade association consisting of nine industries that purchase electric power from BPA's preference customers.

3/ The DSIs intervened as an entity and through the following individual members: Aluminum Company of America; Atochem North America; Columbia Aluminum Corporation; Columbia Falls Aluminum Company; Georgia-Pacific Corporation; Intalco Aluminum Corporation; Kaiser Aluminum & Chemical Corporation; Northwest Aluminum Company; Oregon Metallurgical Corporation; Reynolds Metals Company; and Vanalco, Inc.

The DSIs were the only litigant other than BPA to file testimony. Exhibits VI-91-E-DS-01 and VI-91-Q-DS-01 were admitted on motion and affidavit without cross-examination. VI-91-M-05, VI-91-O-04. That testimony supports BPA's proposal. No initial briefs were filed. No comments were received from participants. A draft ROD was published on January 18, 1991; no briefs on exception were filed.

D. Legal Guidelines Governing Establishment of Rates

1. Statutory Guidelines

Ratemaking standards governing BPA's wholesale power rates are found exclusively in the Northwest Power Act. Section 7(a) directs the Administrator to establish, and periodically review and revise, rates for the sale and disposition of electric energy and capacity. Rates are to be set to recover collectively, over a reasonable period of years, "in accordance with sound business principles, the costs associated with the acquisition, conservation, and transmission of electric power, including the amortization of the Federal investment in the Federal Columbia River Power System (FCRPS) (including irrigation costs required to be repaid out of power revenues) and the other costs and expenses incurred by the Administrator" 16 U.S.C. § 839e(a)(1).

Northwest Power Act § 7(a) also directs that these rates be set in accordance with § 9 of the Columbia River Transmission System Act (Transmission System Act), 16 U.S.C. § 838g (1974), and § 5 of the Flood Control Act of 1944, 16 U.S.C. § 825s. Section 9 of the Transmission System Act requires, among other things, that BPA's power and transmission rates be established with a view to encouraging the widest possible diversified use of Federal power at the lowest possible rates to consumers consistent with sound business principles, while having regard to recovery of costs of producing and transmitting the power and to repayment of the U.S. Treasury. 16 U.S.C. § 838g. See also 16 U.S.C. § 839e(a)(2)(C). Substantially the same requirement is set out in § 5 of the Flood Control Act, 16 U.S.C. § 825s.

2. Specific Rate Guidelines

Rates for the DSIs are to be set according to the provisions of Northwest Power Act § 7(c), 16 U.S.C. § 839e(c). This section provides that, beginning July 1, 1985, the rate or rates that apply to DSIs shall be set at "a level which the Administrator determines to be equitable in relation to the retail rates charged by [preference] customers to their industrial consumers in the region." 16 U.S.C. § 839e(c)(1)(B).

That determination

shall be based upon the Administrator's applicable wholesale rates to . . . public body and cooperative customers and the typical margins included by such . . . customers in their retail industrial rates

16 U.S.C. § 839e(c)(2).

Section 7(c)(2) further directs that the rate determination must take into account

(A) the comparative size and character of the loads served;
(B) the relative costs of electric capacity, energy, transmission, and related delivery facilities provided and other service provisions; and (C) direct and indirect overhead costs, all as related to the delivery of power to industrial customers

16 U.S.C. § 839e(c)(2)(A)-(C).

Section 7(c)(2) requires that DSI rates "shall in no event be less than the rates in effect for the contract year ending on June 30, 1985." See 1986 VI ROD at 9-22.

Finally, § 7(c)(3), 16 U.S.C. § 839e(c)(3), directs that DSI rates must be adjusted

to take into account the value of power system reserves made available to the Administrator through his rights to interrupt or curtail service to such direct service industrial customers.

3. Ratemaking Discretion Vested in the Administrator

The Administrator has broad discretion to interpret and implement statutory standards applicable to ratemaking. These standards focus on cost recovery and do not restrict the Administrator to any particular rate design method or theory. See Pacific Power & Light Co. v. Duncan, 499 F. Supp. 672, 683 (D. Ore. 1980). Accord, City of Santa Clara v. Andrus, 572 F.2d 660, 668 (9th Cir. 1978) ("widest possible use" standard is so broad as to permit "the exercise of the widest administrative discretion"); Electricities of North Carolina v. Southeastern Power Admin., 774 F.2d 1262, 1266 (4th Cir. 1985).

The United States Court of Appeals for the Ninth Circuit has specifically recognized the Administrator's ratemaking discretion. Central Lincoln Peoples' Util. Dist. v. Johnson, 735 F.2d 1101, 1116, 1120-1129 (9th Cir. 1984) (Central Lincoln) (upheld BPA on the merits of every rate issue and declared that "[b]ecause BPA helped draft and must administer the [Northwest Power] Act, we give substantial deference to BPA's statutory interpretation"); PacifiCorp v. Federal Energy Regulatory Comm'n, 795 F.2d 816, 821 (9th Cir. 1986) ("BPA's interpretation is entitled to great deference and must be upheld unless it is unreasonable"); Atlantic Richfield Co. v. Bonneville Power Admin., 818 F.2d 701, 705 (9th Cir. 1987) (BPA's rate determination upheld as a "reasonable decision in light of economic realities"); cf. Aluminum Co. of America v. Central Lincoln Peoples' Util. Dist., 467 U.S. 380, 389 (1984) ("[t]he Administrator's interpretation of the [Northwest Power] Act is to be given great weight"); Department of Water and Power of the City of Los Angeles v. Bonneville Power Admin., 759 F.2d 684, 690 (9th Cir. 1985) ("[i]nsofar as agency action is the result of its interpretation of its organic statutes, the agency's interpretation is to be given great weight"); Aluminum Co. of America v. Bonneville Power Admin., 903 F.2d 585, 590 (9th Cir. 1989), cert. denied, 59 U.S.L.W. 3457 (U.S. Jan. 7, 1991) (No. 90-505) (Alcoa) ("We defer to the

interpretation of a statute by the agencies charged with administering it Because BPA drafted the [Northwest Power] Act, its interpretation is to be given 'great weight' and should be upheld if reasonable.")

4. Confirmation and Approval of Rates

BPA's rates become effective upon confirmation and approval by the Commission. 16 U.S.C. § 839e(a)(2). The Commission's review is appellate in nature, based on the record developed by the Administrator. Central Lincoln, 735 F.2d at 1116; Alcoa, 903 F.2d at 590; United States Dep't of Energy - Bonneville Power Admin., 13 F.E.R.C. ¶61,157, 61,339 (1980). The Commission may not modify rates proposed by the Administrator, but may only confirm, reject, or remand them. United States Dep't of Energy - Bonneville Power Admin., 23 F.E.R.C. ¶61,378, 61,801 (1983). See also 18 C.F.R. § 300.21(e). The purpose of Commission review of BPA's power rates is to ensure that those rates are sufficient to repay the Federal investment in the FCRPS over a reasonable number of years after first meeting BPA's other costs, and are based on BPA's total system costs. 16 U.S.C. § 839e(2).

Pursuant to Northwest Power Act § 7(1)(6), 16 U.S.C. § 839e(1)(6), the Commission has promulgated rules establishing procedures for the approval of BPA rates. 18 C.F.R. § 300 (1984). The Commission adopted a final rule amending these procedures effective July 6, 1987. 52 Fed. Reg. 20,704 (1987).

CHAPTER II VI RATE PROPOSAL

A. Proposed VI-91 Rate Schedule

The proposed VI-91 rate (Attachment 1) is nearly identical to the VI-87 rate. Only the language in the VI-87 rate that is not relevant to the 1993-1996 period has been deleted from the proposed VI-91 rate schedule and GRSPs. The rates and rate parameters specified in the rate schedule reflect those in effect on July 1, 1990. The rate levels established for the period July 1993 through June 1996, will be the same under the VI-91 rate as they would have been under the VI-87 rate had the Commission approved it for the full 10-year period. Parker et al., VI-91-E-BPA-01, 5.

The VI rate varies with the market price of aluminum, lagged 3 months. When the market price of aluminum drops below a defined point, the VI rate decreases, helping the smelters remain competitive and maintain stable loads on BPA. Likewise, when the market price rises above a defined point, the VI rate increases, enhancing BPA's revenue from sales to DSIs. Id., 5.

The key parameters of the VI rate are the plateau, the upper and lower pivot prices, and the upper and lower rate limits. The VI rate is constant over a range of aluminum prices between the upper and lower pivot prices. This range is the plateau, which is set equal to the IP rate. When the price of aluminum is above the upper pivot price, the energy rate increases by 0.75 mills/kilowatthour (kWh) for every 1 cent/pound (lb) increase in aluminum prices, up to the upper rate limit. The upper rate limit is the point above which an increase in aluminum prices does not result in additional changes in the rate. When aluminum prices are below the lower pivot price, the energy rate decreases by 1 mill/kWh for every 1 cent/lb decrease in aluminum prices, down to the lower rate limit. The lower rate limit is the floor: decreases in aluminum prices below the lower rate limit do not result in additional changes to the rate. Id., 6.

The VI rate is adjusted every general rate case. The demand charge, plateau energy charge, first quartile service adjustment, and upper and lower rate limits are adjusted based on the change in the overall IP rate level. Thus, the VI rate reflects BPA cost increases. The upper and lower pivot points are adjusted every year on July 1 to reflect changes in aluminum production costs. In addition, the lower rate limit is increased by 1 mill/kWh every 2 years on July 1. Id., 6-7.

B. VI Rate Review

1. Decision Criteria

When the VI rate was developed in 1986, the smelters were increasingly operated at reduced levels or shut down. A large amount of surplus power was available on the Federal system, and the opportunity cost of the surplus power was low. The specific goals of the VI rate as developed in 1986 for a 10-year period were the following:

- a. To discourage plant closure in the near term;
- b. To encourage high aluminum smelter operating rates and discourage swing operations during BPA's surplus period; and
- c. To increase revenues over revenues expected if the IP rate were to remain in effect. If possible, the average VI rate should equal the average IP rate over the 10-year period.

1986 VI ROD, 29.

These specific goals were stated in terms of the then-current conditions. The first two goals have been met by the VI rate. The third goal has been achieved for the period the rate has been in effect. Parker et al., VI-91-E-BPA-01, Attachment 2. Over the full 10-year period, the DSIs forecast that the VI rate will increase revenues by at least \$249 million over those expected if the IP rate were in place. Schoenbeck, VI-91-E-DS-01, 6. The VI rate, which was forecast in 1986 to collect a higher average rate than the IP rate over a 10-year period, is still forecast to accomplish that goal. The DSIs calculate that the average VI rate is forecast to be 25.1 mills/kWh for the 10-year period compared to a forecast IP rate of 24.5 mills/kWh. Id., 10-11. More fundamentally, however, the VI rate was designed to improve BPA's financial position by stabilizing DSI load at a high level. This would enable BPA to recover greater revenues from the sale of that power to the DSIs than from alternate uses and reduce the risk associated with volatile DSI loads and alternate markets. Parker et al., VI-91-E-BPA-01, 8.

BPA is forecasting currently that little or no surplus firm power will be available and that alternate uses of the power that were not present in 1986, such as displacing purchase power, may now be available. While current circumstances differ somewhat from those in 1986, the fundamental objective of the VI rate goals is valid. BPA still wishes to improve its financial position by stabilizing DSI loads in order to recover greater revenues and reduce risk of revenue underrecovery due to volatile loads and markets. Id., 8.

In addition, the VI rate appears to make the smelters more competitive in the world aluminum market, particularly during periods of low aluminum prices. The smelters' ability to negotiate contracts and make investments may be hampered without the continuation of the VI rate. Given the success of the VI rate for both the aluminum smelters and BPA, the smelters likely have conducted business and made investments since 1986 expecting that the VI rate would be in place for the full 10-year contract period. Id., 8-9.

Although the VI rate was approved for only 7 years, the VI rate goals were developed assuming that the rate would be effective for 10 years. To develop criteria by which to evaluate the proposed VI-91 rate for the remaining 3 years of the contract term, BPA focused on the fundamental objectives of the VI rate that were embodied in the specific goals. The resulting criteria used in evaluating this VI rate proposal are the following:

- a. Recover revenues and maintain a level of financial risk comparable to what could be expected if BPA does not have a VI rate; and
- b. Help the aluminum smelters cope with aluminum price volatility if the VI rate is beneficial to BPA.

In the interests of rate stability and continuity, then, the VI rate should be continued through the 10-year contract term if revenues and financial risk are approximately the same as under an IP rate. Parker *et al.*, VI-91-E-BPA-01, 7.

The DSIs assert that the 1986 goals of encouraging high operating levels, enhancing BPA revenue, and charging a rate at least equivalent to the IP rate remain valid. They suggest that an additional important consideration is how the VI rate has performed so far, and its expected performance over the remaining years of the contract term. If positive benefits can be shown over the entire 10 years, then the VI rate should be extended. Schoenbeck, VI-91-E-DS-01, 4. The DSIs conclude that the goals continue to be met by the VI rate and, thus, the rate should be extended. *Id.*, 15-16.

2. Evaluation of Results of VI Rate Analysis

To capture a full range of aluminum market conditions, BPA analyzed the effect of six aluminum price scenarios on revenues net of purchase power and storage costs for the forecast period. For each aluminum price forecast, BPA developed two forecasts of aluminum smelter loads, one assuming the VI rate was in effect, and one assuming the IP rate was in effect. Using the Revenue Forecast model, BPA derived expected revenues net of purchase power and storage costs for the two load cases of each aluminum price scenario and compared them. One expected value was calculated for all six aluminum price scenarios: probabilities of occurrence for each of the six aluminum price forecasts were developed and applied to the revenue difference between each of the two cases (revenue assuming the VI rate and revenue assuming the IP rate). Parker *et al.*, VI-91-E-BPA-01, 9. See Attachment 4 of VI-91-E-BPA-01 for an overview of the analytic process.

a. Results: Aluminum Smelter Loads

Aluminum smelter loads are higher with the VI rate in place than with the IP rate for four of the six aluminum price forecasts. For the remaining two aluminum price forecasts, aluminum smelter loads are the same regardless of the rate. Therefore, aluminum smelter loads are forecast to be more stable at the VI rate than at the IP rate. *Id.*, 9-10.

The greater DSI load stability with the VI rate increases BPA's operational and resource planning certainty, and reduces BPA's reliance on volatile economy energy markets for revenue recovery. *Id.*, 9-10. Assuming the IP rate is in place, DSI loads would fluctuate as aluminum prices change. The changing DSI loads would cause BPA to adjust its annual operating plan. BPA operations could become less efficient and, possibly, more expensive. *Id.*, 10.

The DSIs argue that a high DSI load level provides additional operational benefits to BPA. They cite a 1990 DSI-sponsored study that undertook to

determine the value to the power system of the DSI load shape and service characteristics. Schoenbeck, VI-91-E-DS-01, 14. The study declares that minimum generation constraints on the Federal hydro system already constrain operations or dictate return schedules to some extent for 6 months of the year. Id., 14-15. Under the Low Cycle aluminum forecast, IP smelter loads decline more than 800 average megawatts. The DSIs claim that such substantial decreases in smelter load would exacerbate BPA's minimum generation constraints and increase costs. Therefore, DSIs assert that maintenance of a high DSI operating level also provides system benefits by maintaining BPA operating flexibility. Id., 15.

BPA's resource planning certainty also is increased by the greater DSI load stability at the VI rate. When DSI load is stable and DSIs are healthy, BPA and its customers can have greater confidence in the load forecast upon which BPA's need to acquire resources is based. Thus, the VI rate increases BPA's operational and resource planning certainty. Parker et al., VI-91-E-BPA-01, 10-11.

b. Results: Revenues

On an expected value basis for the 3-year period, 1993-1996, BPA revenues from the aluminum smelters were forecast to be \$19.6 million higher assuming the VI rate is in effect than if the IP rate is in effect. More revenues are forecast from smelters at the VI rate due, in part, to the higher smelter loads at the VI rate than at the IP rate. Id., Attachment 7. Overall, expected revenues net of purchase power and storage costs are forecast to be \$19.2 million lower assuming the VI rate is in effect than if the IP rate was in effect. Id., Attachment 6. This difference between the overall revenues and the smelter revenues is attributable to the forecast assumptions regarding opportunity cost.

Aluminum smelter loads are lower in the IP case than in the VI case. The Revenue Forecast model used to compute revenues net of purchase power and storage costs assumes perfect knowledge of loads and resources at the beginning of a year, and thus, assumes purchases of exactly the amount of power necessary to serve loads. Given that smelter loads are lower at the IP rate than at the VI rate, less purchase power is required and more surplus energy is available to market. In comparing the VI case to the IP case, the lower revenue from the smelters at the IP rate is made up by a decrease in purchase power cost plus additional surplus sales. Id., 12-13.

BPA interprets the overall revenue difference of \$19.2 million as not being significantly different from a neutral result (i.e., zero). The revenue difference is 0.3 percent of the total revenues (excluding revenues from utilities participating in the Residential Exchange program) of \$7.8 billion for the 3-year period. The analyses are based on forecasts of conditions that are, by nature, often quite volatile (such as purchase power cost and economy energy prices). In addition, models used to forecast smelter loads and BPA revenues are simulations of complex systems and decision processes. Id., 11-12.

The DSIs assert that BPA's assumption, that BPA can exactly match loads and resources without incurring any unavoidable cost commitments, is unrealistic. Schoenbeck, VI-91-E-DS-01, 7. They claim that BPA's resource

acquisition program will focus on conservation, hydro efficiency improvements, billing credits, competitive bid acquisition, and a pilot geothermal project for which the cost will primarily be fixed. They argue that, therefore, the revenue analysis should assume that resources are acquired regardless of whether the projected load materializes, and that the resource cost is not displaceable. Schoenbeck, VI-91-E-DS-01, 7-8.

The DSIs did a revenue analysis similar to BPA's except they assumed the same amount of 100 percent fixed cost resource acquisitions in both the VI and IP cases. As smelter load decreased in the IP case, surplus power was available to sell, but could not displace any resource cost. Their analysis resulted in additional expected revenue of \$12.4 million for FYs 1991-1996 in the VI case compared to the IP case. Id., 8-9.

c. Predictability and Stability of BPA Revenues

BPA revenues will likely be more predictable and stable with the VI rate than with the IP rate. This is due to two factors. First, the VI rate plateau is significantly elongated beginning July 1, 1991 through 1996, due to high aluminum prices experienced during the first 5 years of the VI rate. Therefore, the monthly VI rate will be the plateau rate over a wide range of aluminum prices. Parker et al., VI-91-E-BPA-01, 13. Second, smelter load is forecast to be lower at the IP rate than at the VI rate. The freed-up power in the IP case is sold as surplus or displaces purchases. Thus, due to the greater dependence on market factors for revenue recovery at the IP rate, the risk of revenue underrecovery will likely be greater at the IP rate than at the VI rate. Id., 13-14.

C. Ability to Repay Treasury

BPA's ability to repay the Treasury is not affected by continuing the VI rate through 1996. The VI rate structure is fixed, but the parameters of the rate are adjusted in general rate cases to reflect BPA cost increases. In addition, BPA generally reviews all rates every 2 years, and at least every 5 years, to assure that rates are sufficient to recover all costs. If BPA forecasts that its current rates will not be sufficient to recover its revenue requirement, BPA would adjust all rates to recover, in total, all BPA costs. Parker et al., VI-91-E-BPA-01, 15.

The VI rate has had a favorable effect on BPA revenue recovery since it was first implemented in 1986. For the period August 1986 through July 1991, BPA estimates that \$230 million more in revenues will be collected under the VI rate than if the IP rate were used for aluminum smelter loads. Aluminum prices were low when the VI rate was developed but recovered to higher levels during 1987. Revenues from the VI rate reflect the high aluminum prices: for the 52-month period August 1986 through November 1990, the monthly VI rate was at the plateau or above for 38 months; and it was at the upper rate limit for 23 of the 38 months. Id., 4.

In addition, the DSIs assert that the lower rate limit (the floor) of the VI rate will be substantially higher than BPA's opportunity cost of serving the aluminum smelters. They argue that California, as BPA's best market for surplus power, has sufficient resources on a statewide basis through 2001. Therefore, BPA's opportunity cost will approximate the cost of displacing

California oil, gas, and coal resources or economy purchases from the inland Southwest. Given that BPA's realized nonfirm energy rates in the revenue analysis are lower than the VI rate lower rate limit demonstrates that BPA would expect to collect more revenue at the VI rate than in alternate markets. Schoenbeck, VI-91-E-DS-01, 12-13.

D. Summary

BPA's testimony is un rebutted that the proposed VI rate meets the two criteria for deciding that the rate should remain in place through the term of the VI rate contract. The implementation of the VI rate for the last 3 years of the contract term allows BPA to recover revenues and maintain a level of financial risk at least comparable to what would be expected at the IP rate. Continuing the VI rate through the VI contract term also helps the smelters cope with aluminum price volatility. The more stable aluminum smelter load that results from the VI rate aids BPA's financial, operational, and resource planning processes.

Moreover, BPA's unopposed testimony shows that the VI rate will not affect negatively BPA's ability to repay the Treasury and recover its total costs since BPA will adjust rates when current rates are not sufficient to recover all costs.

Finally, un rebutted testimony submitted by the DSIs demonstrates that over the 10-year period, August 1986-June 1996, the expected revenues assuming a VI rate will be greater than expected revenues assuming the IP rate is in place. In addition, the DSIs forecast that over the 10-year period, the average VI rate is higher than the average IP rate.

CHAPTER III

ENVIRONMENTAL IMPACTS

A. Introduction

The National Environmental Policy Act of 1969, 42 U.S.C § 4321, requires that environmental impact analyses be performed before making decisions on major Federal actions that significantly affect the environment. In April of 1986, BPA completed the DSI Options Final Environmental Impact Statement (DOE/EIS-0123F) (Final EIS), which analyzed the potential environmental effects of three options (actions) that BPA was considering at the time. The purpose of those options was to stabilize the electrical load of BPA's DSI customers in order to enhance BPA's revenue stability and facilitate resource planning. The three options were: (1) a variable rate to the aluminum smelter DSIs based on market prices for aluminum; (2) a link between the IP and PF rates (IP-PF rate link); and (3) a conservation/modernization (Con/Mod) program directed toward the aluminum smelter DSIs. These options were not alternatives to each other, since each could be implemented independently. BPA implemented all three options.

The Final EIS considered alternate forms of the VI rate as well as the no action alternative. Alternatives considered in the Final EIS related to the values defining the upper and lower pivot points; the upper and lower slopes; the maximum and minimum rate limits; and different ways to adjust the rate over time. In the 1986 VI ROD, both the proposed VI rate and the load maintenance alternative were found to be environmentally preferable. The Administrator selected one of these two alternatives; the VI rate.

The following discussion pertains to only the adoption of the VI rate for the additional 3-year term. The IP-PF rate link was extended through rate periods commencing on or before the termination of the VI rate contracts. Administrator's Record of Decision, 1990 IP-PF Rate Link Extension (November 1990). The Con/Mod program is closed to new applications for participation, though payments to the participating DSI aluminum smelters for energy savings will continue for a number of years.

In proposing to adopt a rate nearly identical to the existing VI rate, BPA considered the same potential impacts identified in the EIS that were considered in the initial implementation of the VI rate when it was adopted in 1986, including cumulative impacts of the three actions.

B. Environmental Impact Considerations

The Final EIS still serves as an adequate basis for providing environmental information relative to a decision to adopt a substantially similar rate. No supplement to the Final EIS is necessary. The rate selected by the 1986 VI ROD incorporated as one of its provisions a 10-year term, concluding June 30, 1996. Continuation of the VI rate from 1993 to 1996 will result in the rate being effective only the length of time contemplated by the 1986 VI ROD as well as by the Final EIS. 1986 VI ROD, 137; Final EIS, 92.

This decision does not require a consideration of alternatives other than to extend the rate in its current form for the remainder of the VI contracts or to terminate the current rate. No party expressed a view that other alternatives should be considered.

Experience with the VI rate, coupled with the IP-PF rate link and the Con/Mod program, has demonstrated a stabilizing effect on DSI loads, as was projected in the Final EIS and as was intended. Moreover, the VI rate was among the factors that enabled the smelter at The Dalles, Oregon, to re-open, as was intended, and which the analysis in the Final EIS indicated was a possibility. To the extent that the VI rate has stabilized DSI load, socioeconomic benefits projected by the Final EIS have been achieved. Closure of certain at-risk DSIs, which presumably the VI rate helped prevent, would have resulted in locally significant adverse socioeconomic effects in some smaller communities in which the DSI plant was and is a major economic force in terms of employment, payment of taxes and so on.

Adoption of the VI rate for an additional 3 years would continue to serve the purpose of stabilizing aluminum smelter loads. A decision to retain the rate would be environmentally preferable to letting the rate terminate, because the socioeconomic benefits provided by the aluminum smelters outweigh the adverse effects of the smelters on the physical environment.

The DSIs continue to cause adverse effects on the physical environment (for example, discharge of air and water pollutants, production of solid waste, and the like) as reported in the Final EIS. But these effects are regulated by appropriate state, Federal, and local environmental agencies and are governed by environmental laws, regulations, and permit conditions. Specific environmental problems reported in the Final EIS, primarily the smelters' past solid waste disposal practices, are being dealt with, resulting in a reduction in environmental impacts. The Final EIS included consideration of the entire range of expected physical and socioeconomic effects of the operation of the aluminum smelters. It addressed both impacts that would result from operation of the plants at their full production capacity and impacts that would result from their closure. Thus the continued stabilizing effect on DSI loads, a consequence of extending the VI rate, is not expected to result in environmental impacts beyond the range of potential impacts projected for the aluminum smelter DSIs in the Final EIS.

In the long term, preserving aluminum smelter electrical load means that new generating or conservation resources might be needed sooner. Impacts of the VI rate on operation of the region's dams and reservoirs, and specifically on anadromous fish, could be either adverse or beneficial depending on circumstances such as the time of year and river flow. Spilling water past turbines in the right quantities and at the right times of the year is important to the survival rates of downstream migrating fish. Too much spill, however, causes nitrogen supersaturation of the water which is fatal to fish. Final EIS, 76-77. The impacts of the VI rate alternatives, however, cannot be divorced completely from the impacts of other actions BPA may take to market the power made available if aluminum smelter loads decrease.

The Final EIS found that none of the VI rate alternatives had other than insignificant effects on BPA's rates to its other customers. Final EIS, 91-94, 100-102.

CHAPTER IV

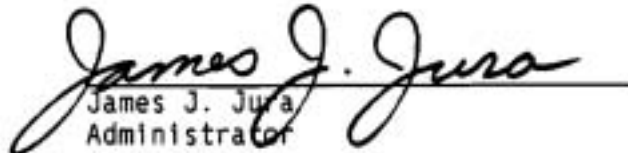
DECISION

The proposal to adopt a rate virtually identical to the existing VI rate is consistent with the rate directives of the Northwest Power Act and other applicable legislation. The rate has provided and will continue to provide BPA with increased revenue stability, and therefore enhances BPA's ability to meet its planned payments to the U.S. Treasury. Adoption of the VI rate also will help the aluminum smelter DSIs maintain their competitiveness in the aluminum market. In addition, based on the analysis in the Final EIS, the rate is not expected to result in environmental impacts which are unforeseen or unacceptable. Finally, as evidenced by the absence of opposition to BPA's proposal, BPA's customer groups support the proposed VI rate.

In performing his duties under Northwest Power Act § 7(1), the Hearing Officer has assured that a full and fair evidentiary hearing, open to all interested parties and participants, has been conducted on all issues relevant to this case.

Based upon the record in this proceeding, I adopt the VI rate schedule, shown in the Attachment, for the period July 1, 1993, through June 30, 1996.

Issued at Portland, Oregon, on January 30, 1991.


James J. Jura
Administrator

ATTACHMENT

Proposed Variable Industrial Power Rate (VI-91)

Section I. Availability

This schedule is available to DSI customers for purchases under the Power Sales Contract implementing the VI Rate Schedule (Variable Rate Contract) of: (1) Industrial Firm Power; and (2) Auxilliary Power if requested by the DSI customer and made available by BPA. This schedule is available only for that portion of a DSI's load used in primary aluminum reduction including associated administrative facilities, if any. By virtue of incorporation of this rate schedule and associated GRSPs in the Variable Rate Contract, DSIs electing to purchase power under this rate schedule contractually agree to the terms and conditions of this rate schedule. A DSI further agrees to waive, for that portion of their load designated to purchase power at the VI rate, all rights they might otherwise have to purchase power at the Industrial Firm Power Rate Schedule for the duration of the Variable Rate Contract. Sales under this schedule are made subject to BPA's GRSPs effective October 1, 1989, and as revised in subsequent wholesale rate filings.

Section II. Term of the Rate

This rate schedule shall take effect on July 1, 1993, and shall terminate at midnight June 30, 1996.

Section III. Rate

A. Base Rate Charges Subject to Rate Case Adjustments

The following base rates shall be adjusted on Rate Adjustment Dates beginning October 1, 1991, following the procedures set forth in section VI.C. of this rate schedule, unless the Cost Recovery Adjustment Clause triggers, at which point the rates shall be adjusted following the procedures set forth in section VI.I. of this rate schedule. In addition, the Lower Rate Limit also will be subject to a biennial adjustment pursuant to section VI.B. of this rate schedule. The formula to be used in the calculation of the monthly power bill is contained in section IV. A separate billing adjustment for the value of the reserves provided by purchasers of Industrial Firm Power is not contained in this rate schedule; the value of reserves credit has been included in the determination of the Plateau Energy Charge. On July 1, 1993, the base rates, as adjusted, shall be applied to purchases by DSI customers under the Variable Rate Contract. These rates shall continue to be adjusted, as described, through June 30, 1996.

1. Base Variable Industrial Rate

a. Demand Charge

\$5.33 per kilowatt of billing demand occurring during the Peak Period. No demand charge is applied during Offpeak Period hours.

b. Plateau Energy Charge

16.1 mills per kilowatthour of billing energy.

2. First Quartile Service Discount

0.5 mills per kilowatthour of billing energy.

3. Lower Rate Limit

10.3 mills per kilowatthour of billing energy.

4. Upper Rate Limit

21.9 mills per kilowatthour of billing energy.

B. Base Rate Parameters Subject to Annual Adjustments

The following base rate parameters will be adjusted annually starting on July 1, 1991, and every July 1 thereafter, in accordance with the procedures contained in section VII.B. of the GRSPs. On July 1, 1993, the base rate parameters, as adjusted, shall be used in determining power bills for DSI customers purchasing power under the Variable Rate Contracts. These parameters shall continue to be adjusted as described through June 30, 1996.

1. Lower Pivot Aluminum Price

68.5 cents per pound.

2. Upper Pivot Aluminum Price

79.6 cents per pound.

Section IV. Formula

The Variable Industrial Power rate is a formula rate tied to the U.S. market price of aluminum. Under this rate schedule, the monthly energy charge varies in response to changes in the average price of aluminum in U.S. markets.

A. Demand Charge

1. The Demand Charge, as stated in section III.A.1.a. of this rate schedule, remains constant over all aluminum prices. The demand charge is applied to billing demand occurring during all Peak Period hours for all billing months.

2. No demand charge during Offpeak Period hours.

B. Energy Charge

1. Plateau Energy Charge

When the monthly billing aluminum price (described in section VII.A. of the GRSPs) is between the Lower Pivot Aluminum Price and the

Upper Pivot Aluminum Price inclusive (as stated in sections III.B.1. and III.B.2. of this rate schedule), the monthly energy charge shall be the Plateau Energy Charge as stated in section III.A.1.b. of this rate schedule.

2. Reductions to Plateau Energy Charge

When the monthly billing aluminum price is less than the Lower Pivot Aluminum Price, the monthly energy charge shall be the greater of:

- a. The Plateau Energy Charge - $(LP - MAP) * (LS)$

where:

LP = the Lower Pivot Aluminum Price as stated in section III.B.1. of this rate schedule.

MAP = the monthly billing aluminum price in cents per pound determined pursuant to section VII.A. of the GRSPs

LS = lower slope = $\frac{1 \text{ mill per kilowatthour}}{1 \text{ cent per pound}}$

or

- b. the Lower Rate Limit as stated in section III.A.3. of this rate schedule.

3. Increases to Plateau Energy Charge

When the monthly billing aluminum price is greater than the Upper Pivot Aluminum Price, the monthly energy charge shall be the lesser of:

- a. The Plateau Energy Charge + $(MAP - UP) * (US)$

where:

MAP = the monthly billing aluminum price in cents per pound, as determined according to section VII.A. of the GRSPs.

UP = the Upper Pivot Aluminum Price as stated in section III.B.2. of this rate schedule.

US = upper slope = $\frac{0.75 \text{ mills per kilowatthour}}{1 \text{ cent per pound}}$

or

- b. the Upper Rate Limit, as stated in section III.A.4. of this rate schedule.

Section V. Billing Factors

A. Billing Demand

1. Billing Demand for Customers Whose Entire BPA Load is Served at the VI Rate

The billing demand for power purchased shall be the BPA Operating Level during the Peak Period as adjusted for power factor. If there is more than one BPA Operating Level during the Peak Period within a billing month, the billing demand shall be a weighted average of the BPA Operating Levels during the Peak Period for the billing month. The BPA Operating Level is defined in section III.A.10. of the GRSPs.

2. Billing Demand for Customers When Only a Portion of Their Total BPA Load is Served at the VI Rate

The Billing Demand shall be the portion of the BPA Operating Level attributable to the VI rate as determined by the method specified in the Variable Rate Contract.

3. Billing Demand During Periods of Transitional Service

If BPA has agreed, pursuant to section 4 of the DSI power sales contract, to sell Industrial Firm Power on a daily demand basis (transitional service), sections V.A.1. and V.A.2. of the rate schedule shall not apply, and BPA shall bill the purchaser in accordance with the provisions of section V.C. of the GRSPs.

B. Billing Energy

The billing energy for power purchased shall be the Measured Energy for the billing month, minus any kilowatthours on which BPA assesses the charge for unauthorized increase.

Section VI. Other Adjustments and Special Provisions

A. Lower and Upper Pivot Aluminum Prices

Effective July 1, 1991, and every July 1 thereafter, the Lower and Upper Pivot Aluminum Prices set forth in section III.B. of the rate schedule shall be adjusted following the procedures set forth in section VII.B. of the GRSPs. The adjusted Lower and Upper Pivot Aluminum Prices shall supersede the Lower and Upper Pivot Aluminum Prices contained in section III.B. of the rate schedule. The revised Lower and Upper Pivot Aluminum Prices shall be used for billing purposes and subsequent adjustments to the Lower and Upper Pivot Aluminum Prices.

B. Lower Rate Limit

On July 1, 1992, and July 1, 1994, the Lower Rate Limit as stated in section III.A.3. shall be increased by 1 mill per kilowatthour. The revised Lower Rate Limit shall supersede the Lower Rate Limit as stated in section III.A.3. of the rate schedule. This increase is in addition to rate

adjustment increases in the Lower Rate Limit described in section VI.C. of this rate schedule. In the event that a rate adjustment date and the annual adjustment date occur simultaneously, the Lower Rate Limit shall be adjusted first for changes in the Plateau Energy Charge pursuant to section VI.C. of this rate schedule, and then increased by 1 mill per kilowatthour. The revised Lower Rate Limit shall be used for billing purposes and subsequent rate adjustments.

C. Rate Adjustments

The overall rate level of this rate shall be subject to adjustment in BPA's general wholesale power rate case following the procedures and directives of the Northwest Power Act. The overall rate level consists of the Demand Charge, Plateau Energy Charge, and First Quartile Service Adjustment contained in sections III.A.1. and III.A.2.; these shall be adjusted by a uniform percentage based on the percentage change in the overall rate level. The Lower and Upper Rate Limits as stated in sections III.A.3. and III.A.4. of this rate schedule shall be adjusted by an amount equal to the change, in mills per kilowatthour, in the Plateau Energy Charge. The Lower and Upper Pivot Aluminum Prices shall not be adjusted in the rate case; rather, they shall be adjusted pursuant to the procedures described in section VII.B. of the GRSPs. The lower and upper slopes shall not be adjusted. The rate for unauthorized increase shall be separately determined in each rate case.

D. Discount for Quality of First Quartile Service

If a purchaser requests First Quartile service with other than Surplus Firm Energy Load Carrying Capability, a discount contained in section III.A.2. of this rate schedule shall be granted. This billing credit shall be applied to the monthly billing energy under section V.B. for all power purchased under this rate schedule. No credit shall be applied to those purchases subject to unauthorized increase charges under section VI.F. of this rate schedule. To qualify for the First Quartile Discount, the purchaser must request discounted rate service in writing by April 2 of each calendar year. By virtue of making such request, the Purchaser is agreeing to accept the level and quality of First Quartile service described in section 6 of the Variable Rate Contract. Such acceptance includes the waiver of contract rights provided in section 6.a(2)(a) of said contract.

E. Curtailments

BPA shall charge the customer for curtailments of the lower three quartiles in accordance with the provisions of section 9 of the power sales contract and the provisions contained in the Variable Rate Contract.

F. Unauthorized Increase

1. Rate for Unauthorized Increase

67.3 mills per kilowatthour.

2. Application of the Charge

During any billing month, BPA may assess the unauthorized increase charge on the number of kilowatthours associated with the DSI Measured Demand in any one 60-minute clock-hour, before adjustment for power factor, that exceed the BPA Operating Level for that clock-hour, regardless of whether such Measured Demand occurs during the Peak or Offpeak Period.

G. Power Factor Adjustment

The adjustment for power factor, when specified in this rate schedule or in the power sales contract, shall be made in accordance with the provisions of both this section and section III.C.1. of the GRSPs. The adjustment shall be made if the average leading power factor or average lagging power factor at which energy is supplied during the billing month is less than 95 percent.

To make the power factor adjustment, BPA shall increase the BPA Operating Level by 1 percentage point for each percentage point or major fraction thereof (0.5 or greater) by which the average leading power factor or average lagging power factor is below 95 percent. BPA may elect to waive the adjustment for power factor in whole or in part.

H. Outage Credit

Pursuant to section 7 of the General Contract Provisions, BPA shall provide an outage credit to any DSI to whom BPA is unable to deliver the full billing demand during that billing month due to an outage on the facilities used by BPA to deliver Industrial Firm Power. Such credit shall not be provided if BPA is able to serve the DSI's load through the use of alternative facilities or if the outage is for less than 30 minutes. The amount of the credit shall be calculated according to the provisions of section III.C.2. of the GRSPs.

I. Cost Recovery Adjustment Clause

The Cost Recovery Adjustment Clause described in the GRSPs in effect July 1, 1993, to June 30, 1996, shall be applied to all power purchases under this rate schedule consistent with the procedures to adjust the VI rate and the provisions of the Variable Rate Contract.

Section VII. Resource Cost Contribution

BPA has made the following determinations:

A. The approximate cost contribution of different resource categories to the VI-91 rate is 99.3 percent Exchange and 0.7 percent New Resources.

B. The forecasted average cost of resources available to BPA under average water conditions is 17.7 mills per kilowatthour.

C. The forecasted cost of resources to meet load growth is 28.7 mills per kilowatthour.

Proposed GRSPs Associated with the VI Rate Schedule

Section VII. Variable Industrial Rate Parameters and Adjustments

A. Monthly Average Aluminum Price Determination

1. Calculation of the Monthly Billing Aluminum Price

The monthly billing aluminum price shall be determined by BPA for each billing month. For purposes of this rate schedule, the monthly billing aluminum price shall be based on the average price of aluminum in U.S. markets during the third calendar month prior to the billing month. The average price of aluminum in U.S. markets shall be defined as the average U.S. Transaction Price reported for the month by "Metals Week," in cents per pound, rounded to the nearest tenth of a cent.

2. Notification of the Monthly Average Aluminum Price

BPA shall provide, 45 days prior to the billing month, written notification to purchasers under this rate schedule of the monthly billing aluminum price to be used for billing purposes. Upon written request supporting documentation shall be provided.

3. Changes in Aluminum Price Indicators

In the event that BPA determines that factors outside its control render the monthly average U.S. Transaction Price unusable as an approximation of U.S. market prices, BPA may develop and substitute another indicator for prices in U.S. markets. BPA shall notify interested parties of its intent to do so at least 120 days prior to the billing month in which the change would become effective. In this notification, BPA shall explain the reason for the substitution and specify the replacement indicator it intends to use. BPA also shall describe the methodology to determine the monthly billing aluminum price to be used for billing purposes under this rate schedule and shall provide the necessary data to be used in the calculation. Interested persons will have until close of business 3 weeks from the date of the notification to provide comments. Consideration of comments and more current information may cause the final methodology and the substitute aluminum price index to differ from those proposed. BPA shall notify all affected parties, and those parties that submitted comments, of its final determination 90 days prior to the billing month the new indicator shall be effective.

B. Annual Adjustments to the Lower and Upper Pivot Aluminum Prices

On July 1, 1991, and every July 1 thereafter, the Lower and Upper Pivot Aluminum Prices, as stated in section III.B of the rate schedule, shall be subject to change for billing purposes as herein described. The term "annual adjustment date" shall refer to July 1 of each year.

1. Implementation Procedures

Beginning in 1991 and every year thereafter, prior to April 1 of that year, BPA shall provide the purchasers under this rate

schedule preliminary written estimates of proposed adjustments to the Lower and Upper Pivot Aluminum Prices. By the last working day of the month of April, BPA shall notify interested parties in writing of BPA's revised determination concerning changes to the Lower and Upper Pivot Aluminum Prices. BPA shall describe how the adjustments were determined and provide the data used in the calculations. In addition to written notification, BPA may, but is not obligated to, hold a public comment forum to clarify its determination and solicit comments. Interested persons may submit comments on the determination to BPA and other parties. Comments will be accepted until close of business on the last working Friday in May. Consideration of comments and more current information may result in the final adjustment differing from the proposed adjustment. By June 30 of each year, BPA shall notify all VI purchasers, those parties that submitted comments, and parties that requested notification, of the final determination.

2. Annual Adjustment Procedures

a. Annual Adjustment of the Lower Pivot Aluminum Price

Beginning with the July 1, 1991, annual adjustment date, for each year that the VI rate is in effect, the Lower Pivot Aluminum Price as stated in section III.B.1. of the rate schedule shall be adjusted on the July 1 annual adjustment date. The Lower Pivot Aluminum Price shall be revised by multiplying 59 cents per pound by the Cost Escalation Index described in section VII.B.3.b of these GRSPs and rounded to the nearest tenth of a cent. The revised Lower Pivot Aluminum Price shall replace the Lower Pivot Aluminum Price as stated in section III.B.1 of the rate schedule and shall be used to determine the energy rate in the subsequent 12 billing months.

b. Annual Adjustment of the Upper Pivot Aluminum Price

For each year that the Variable Industrial rate is in effect, the Upper Pivot Aluminum Price as stated in section III.B.2 of the rate schedule shall be adjusted on the July 1 annual adjustment date. The Upper Pivot Aluminum Price will be adjusted such that the Average Historical Aluminum Price described in section VII.B.4 of these GRSPs is the midpoint between the adjusted Upper Pivot Aluminum Price and the Average Historical Lower Pivot Aluminum Price described in section VII.B.5 below, except as limited to the greater of 65 cents per pound or the adjusted Lower Pivot Point for the year.

The Upper Pivot Aluminum Price shall equal the greater of:

$$(1) \quad (2) * (AAP) - ALP:$$

where

AAP = the Average Historical Aluminum Price described in section VII.B.4 of these GRSPs.

ALP = the Average Historical Lower Pivot Aluminum Price described in section VII.B.5 of these GRSPs.

(2) 65.0 cents per pound escalated to current dollars using the Cost Escalator for the Upper Pivot Aluminum Price described in section VII.B.3.c of these GRSPs.

or

(3) The adjusted Lower Pivot Aluminum Price for the year.

The revised Upper Pivot Aluminum Price shall supersede the Upper Pivot Aluminum Price as stated in section III.B.2 of the rate schedule and shall be used to determine the energy rate in the subsequent 12 months.

3. Cost Escalators

a. The cost indices described below shall be used in calculating the appropriate cost escalators. Each index shall be rounded to the nearest one-tenth of a percent, or three significant places.

(1) Electricity Cost Index

The average VI rate in mills per kilowatthour based on the Plateau Energy Charge and the Discount for Quality of First Quartile Service in effect on the April 1 preceding the annual adjustment date and a load factor of 98.5 percent; divided by 22.8 mills per kilowatthour (the average VI-86 rate assuming the plateau energy charge and the Discount for Quality of First Quartile Service in 1986).

(2) Labor Cost Index

The annual average hourly earnings for the U.S. primary aluminum industry (SIC 3334) over the previous complete calendar year, from the Employment and Earnings, published by the U.S. Department of Labor, Bureau of Labor Statistics (BLS), divided by \$14.20 per hour (the value of SIC 3334 earnings reported for 1985).

(3) Alumina Cost Index

The annual average of the monthly billing aluminum prices described in section VII.A of the GRSPs for the previous 1-year period beginning July 1 through June 30 divided by 50.8 cents per pound (the average U.S. Transaction price over the period April 1985 through March 1986).

(4) Other Costs Index

The annual average GNP Implicit Price Deflator for the previous complete calendar year, as published by the U.S. Department

of Commerce, Bureau of Economic Analysis, divided by 1.109 (the value of the GNP Implicit Price Deflator for 1985 with 1982 = 1.000)

In the event the indices delineated above are discontinued or revised in a manner that BPA determines renders them unusable for calculating a consistent cost index, BPA will adjust or substitute another similar price index, following advance notification and opportunity for public comment as described in section VII.B.1 of these GRSPs.

b. The Cost Escalator for the Lower Pivot Aluminum Price shall be a weighted average of the four indices contained in section VII.B.3.a above. The following weights shall be assigned each index:

Electricity Cost Index	.30
Labor Cost Index	.20
Alumina Cost Index	.20
Other Costs Index	.30

c. The Cost Escalator for the Upper Pivot Aluminum Price shall be a weighted average of the Electricity Cost and Other Cost Escalators as stated in sections VII.B.3.a.(1) and VII.B.3.a.(4) above. The following weights shall be assigned each index:

Electricity Cost Index	.25
Other Costs Index	.75

4. Average Historical Aluminum Price

Prior to the July 1, 1991, annual adjustment date and every annual adjustment date thereafter, an average historical aluminum price shall be calculated for the period the VI rate has been in effect beginning August 1986. The average historical aluminum price shall be determined following the procedures set forth below:

a. Each monthly billing aluminum price determined pursuant to section VII.A of these GRSPs for the period August 1, 1986, through June 30 immediately preceding the annual adjustment date, shall be escalated to the current year dollars using the Price Deflator procedures described in section VII.B.6 below.

b. The sum of the escalated monthly billing aluminum prices shall be divided by the number of months in the period and rounded to the nearest tenth of a cent to obtain the Average Historical Aluminum Price.

5. Average Historical Lower Pivot Aluminum Price

Prior to the July 1, 1991, annual adjustment date and every annual adjustment date thereafter, the average of the Lower Pivot

Aluminum Prices for the period the VI rate has been in effect beginning August 1986 shall be calculated following the procedures set forth below:

a. The Lower Pivot Aluminum Price in each month for the period August 1, 1986, through June 30 of the calendar year preceding the annual adjustment date, shall be escalated to the current year's dollars using the Price Deflator procedures described in section VII.B.6 below.

b. The sum of the escalated monthly Lower Pivot Aluminum Prices shall be divided by the number of months in the period, and rounded to the nearest tenth of a cent to obtain an Average Historical Lower Pivot Aluminum Price.

6. Price Deflator Procedures

For purposes of converting nominal dollars to real dollars in the calculation of the Average Historical Aluminum Price and the Average Historical Lower Pivot Aluminum Price, the following Price Deflator procedures shall be used:

a. Monthly billing aluminum prices and Lower Pivot Aluminum Prices for any calendar months July through December shall be inflated by multiplying the price by the ratio of the GNP Implicit Price Deflator for the calendar year prior to the annual adjustment date divided by the Implicit Price Deflator for the calendar year in which the price occurred.

b. Monthly billing aluminum prices and Lower Pivot Aluminum Prices for any calendar months January through June shall be inflated by multiplying the price by the ratio of the Implicit Price Deflator for the calendar year prior to the annual adjustment date divided by the Implicit Price Deflator for the calendar year prior to the year in which the price occurred. Each price shall be rounded to the nearest tenth of a cent.