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PACIFIC GAS AND ELECTRIC COMPANY

~~STANDARD OFFER #4~~

POWER PURCHASE AGREEMENT
FOR
LONG-TERM ENERGY AND CAPACITY

DECEMBER 1983

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STANDARD OFFER #4:
LONG-TERM ENERGY AND CAPACITY
POWER PURCHASE AGREEMENT

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1 LONG-TERM ENERGY AND CAPACITY

2 POWER PURCHASE AGREEMENT

3 BETWEEN

4 U.S. WINDPOWER, INC.

5 AND

6 PACIFIC GAS AND ELECTRIC COMPANY

7
8
9
10 U.S. WINDPOWER, INC. ("Seller"), and PACIFIC GAS AND
11 ~~ELECTRIC COMPANY ("PGandE"), referred to collectively as~~
12 "Parties" and individually as "Party", agree as follows:
13

14 ARTICLE 1 QUALIFYING STATUS

15
16 Seller warrants that, at the date of first power
17 deliveries from Seller's Windplant(s)¹ and during the term
18 of agreement, its Windplant(s) shall meet the qualifying
19 facility requirements established as of the effective date
20 of this Agreement by the Federal Energy Regulatory
21 Commission's rules (18 Code of Federal Regulations 292)
22 implementing the Public Utility Regulatory Policies Act of
23 1978 (16 U.S.C.A. 796, et seq.).
24

25
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27
28 ¹ Underlining identifies those terms which are defined in Section A-1
of Appendix A.

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ARTICLE 2 COMMITMENT OF PARTIES

The prices to be paid Seller for energy and/or capacity delivered pursuant to this Agreement have wholly or partly been fixed at the time of execution. Actual avoided costs at the time of energy and/or capacity deliveries may be substantially above or below the prices fixed in this Agreement. Therefore, the Parties expressly commit to the prices fixed in this Agreement for the applicable period of performance and shall not seek to or have a right to ~~renegotiate such prices for any reason. As part of its~~ consideration for the benefit of fixing part or all of the energy and/or capacity prices under this Agreement, Seller waives any and all rights to judicial or other relief from its obligations and/or prices set forth in Appendices B, D, and E, or modification of any other term or provision thereof for any reasons whatsoever.

This Agreement contains certain provisions which set forth methods of calculating damages to be paid to PGandE in the event Seller fails to fulfill certain performance obligations. The inclusion of such provisions is not intended to create any express or implied right in Seller to terminate this Agreement prior to the expiration of the term of agreement. Termination of this Agreement by Seller prior to its expiration date shall constitute a breach of this Agreement and the damages expressly set forth in this

1 Agreement shall not constitute PGandE's sole remedy for such
2 breach.

3
4 ARTICLE 3 PURCHASE OF POWER

5
6 (a) Seller shall sell and deliver and PGandE shall
7 purchase and accept delivery of capacity and energy at the
8 voltage level of _____¹ kV.

9
10 (b) Seller shall provide capacity and energy from its
11 70,000 kW Facility located at _____
12 _____¹.

13
14 (c) The scheduled operation date of the Facility is
15 January 1, 1988. At the end of each calendar quarter Seller
16 shall give written notice to PGandE of any change in the
17 scheduled operation date.

18
19 (d) To avoid exceeding the physical limitations of the
20 interconnection facilities, Seller shall limit the
21 Facility's actual rate of delivery into the PGandE system to
22 _____¹ kW.

23
24 _____

25 ¹ To be amended when the Parties enter into a Special Facilities
26 Agreement. Seller shall notify PGandE in writing as to the special
27 facilities location(s) at least one year prior to the scheduled
28 operation date of each Windplant. Failure by Seller to so notify
PGandE shall release PGandE from any obligation to supply special
facilities within any period less than one year from the date of
said notification.

1 (e) The primary energy source for the Facility is wind
2 energy.

3
4 (f) If Seller does not begin construction of its
5 Windplant(s) by _____¹, PGandE may reallocate
6 [Date(s)]
7 the existing capacity on PGandE's transmission and/or
8 distribution system which would have been used to
9 accommodate Seller's power deliveries to other uses. In the
10 event of such reallocation, Seller shall pay PGandE for the
11 cost of any upgrades or additions to PGandE's system
12 necessary to accommodate the output from the Windplant(s).

13 Such additional facilities shall be installed, owned and
14 maintained in accordance with the applicable PGandE tariff.

15 ARTICLE 4 ENERGY PRICE

16
17 PGandE shall pay Seller for its net energy output under
18 the energy payment option checked below:

19
20 _____ Energy Payment Option 1 - Forecasted Energy Prices

21
22 During the fixed price period, Seller shall be
23 paid for energy delivered at prices equal to _____
24 percent of the prices set forth in Table B-1, Appen-
25 dix B, plus _____ percent of PGandE's full short-run
26 avoided operating costs.

27
28
1 See page 5 footnote.

1 . For the remaining years of the term of agreement,
2 Seller shall be paid for energy delivered at prices
3 equal to PGandE's full short-run avoided operating
4 costs.

5
6 If Seller's Facility is not an oil or gas-fired
7 cogeneration facility, Seller may convert from Energy
8 Payment Option 1 to Energy Payment Option 2 and be
9 subject to the conditions therein, provided that Seller
10 shall not change the percentage of energy prices to be
11 based on PGandE's full short-run avoided operating
12 costs. Such conversion must be made at least 90 days
13 prior to the date of initial energy deliveries and must
14 be made by written notice in accordance with
15 Section A-17, Appendix A.

16
17 X Energy Payment Option 2 - Levelized Energy Prices

18
19 During the fixed price period, Seller shall be
20 paid for energy delivered at prices equal to
21 100 percent of the levelized energy prices set forth
22 in Table B-2, Appendix B for the year 1988 or the year
23 in which energy deliveries begin for the last wind
24 turbine installed for a Windplant, whichever is
25 earlier, and term of agreement. Seller shall notify
26 PGandE when the last wind turbine for a Windplant
27 begins energy deliveries. During the fixed price
28

1 period, Seller shall be subject to the conditions and
2 terms set forth in Appendix B, Energy Payment Option 2.

3
4 For the remaining years of the term of agreement,
5 Seller shall be paid for energy delivered at prices
6 equal to PGandE's full short-run avoided operating
7 costs.

8
9 Seller may convert from Energy Payment Option 2 to
10 Energy Payment Option 1, provided that Seller shall not
11 ~~change the percentage of energy prices to be based on~~
12 PGandE's full short-run avoided operating costs. Such
13 conversion must be made at least 90 days prior to the
14 date of initial energy deliveries and must be made by
15 written notice in accordance with Section A-17,
16 Appendix A.

17
18 _____ Energy Payment Option 3 - Incremental Energy Rate

19
20 Beginning with the date of initial energy
21 deliveries and continuing until _____¹, Seller
22 shall be paid monthly for energy delivered at prices
23 equal to PGandE's full short-run avoided operating
24 costs, provided that adjustments shall be made annually
25 to the extent set forth in Appendix B, Energy Payment
26 Option 3.

27
28 _____
¹ Specified by Seller. Must be December 31, 1998 or prior.

1 The Incremental Energy Rate Band Widths specified
2 by Seller in Table I below shall be used in determining
3 the annual adjustment, if any.

4
5 Table I

<u>Year</u>	<u>Incremental Energy Rate Band Widths</u> (must be multiples of 100 or zero)
1984	_____
1985	_____
1986	_____
1987	_____
1988	_____
1989	_____
1990	_____
1991	_____
1992	_____
1993	_____
1994	_____
1995	_____
1996	_____
1997	_____
1998	_____

15
16
17 After _____, Seller shall be paid for
18 energy delivered at prices equal to PGandE's full
19 short-run avoided operating costs.

20
21 **ARTICLE 5 CAPACITY ELECTION AND CAPACITY PRICE**

22
23 Seller may elect to deliver either firm capacity or
24 as-delivered capacity, and Seller's election is indicated
25 below. PGandE's prices for firm capacity and as-delivered
26 capacity are derived from PGandE's full avoided costs as
27 approved by the CPUC.

1 _____ Firm capacity - _____ kW for _____ years from the
2 firm capacity availability date with payment determined
3 in accordance with Appendix E. Seller elects to have
4 its firm capacity price determined from the firm
5 capacity price schedule in effect on _____¹.
6 Except for hydroelectric facilities, PGandE shall pay
7 Seller for capacity delivered in excess of firm
8 capacity on an as-delivered capacity basis in
9 accordance with As-Delivered Capacity Payment Option
10 _____ set forth in Appendix D.

11
12 OR

13
14 X As-delivered capacity with payment determined in
15 accordance with As-Delivered Capacity Payment Option 2
16 set forth in Appendix D.

17
18 ARTICLE 6 LOSS ADJUSTMENT FACTORS

19
20 Capacity Loss Adjustment Factors shall be as shown in
21 Appendix D and Appendix E, dependent upon Seller's capacity
22 election set forth in Article 5 of this Agreement.

23
24 Energy Loss Adjustment Factors shall be considered as
25 unity for all energy payments related to Energy Payment
26 Options 1 and 2 set forth in Appendix B for the entire fixed
27 _____

28 ¹ Insert either "date of execution of this Agreement" or "the firm capacity availability date".

1 price period of this Agreement, except for the percentage of
2 payments that Seller elected in Article 4 to have calculated
3 based on PGandE's full short-run avoided operating costs.
4 Energy Loss Adjustment Factors for all payments related to
5 PGandE's full short-run avoided operating costs are subject
6 to CPUC rulings for the entire term of agreement.

7
8 ARTICLE 7 CURTAILMENT

9
10 Seller has two options regarding possible curtailment
11 by PGandE of Seller's deliveries, and Seller's selection is
12 indicated below:

- 13 _____ Curtailment Option A - Hydro Spill and Negative Avoided
14 Cost
15 X Curtailment Option B - Adjusted Price Period

16
17 The two options are described in Appendix C.
18

19 ARTICLE 8 RETROACTIVE APPLICATION OF CPUC ORDERS

20
21 Pursuant to Ordering Paragraph 1(f) of CPUC Decision
22 No. 83-09-054 (September 7, 1983), after the effective date
23 of the CPUC's Application 82-03-26 decision relating to line
24 loss factors, Seller has the option to retain the relevant
25 terms of this Agreement or have the results of that decision
26 incorporated into this Agreement. To retain the terms
27 herein, Seller shall provide written notice to PGandE within
28 30 days after the effective date of the relevant CPUC

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decision on Application 82-03-26. Failure to provide such notice will result in the amendment of this Agreement to comply with that decision.

As soon as practicable following the issuance of a decision in Application 82-03-26, PGandE shall notify Seller of the effective date thereof and its results.

ARTICLE 9 NOTICES

All written notices shall be directed as follows:

To PGandE: Pacific Gas and Electric Company
Attention: Vice President -
Electric Operations
77 Beale Street
San Francisco, CA 94106

To Seller: U.S. Windpower, Inc.
Attention: President
500 Sansome St., Suite 205
San Francisco, CA 94111

ARTICLE 10 DESIGNATED SWITCHING CENTER

The designated PGandE switching center shall be, unless changed by PGandE¹:

(Name)

(Location)

(Phone number)

¹ See page 5 footnote.

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ARTICLE 11 TERMS AND CONDITIONS

This Agreement includes the following appendices which are attached and incorporated by reference:

- Appendix A - GENERAL TERMS AND CONDITIONS
- Appendix B - ENERGY PAYMENT OPTIONS
- Appendix C - CURTAILMENT OPTIONS
- Appendix D - AS-DELIVERED CAPACITY
- Appendix E - FIRM CAPACITY
- Appendix F - INTERCONNECTION

ARTICLE 12 TERM OF AGREEMENT

This Agreement shall be binding upon execution and remain in effect thereafter for twenty-eight (28) years¹ from January 1, 1988; provided, however, that it shall terminate if energy deliveries do not start within five years of the execution date.

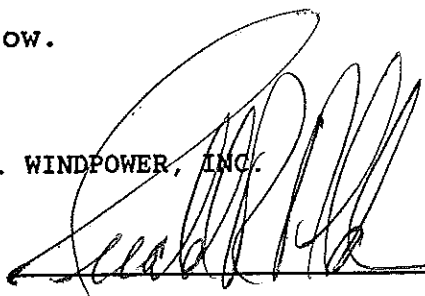
¹ The minimum contract term is 15 years and the maximum contract term is 30 years.

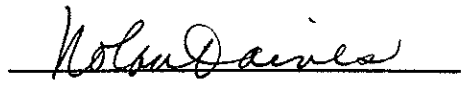
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IN WITNESS WHEREOF, the Parties hereto have caused this Agreement to be executed by their duly authorized representatives and it is effective as of the last date set forth below.

U.S. WINDPOWER, INC.

PACIFIC GAS AND ELECTRIC COMPANY

BY: 

BY: 

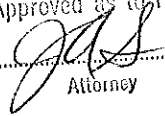
Gerald R. Alderson
President

Nolan H. Daines
Vice President -
Planning and Research

DATE SIGNED: March 5, 1984

DATE SIGNED: MAR 2, 1984

Approved as to Form


Attorney

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APPENDIX A
GENERAL TERMS AND CONDITIONS

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APPENDIX A
GENERAL TERMS AND CONDITIONS

A-1 DEFINITIONS

Whenever used in this Agreement, appendices, and attachments hereto, the following terms shall have the following meanings:

Adjusted firm capacity price - The \$/kW-year purchase price for firm capacity from Table E-2, Appendix E for the period of Seller's actual performance.

As-delivered capacity - Capacity delivered to PGandE in excess of firm capacity or in lieu of a firm capacity commitment.

CPUC - The Public Utilities Commission of the State of California.

Current firm capacity price - The \$/kW-year capacity price from PGandE's firm capacity price schedule effective at the time PGandE derates the firm capacity pursuant to Section E-4(b), Appendix E or Seller terminates performance under this Agreement, for a term equal to the period from

1 the date of deration or termination to the end of the term
2 of agreement.

3
4 Designated PGandE switching center - That switching
5 center or other PGandE installation identified in
6 Article 10.

7
8 Facility - That generation apparatus described in
9 Article 3 and all associated equipment owned, maintained,
10 and operated by Seller.

11
12 Firm capacity - That capacity, if any, identified as
13 firm in Article 5 except as otherwise changed as provided
14 herein.

15
16 Firm capacity availability date - The day following
17 the day during which all features and equipment of the
18 Facility are demonstrated to PGandE's satisfaction to be
19 capable of operating simultaneously to deliver firm capacity
20 continuously into PGandE's system as provided in this
21 Agreement.

22
23 Firm capacity price - The price for firm capacity
24 applicable for the firm capacity availability date and the
25 number of years of firm capacity delivery from the firm
26 capacity price schedule, Table E-2, Appendix E.

1 Firm capacity price schedule - The periodically
2 published schedule of the \$/kW-year prices that PGandE
3 offers to pay for firm capacity. See Table E-2, Appendix E.
4

5 Fixed price period - The period during which
6 forecasted or levelized energy prices, and/or forecasted
7 as-delivered capacity prices, are in effect; defined as the
8 first five years of the term of agreement if the term of
9 agreement is 15 or 16 years; the first six years of the term
10 of agreement if the term of agreement is 17, 18, or 19
11 years; or the first ten years of the term of agreement if
12 the term of agreement is anywhere from 20 through 30 years.
13

14 Forced outage - Any outage resulting from a design
15 defect, inadequate construction, operator error or a
16 breakdown of the mechanical or electrical equipment that
17 fully or partially curtails the electrical output of the
18 Facility.
19

20 Full short-run avoided operating costs -
21 CPUC-approved costs which are the basis of PGandE's
22 published energy prices. PGandE's current energy price
23 calculation is shown in Table B-5, Appendix B. PGandE's
24 published off-peak hours' prices shall be adjusted, as
25 appropriate, if Seller has selected Curtailment Option B.
26
27
28

1 Interconnection facilities - All means required and
2 apparatus installed to interconnect and deliver power from
3 the Windplant(s) to the PGandE system including, but not
4 limited to, connection, transformation, switching, metering,
5 communications, and safety equipment, such as equipment
6 required to protect (1) the PGandE system and its customers
7 from faults occurring at the Windplant(s), and (2) the
8 Windplant(s) from faults occurring on the PGandE system or
9 on the systems of others to which the PGandE system is
10 directly or indirectly connected. Interconnection
11 facilities also include any necessary additions and
12 reinforcements by PGandE to the PGandE system required as a
13 result of the interconnection of the Windplant(s) to the
14 PGandE system.

15
16 Net energy output - The Facility's gross output in
17 kilowatt-hours less station use and transformation and
18 transmission losses to the point of delivery into the PGandE
19 system. Where PGandE agrees that it is impractical to
20 connect the station use on the generator side of the power
21 purchase meter, PGandE may, at its option, apply a station
22 load adjustment.

23
24 Prudent electrical practices - Those practices,
25 methods, and equipment, as changed from time to time, that
26 are commonly used in prudent electrical engineering and
27 operations to design and operate electric equipment lawfully
28 and with safety, dependability, efficiency, and economy.

1 Scheduled operation date - The day specified in
2 Article 3(c) when the Facility is, by Seller's estimate,
3 expected to produce energy under this Agreement that will be
4 available for delivery to PGandE.

5
6 Special facilities - Those additions and
7 reinforcements to the PGandE system which are needed to
8 accommodate the maximum delivery of energy and capacity from
9 the Windplant(s) as provided in this Agreement and those
10 parts of the interconnection facilities which are owned and
11 maintained by PGandE at Seller's request, including metering
12 and data processing equipment. All special facilities shall
13 be owned, operated, and maintained pursuant to PGandE's
14 electric Rule No. 21, which is attached hereto.

15
16 Station use - Energy used to operate the Facility's
17 auxiliary equipment. The auxiliary equipment includes, but
18 is not limited to, forced and induced draft fans, cooling
19 towers, boiler feed pumps, lubricating oil systems, plant
20 lighting, fuel handling systems, control systems, and sump
21 pumps.

22
23 Surplus energy output - The Facility's gross output,
24 in kilowatt-hours, less station use, and any other use by
25 Seller, and transformation and transmission losses to the
26 point of delivery into the PGandE system.

1 Term of agreement - The number of years this
2 Agreement will remain in effect as provided in Article 12.

3
4 Voltage level - The voltage at which the Facility
5 interconnects with the PGandE system, measured at the point
6 of delivery.

7
8 Windplant - All of Seller's facilities and rights,
9 excluding interconnection facilities, owned by a single
10 legal entity and required to produce energy from a wind
11 generating facility consisting of a number of wind turbines
12 and associated equipment having, unless otherwise agreed to
13 by the Parties, a total nameplate rating of 10,000 kW or
14 more. Windplants shall not exceed four (4) in number.

15
16 A-2 CONSTRUCTION

17
18 A-2.1 Land Rights

19
20 Seller hereby grants to PGandE all necessary rights
21 of way and easements, including adequate and continuing
22 access rights on property of Seller, to install, operate,
23 maintain, replace, and remove the special facilities.
24 Seller agrees to execute such other grants, deeds, or
25 documents as PGandE may require to enable it to record such
26 rights of way and easements. If any part of PGandE's
27 equipment is to be installed on property owned by other than
28 Seller, Seller shall, at its own cost and expense, obtain

1 from the owners thereof all necessary rights of way and
2 easements, in a form satisfactory to PGandE, for the
3 construction, operation, maintenance, and replacement of
4 PGandE's equipment upon such property. If Seller is unable
5 to obtain such rights of way and easements, Seller shall
6 reimburse PGandE for all costs incurred by PGandE in
7 obtaining them. PGandE shall at all times have the right of
8 ingress to and egress from the Facility at all reasonable
9 hours for any purposes reasonably connected with this
10 Agreement or the exercise of any and all rights secured to
11 PGandE by law or its tariff schedules.

12
13 A-2.2 Design, Construction, Ownership, and Maintenance

14
15 (a) Seller shall design, construct, install, own,
16 operate, and maintain all interconnection facilities, except
17 special facilities, to the point(s) of interconnection with
18 the PGandE system as required for PGandE to receive capacity
19 and energy from the Windplant(s). The Windplant(s) and
20 interconnection facilities shall meet all requirements of
21 applicable codes and all standards of prudent electrical
22 practices and shall be maintained in a safe and prudent
23 manner. A description of the interconnection facilities for
24 which Seller is solely responsible is set forth in
25 Appendix F, or if the interconnection requirements have not
26 yet been determined at the time of the execution of this
27 Agreement, the description of such facilities will be
28

1 appended to this Agreement at the time such determination is
2 made.

3
4 (b) Seller shall submit to PGandE all specifications
5 for the interconnection facilities (except special
6 facilities) and, at PGandE's option, the Windplant(s), for
7 review and written acceptance prior to their release for
8 construction purposes. PGandE's review and acceptance of
9 these specifications shall not be construed as confirming or
10 endorsing the design or as warranting their safety,
11 ~~durability, or reliability.~~ PGandE shall not, by reason of
12 such review or lack of review, be responsible for strength,
13 details of design, adequacy, or capacity of equipment built
14 pursuant to such specifications, nor shall PGandE's
15 acceptance be deemed to be an endorsement of any of such
16 equipment. Seller shall change the interconnection
17 facilities as may be reasonably required by PGandE to meet
18 changing requirements of the PGandE system.

19
20 (c) In the event it is necessary for PGandE to
21 install interconnection facilities for the purposes of this
22 Agreement, they shall be installed as special facilities.

23
24 (d) Upon the request of Seller, PGandE shall provide
25 a binding estimate for the installation of interconnection
26 facilities by PGandE.

1 A-2.3 Meter Installation

2
3 (a) PGandE shall specify, provide, install, own,
4 operate, and maintain as special facilities metering and
5 data processing equipment for the registration and recording
6 of energy and other related parameters which are required
7 for the reporting of data to PGandE and for computing the
8 payment due Seller from PGandE.
9

10 (b) Seller shall provide, construct, install, own,
11 and maintain at Seller's expense all that is required to
12 accommodate the metering and data processing equipment, such
13 as, but not limited to, metal-clad switchgear, switchboards,
14 cubicles, metering panels, enclosures, conduits, rack
15 structures, and equipment mounting pads.
16

17 A-3 OPERATION

18
19 A-3.1 Inspection and Approval

20
21 Seller shall not operate the Windplant(s) in parallel
22 with PGandE's system until an authorized PGandE
23 representative has inspected the interconnection facilities,
24 and PGandE has given written approval to begin parallel
25 operation. Seller shall notify PGandE of the Windplant's
26 start-up date(s) at least 45 days prior to such date(s).
27 PGandE shall inspect the interconnection facilities within
28 30 days of the receipt of such notice. If parallel

1 operation is not authorized by PGandE, PGandE shall notify
2 Seller in writing within five days after inspection of the
3 reason authorization for parallel operation was withheld.
4

5 A-3.2 Windplant(s) Operation and Maintenance
6

7 Seller shall operate and maintain its Windplant(s)
8 according to prudent electrical practices, applicable laws,
9 orders, rules, and tariffs and shall provide such reactive
10 power support as may be reasonably required by PGandE to
11 maintain system voltage level and power factor. Seller
12 shall operate the Windplant(s) at the power factors or
13 voltage levels prescribed by PGandE's system dispatcher or
14 designated representative. If Seller fails to provide
15 reactive power support, PGandE may do so at Seller's
16 expense.
17

18 A-3.3 Point of Delivery
19

20 Seller shall deliver the energy at the point(s) where
21 Seller's electrical conductors (or those of Seller's agent)
22 contact PGandE's system as it shall exist whenever the
23 deliveries are being made or at such other point or points
24 as the Parties may agree in writing. The initial point(s)
25 of delivery of Seller's power to the PGandE system is set
26 forth in Appendix F.
27
28

1 A-3.4 Operating Communications

2
3 (a) Seller shall maintain operating communications
4 with the designated PGandE switching center. The operating
5 communications shall include, but not be limited to, system
6 paralleling or separation, scheduled and unscheduled
7 shutdowns, equipment clearances, levels of operating voltage
8 or power factors and daily capacity and generation reports.
9

10 (b) Seller shall keep a daily operations log for
11 ~~each generating unit which shall include information on unit~~
12 availability, maintenance outages, circuit breaker trip
13 operations requiring a manual reset, and any significant
14 events related to the operation of the Facility.
15

16 (c) If Seller makes deliveries greater than one
17 megawatt, Seller shall measure and register on a graphic
18 recording device power in kW and voltage in kV at a location
19 within the Windplant(s) agreed to by both Parties.
20

21 (d) If Seller makes deliveries greater than one and
22 up to and including ten megawatts, Seller shall report to
23 the designated PGandE switching center, twice a day at
24 agreed upon times for the current day's operation, the
25 hourly readings in kW of capacity delivered and the energy
26 in kWh delivered since the last report.
27
28

1 (e) If Seller makes deliveries of greater than ten
2 megawatts, Seller shall telemeter the delivered capacity and
3 energy information, including real power in kW, reactive
4 power in kVAR, and energy in kWh to a switching center
5 selected by PGandE. PGandE may also require Seller to
6 telemeter transmission kW, kVAR, and kV data depending on
7 the number of generators and transmission configuration.
8 Seller shall provide and maintain the data circuits required
9 for telemetering. When telemetering is inoperative, Seller
10 shall report daily the capacity delivered each hour and the
11 ~~energy delivered each day to the designated PGandE switching~~
12 center.

13
14 A-3.5 Meter Testing and Inspection

15
16 (a) PGandE's meters used to provide data for the
17 computation of the payments due Seller from PGandE shall be
18 sealed, and the seals shall be broken only by PGandE when
19 the meters are to be inspected, tested, or adjusted.

20
21 (b) PGandE shall inspect and test its meters upon
22 their installation and annually thereafter. At Seller's
23 request and expense, PGandE shall inspect or test a meter
24 more frequently. PGandE shall give reasonable notice to
25 Seller of the time when any inspection or test shall take
26 place, and Seller may have representatives present at the
27 test or inspection. If a meter is found to be inaccurate or
28

1 defective, PGandE shall adjust, repair, or replace it at its
2 expense in order to provide accurate metering.

3
4 A-3.6 Adjustments to Meter Measurements

5
6 If a meter fails to register, or if the measurement
7 made by a meter during a test varies by more than two
8 percent from the measurement made by the standard meter used
9 in the test, an adjustment shall be made correcting all
10 measurements made by the inaccurate meter for -- (1) the
11 ~~actual period during which inaccurate measurements were~~
12 made, if the period can be determined, or if not, (2) the
13 period immediately preceding the test of the meter equal to
14 one-half the time from the date of the last previous test of
15 the meter, provided that the period covered by the
16 correction shall not exceed six months.

17
18 A-4 PAYMENT

19
20 PGandE shall mail to Seller not later than 30 days
21 after the end of each monthly billing period (1) a statement
22 showing the energy and capacity delivered to PGandE during
23 on-peak, partial-peak, and off-peak periods during the
24 monthly billing period, (2) PGandE's computation of the
25 amount due Seller, and (3) PGandE's check in payment of said
26 amount. Except as provided in Section A-5, if within 30
27 days of receipt of the statement Seller does not make a
28 report in writing to PGandE of an error, Seller shall be

1 deemed to have waived any error in PGandE's statement,
2 computation, and payment, and they shall be considered
3 correct and complete.

4
5 A-5 ADJUSTMENTS OF PAYMENTS

6
7 (a) In the event adjustments to payments are
8 required as a result of inaccurate meters, PGandE shall use
9 the corrected measurements described in Section A-3.6 to
10 recompute the amount due from PGandE to Seller for the
11 ~~capacity and energy delivered under this Agreement during~~
12 the period of inaccuracy.

13
14 (b) The additional payment to Seller or refund to
15 PGandE shall be made within 30 days of notification of the
16 owing Party of the amount due.

17
18 A-6 ACCESS TO RECORDS AND PGandE DATA

19
20 Each Party, after giving reasonable written notice to
21 the other Party, shall have the right of access to all
22 metering and related records including operations logs of
23 the Facility. Data filed by PGandE with the CPUC pursuant
24 to CPUC orders governing the purchase of power from
25 qualifying facilities shall be provided to Seller upon
26 request; provided that Seller shall reimburse PGandE for the
27 costs it incurs to respond to such request.

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A-7 INTERRUPTION OF DELIVERIES

PGandE shall not be obligated to accept or pay for and may require Seller to interrupt or reduce deliveries of energy (1) when necessary in order to construct, install, maintain, repair, replace, remove, investigate, or inspect any of its equipment or any part of its system, or (2) if it determines that interruption or reduction is necessary because of PGandE system emergencies, forced outages, force majeure, or compliance with prudent electrical practices; provided that PGandE shall not interrupt deliveries pursuant to this section in order to take advantage, or make purchases, of less expensive energy elsewhere. Whenever possible, PGandE shall give Seller reasonable notice of the possibility that interruption or reduction of deliveries may be required.

A-8 FORCE MAJEURE

(a) The term force majeure as used herein means unforeseeable causes, other than forced outages, beyond the reasonable control of and without the fault or negligence of the Party claiming force majeure including, but not limited to, acts of God, labor disputes, sudden actions of the elements, actions by federal, state, and municipal agencies, and actions of legislative, judicial, or regulatory agencies which conflict with the terms of this Agreement.

1 (b) If either Party because of force majeure is
2 rendered wholly or partly unable to perform its obligations
3 under this Agreement, that Party shall be excused from
4 whatever performance is affected by the force majeure to the
5 extent so affected provided that:

6
7 (1) the non-performing Party, within two weeks
8 after the occurrence of the force majeure, gives the
9 other Party written notice describing the particulars
10 of the occurrence,

11 (2) the suspension of performance is of no
12 greater scope and of no longer duration than is
13 required by the force majeure,

14 (3) the non-performing Party uses its best
15 efforts to remedy its inability to perform (this
16 subsection shall not require the settlement of any
17 strike, walkout, lockout or other labor dispute on
18 terms which, in the sole judgment of the Party
19 involved in the dispute, are contrary to its
20 interest. It is understood and agreed that the
21 settlement of strikes, walkouts, lockouts or other
22 labor disputes shall be at the sole discretion of the
23 Party having the difficulty),

24 (4) when the non-performing Party is able to
25 resume performance of its obligations under this
26 Agreement, that Party shall give the other Party
27 written notice to that effect, and
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(5) capacity payments during such periods of force majeure on Seller's part shall be governed by Section E-2(c), Appendix E.

(c) In the event a Party is unable to perform due to legislative, judicial, or regulatory agency action, this Agreement shall be renegotiated to comply with the legal change which caused the non-performance.

A-9 INDEMNITY

Each Party as indemnitor shall save harmless and indemnify the other Party and the directors, officers, and employees of such other Party against and from any and all loss and liability for injuries to persons including employees of either Party, and property damages including property of either Party resulting from or arising out of (1) the engineering, design, construction, maintenance, or operation of, or (2) the making of replacements, additions, or betterments to, the indemnitor's facilities. This indemnity and save harmless provision shall apply notwithstanding the active or passive negligence of the indemnitee. Neither Party shall be indemnified hereunder for its liability or loss resulting from its sole negligence or willful misconduct. The indemnitor shall, on the other Party's request, defend any suit asserting a claim covered by this indemnity and shall pay all costs, including

1 reasonable attorney fees, that may be incurred by the other
2 Party in enforcing this indemnity.

3
4 A-10 LIABILITY; DEDICATION

5
6 (a) Nothing in this Agreement shall create any duty
7 to, any standard of care with reference to, or any liability
8 to any person not a Party to it. Neither Party shall be
9 liable to the other Party for consequential damages.

10
11 ~~(b) Each Party shall be responsible for protecting~~
12 its facilities from possible damage by reason of electrical
13 disturbances or faults caused by the operation, faulty
14 operation, or nonoperation of the other Party's facilities,
15 and such other Party shall not be liable for any such
16 damages so caused.

17
18 (c) No undertaking by one Party to the other under
19 any provision of this Agreement shall constitute the
20 dedication of that Party's system or any portion thereof to
21 the other Party or to the public or affect the status of
22 PGandE as an independent public utility corporation or
23 Seller as an independent individual or entity and not a
24 public utility.

25
26 A-11 SEVERAL OBLIGATIONS

27
28 Except where specifically stated in this Agreement to

1 be otherwise, the duties, obligations, and liabilities of
2 the Parties are intended to be several and not joint or
3 collective. Nothing contained in this Agreement shall ever
4 be construed to create an association, trust, partnership,
5 or joint venture or impose a trust or partnership duty,
6 obligation, or liability on or with regard to either Party.
7 Each Party shall be liable individually and severally for
8 its own obligations under this Agreement.

9
10 A-12 NON-WAIVER

11
12 Failure to enforce any right or obligation by either
13 Party with respect to any matter arising in connection with
14 this Agreement shall not constitute a waiver as to that
15 matter or any other matter.

16
17 A-13 ASSIGNMENT

18
19 It is contemplated that Seller will construct the
20 Facility, consisting of up to four (4) Windplants, each on
21 behalf of a single legal entity owner of such Windplant, and
22 will assign to each such entity its rights and obligations
23 under this Agreement. PGandE acknowledges that Seller shall
24 have the right to so assign its rights and obligations
25 hereunder, provided that:

1 (a) unless otherwise agreed to by the Parties, each
2 such transfer shall relate to a Windplant having a capacity
3 of at least 10,000 kW; and

4
5 (b) with respect to any such transfer, Seller shall
6 assign its entire rights hereunder, and the entity to whom
7 the transfer is made shall specifically assume all of
8 Seller's obligations hereunder, insofar as such obligations
9 pertain to the Windplant so transferred. Copies of any such
10 assignment and assumption shall be furnished to PGandE
11 within 30 days of their occurrences.

12
13 Upon completion of any assignment(s) permitted above,
14 assignor shall be released from any obligation to PGandE
15 under this Agreement with respect to the Windplant to which
16 the assignment relates.

17
18 Except as permitted above, any assignment(s) or
19 transfer(s) by Seller without the prior written consent of
20 PGandE shall be null and void. Any required consent of
21 PGandE to any assignment of Seller's rights, duties, or
22 interest in this Agreement shall not be unreasonably
23 withheld.

24
25 Seller presently intends to organize a wholly owned
26 subsidiary of Seller to act as the general partner of any
27 limited partnership to which Windplant(s) are transferred
28

1 pursuant to this Section; but Seller shall be under no
2 obligation to PGandE to use a subsidiary for this purpose.

3
4 A-14 CAPTIONS

5
6 All indexes, titles, subject headings, section
7 titles, and similar items are provided for the purpose of
8 reference and convenience and are not intended to affect the
9 meaning of the contents or scope of this Agreement.
10

11 A-15 CHOICE OF LAWS

12
13 This Agreement shall be interpreted in accordance
14 with the laws of the State of California, excluding any
15 choice of law rules which may direct the application of the
16 laws of another jurisdiction.
17

18 A-16 GOVERNMENTAL JURISDICTION AND AUTHORIZATION

19
20 Seller shall obtain any governmental authorizations
21 and permits required for the construction and operation of
22 the Facility. Seller shall reimburse PGandE for any and all
23 losses, damages, claims, penalties, or liability it incurs
24 as a result of Seller's failure to obtain or maintain such
25 authorizations and permits.
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A-17 NOTICES

Any notice, demand, or request required or permitted to be given by either Party to the other, and any instrument required or permitted to be tendered or delivered by either Party to the other, shall be in writing (except as provided in Section E-3) and so given, tendered, or delivered, as the case may be, by depositing the same in any United States Post Office with postage prepaid for transmission by certified mail, return receipt requested, addressed to the Party, or personally delivered to the Party, at the address in Article 9 of this Agreement. Changes in such designation may be made by notice similarly given.

A-18 INSURANCE

A-18.1 Comprehensive General Liability Coverage

(a) Seller shall maintain during the performance hereof, Comprehensive General Liability Insurance¹ of not less than \$1,000,000 if the Facility is over 100 kW, \$500,000 if the Facility is over 20 kW to 100 kW, and \$100,000 if the Facility is 20 kW or below of combined single limit or equivalent for bodily injury, personal injury, and property damage as the result of any one occurrence.

¹ Governmental agencies which have an established record of self-insurance may provide the required coverage through self-insurance.

1 (b) Comprehensive General Liability Insurance shall
2 include coverage for Premises-Operations, Owners and
3 Contractors Protective, Products/Completed Operations
4 Hazard, Explosion, Collapse, Underground, Contractual
5 Liability, and Broad Form Property Damage including
6 Completed Operations.

7
8 (c) Such insurance, by endorsement to the
9 policy(ies), shall include PGandE as an additional insured
10 if the Facility is over 100 kW insofar as work performed by
11 ~~Seller for PGandE is concerned, shall contain a severability~~
12 of interest clause, shall provide that PGandE shall not by
13 reason of its inclusion as an additional insured incur
14 liability to the insurance carrier for payment of premium
15 for such insurance, and shall provide for 30-days' written
16 notice to PGandE prior to cancellation, termination,
17 alteration, or material change of such insurance.

18
19 A-18.2 Additional Insurance Provisions

20
21 (a) Evidence of coverage described above in Section
22 A-18.1 shall state that coverage provided is primary and is
23 not excess to or contributing with any insurance or
24 self-insurance maintained by PGandE.

25
26 (b) PGandE shall have the right to inspect or obtain
27 a copy of the original policy(ies) of insurance.

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(c) Seller shall furnish the required certificates¹ and endorsements to PGandE prior to commencing operation.

(d) All insurance certificates¹, endorsements, cancellations, terminations, alterations, and material changes of such insurance shall be issued and submitted to the following:

PACIFIC GAS AND ELECTRIC COMPANY
Attention: Manager - Insurance Department
77 Beale Street, Room E280
San Francisco, CA 94106

¹ A governmental agency qualifying to maintain self-insurance should provide a statement of self-insurance.

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APPENDIX B
ENERGY PAYMENT OPTIONS

Energy Payment Option 1 - Forecasted Energy Prices

Pursuant to Article 4, the energy payment calculation for Seller's energy deliveries during each year of the fixed price period shall include the appropriate prices for such year in Table B-1, multiplied by the percentage Seller has specified in Article 4. If Seller has selected Curtailment Option B in Article 7, the forecasted off-peak hours' energy prices listed in Table B-1 shall be adjusted upward by 7.7% for Period A and 9.6% for Period B.

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TABLE B-1

Forecasted Energy Price Schedule

Year of Energy Deliv- eries	Forecasted Energy Prices*, ¢/kWh						Weighted Annual Average
	Period A			Period B			
	On-Peak	Partial-Peak	Off-Peak	On-Peak	Partial-Peak	Off-Peak	
1983	5.36	5.12	4.94	5.44	5.31	5.19	5.18
1984	5.66	5.40	5.22	5.74	5.61	5.48	5.47
1985	5.75	5.48	5.30	5.83	5.69	5.56	5.55
1986	5.99	5.72	5.52	6.08	5.94	5.80	5.79
1987	6.38	6.08	5.88	6.47	6.32	6.17	6.16
1988	6.94	6.62	6.39	7.03	6.87	6.71	6.70
1989	7.60	7.25	7.00	7.70	7.53	7.35	7.34
1990	8.12	7.74	7.48	8.23	8.04	7.85	7.84
1991	8.64	8.24	7.96	8.75	8.56	8.35	8.34
1992	9.33	8.90	8.60	9.46	9.24	9.02	9.01
1993	10.10	9.63	9.30	10.23	10.00	9.76	9.75
1994	10.91	10.41	10.06	11.06	10.81	10.55	10.54
1995	11.79	11.25	10.87	11.96	11.68	11.40	11.39
1996	12.67	12.09	11.68	12.85	12.56	12.25	12.24
1997	13.61	12.98	12.54	13.79	13.48	13.15	13.14

* These prices are differentiated by the time periods as defined in Table B-4.

1 Energy Payment Option 2 - Levelized Energy Prices

2
3 Pursuant to Article 4, the energy payment calculation
4 for Seller's energy deliveries during the fixed price period
5 shall include the appropriate prices set forth in Table B-2
6 for the year 1988 or the year in which energy deliveries
7 begin for the last wind turbine installed for a Windplant
8 whichever is earlier, and term of agreement, multiplied by
9 the percentage Seller has specified in Article 4. Seller
10 shall notify PGandE when the last wind turbine for a
11 Windplant begins energy deliveries. ~~If Seller has selected~~
12 Curtailement Option B in Article 7, the levelized off-peak
13 hours' energy prices listed in Table B-2 shall be adjusted
14 upward by 7.7% for Period A and 9.6% for Period B. The
15 discount specified in (c)(vi) below, if applicable, will be
16 applied to the energy payments during the fixed price
17 period.

18
19 During the fixed price period, Seller shall be subject
20 to the following conditions and terms:

21
22 (a) Minimum Damages

23
24 The Parties agree that the levelized energy prices
25 which PGandE pays Seller for the energy which Seller
26 delivers to PGandE is based on the agreed value to
27 PGandE of Seller's energy deliveries during the entire
28 fixed price period. In the event PGandE does not

1 receive such full performance by reason of a breach of
 2 this Agreement by Seller, Seller shall pay PGandE an
 3 amount based on the difference between the net present
 4 values, at the time of termination, of the payments
 5 Seller would receive at the forecasted energy prices in
 6 Table B-1 and the payments Seller would receive at the
 7 levelized energy prices, for the remaining years of the
 8 fixed price period. This amount shall be calculated by
 9 assuming that Seller continued to generate for the
 10 remaining years of the fixed price period at a level
 11 equal to the average annual energy generation during
 12 the period of performance, and by applying the weighted
 13 annual average levelized price applicable to Seller's
 14 Windplant and the weighted annual average forecasted
 15 energy prices in Table B-1 for the remaining years of
 16 the fixed price period. The following formula shall be
 17 used to make this calculation for each Windplant:

$$18 \quad P = \sum_{n=1}^Y \frac{(F_n)(A)(W)}{(1.15)^n} - \sum_{n=1}^Y \frac{(L)(A)(W)}{(1.15)^n}$$

19
 20
 21 where:

22
 23 P = amount due PGandE.

24 Y = number of years remaining in the fixed price
 25 period.

26 F_n = weighted annual average forecasted energy
 27 price in the nth year after the breach,
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failure to perform, or expiration of security, as shown in Table B-1 for the corresponding calendar year.

L = weighted annual average levelized energy price applicable to Seller's Windplant.

A = average annual energy generation by Seller from the Windplant during the period of performance.

n = summation index; refers to the nth year following termination.

W = percent of Seller's energy payments based on the levelized energy prices, as specified in Article 4.

(b) Performance Requirements

Seller shall operate and maintain each Windplant in accordance with prudent electrical practices in order to maximize the likelihood that the Windplant's output as delivered to PGandE during the part of the fixed price period when the levelized price is below the forecasted price ("last part") shall equal or exceed 70% of the Windplant's output during the part of the fixed price period when the levelized price is above the forecasted price ("first part"). In the event that the Windplant's output during any year or series of years in the last part of the fixed price period is less than 70% of the average annual production during

1 the first part of the fixed price period, PGandE may,
2 at its discretion (taking into consideration events
3 occurring during such year or series of years such as
4 curtailment by PGandE, Seller's choice not to operate
5 during adjusted price periods, or scheduled maintenance
6 including major overhauls, and the probability that
7 Seller's future performance will be adequate), either
8 request payment from Seller or immediately draw on the
9 security posted, up to the amount equal to
10 $P \times \frac{A-B}{A}$, where:

11 P and A are as defined in Section (a) above.

12 B = Seller's average annual energy generation
13 during the year or series of years in which
14 the 70% performance requirement was not met.
15

16
17 PGandE shall not request payment from Seller or draw on
18 the security posted if the Windplant's output during
19 the last part of the fixed price period falls below 70%
20 of the average annual energy generation during the
21 first part of the fixed price period solely because of
22 force majeure as defined in Section A-8, Appendix A or
23 a lack of or limited availability of the primary energy
24 resource of the Windplant(s), if such energy resource
25 is wind, water, or sunlight.
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(c) Security

(1) As security for amounts which Seller may be obligated to pay PGandE pursuant to Sections (a) and (b) above, Seller shall provide and maintain one or more of the following in an amount as described in Section (c)(2) below.

(i) An irrevocable bank letter of credit delivered to and in favor of PGandE with terms acceptable to PGandE.

(ii) A payment bond providing for payment to PGandE in the event of any failure to meet the performance requirements set forth in Section (b) above or breach of this Agreement by Seller. Such bond shall be issued by a surety company acceptable to PGandE and shall have terms acceptable to PGandE.

(iii) Fully paid up, noncancellable Project Failure Insurance made payable to PGandE with terms of such policy(ies) acceptable to PGandE.

(iv) A performance bond providing for payment to PGandE in the event of any failure to meet the performance requirements set forth in Section (b) above or breach of this Agreement

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by Seller. Such bond shall be issued by a surety company acceptable to PGandE and shall have terms acceptable to PGandE.

(v) A corporate guarantee of payment to PGandE which PGandE deems, in its sole discretion, to provide at least the same quality of security as subsections (i) through (iv) above.

~~(vi) Other forms of security which PGandE does not deem to be equivalent security to those listed in subsections (i) through (v) above, and which PGandE, in its sole discretion, deems adequate. Such other forms of security may include, for example, a corporate guarantee or a lien, mortgage or deed of trust on the Windplant(s) or land upon which it is located. A 1.5% discount will be applied against the levelized energy price portion of PGandE's payments to Seller during the fixed price period if this type of security is provided.~~

(2) (i) Commencing 90 days prior to the scheduled operation date and continuing until December 1 of the following calendar year, security as described in Section (c)(1) above

1 shall be in place in an amount calculated in
2 accordance with the formula set forth in
3 Section (a) above, assuming Seller delivered
4 energy through the end of the following
5 calendar year and then terminated this
6 Agreement. For purposes of determining the
7 required amount of security, it shall be
8 assumed that Seller's deliveries from a
9 Windplant through the end of the following
10 calendar year would equal $R \times C \times H$, where:

11
12 R = nameplate rating, in kW, of the
13 Windplant.

14 C = estimated capacity factor of the
15 Windplant, which shall be
16 established by mutual agreement of
17 the Parties at the time of
18 execution of this Agreement.

19 H = number of hours from the scheduled
20 operation date through the end of
21 the following calendar year.

22
23 (ii) In the second calendar year of operation and
24 each year thereafter until the end of the
25 fixed price period, from December 1 through
26 December 1 of the following year, security
27 shall be in place in an amount calculated by
28 the formula set forth in Section (a) above

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assuming Seller continued to deliver energy in each month through the end of the following calendar year, at a level equal to the average monthly energy deliveries to date, and then terminated this Agreement.

(3) Security must be maintained throughout the fixed price period as specified above. Any security with a fixed expiration date must be renewed by Seller prior to that date. If such security is ~~not renewed at least 30 days prior to its~~ expiration, PGandE may, at its discretion, either request payment from Seller or immediately draw on the security posted, up to the amount calculated in accordance with the formula set forth in Section (a) above.

(4) If, at any time during the fixed price period, PGandE believes Seller is in material breach of this Agreement, PGandE shall so notify Seller in writing and Seller must remedy such breach within a reasonable period of time. If Seller does not so remedy, PGandE may, at its discretion, either request payment from Seller or immediately draw upon the security posted, up to the amount calculated in accordance with the formula set forth in Section (a) above, provided that if during Seller's period to remedy, Seller disputes

1 PGandE's conclusion that Seller is in material
2 breach, and PGandE elects to draw upon the
3 security, the amount drawn upon by PGandE shall be
4 deposited in an interest earning escrow account
5 and held in such account until the dispute is
6 resolved in accordance with Section (c)(5) below.

7
8 (5) Upon the written request of either Party, any
9 controversy or dispute between the Parties
10 concerning Section (c)(4) above shall be subject
11 to arbitration in accordance with the provisions
12 of the California Arbitration Act, Sections
13 1280-1294.2 of the California Code of Civil
14 Procedure except as provided otherwise in this
15 section. Either Party may demand arbitration by
16 first giving written notice of the existence of a
17 dispute and then within 30 days of such notice
18 giving a second written notice of the demand for
19 arbitration.

20
21 Within ten days after receipt of the demand for
22 arbitration, each Party shall appoint one person,
23 who shall not be an employee of either Party, to
24 hear and determine the dispute. After both
25 arbitrators have been appointed, they shall within
26 five (5) days select a third arbitrator.

27
28 The arbitration hearing shall take place in

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San Francisco, California, within 30 days of the appointment of the arbitrators, at such time and place as they select. The arbitrators shall give written notice of the time of the hearing to both Parties at least ten days prior to the hearing. The arbitrators shall not be authorized to alter, extend, or modify the terms of this Agreement. At the hearing, each Party shall submit a proposed written decision, and any relevant evidence may be presented. The decision of the arbitrators must consist of selection of one of the two proposed decisions, in its entirety.

The decision of any two arbitrators shall be binding and conclusive as to disputes relating to Section (c)(4) only. Upon determining the matter, the arbitrators shall promptly execute and acknowledge their decision and deliver a copy to each Party. A judgment confirming the award may be rendered by any superior court having jurisdiction. Each Party shall bear its own arbitration costs and expenses, including the cost of the arbitrator it selected, and the costs and expenses of the third arbitrator shall be divided equally between both Parties, except as provided otherwise elsewhere in this Agreement.

Pending resolution of any controversy or dispute

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hereunder, performance by each Party shall continue so as to maintain the status quo prior to notice of such controversy or dispute. Resolution of the controversy or dispute shall include payment of any interest accrued in the escrow account.

TABLE B-2
Levelized Energy Price Schedule

For a term of agreement of 20-30 years:

Year in Which Energy Deliveries Begin	Levelized Energy Prices*, ¢/kWh						Weighted Annual Average
	Period A			Period B			
	On-Peak	Partial-Peak	Off-Peak	On-Peak	Partial-Peak	Off-Peak	
1983	6.49	6.20	5.98	6.58	6.43	6.28	6.27
1984	6.90	6.58	6.35	6.99	6.83	6.67	6.66
1985	7.34	7.00	6.76	7.44	7.27	7.10	7.09
1986	7.88	7.51	7.26	7.99	7.81	7.62	7.61
1987	8.49	8.10	7.82	8.61	8.41	8.21	8.20
1988	9.16	8.74	8.44	9.29	9.08	8.86	8.85

* These prices are differentiated by the time periods as defined in Table B-4.

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Energy Payment Option 3 - Incremental Energy Rate

During the period specified in Article 4, annual adjustments to Seller's energy payments shall be made as described below.

At the end of each calendar year, the Derived Incremental Energy Rate (with units expressed in Btu/kWh) will be calculated as follows:

$$\text{Derived Incremental Energy Rate (DIER)} = \frac{B}{A \times C}$$

where:

A = the total kWh delivered by Seller during the calendar year, excluding any kWh delivered when Seller was asked to curtail deliveries under Curtailment Option A or when Seller was asked to take adjusted prices under Curtailment Option B.

B = the total dollars paid for the energy described for A above.

C = the weighted average price paid during the calendar year by PGandE's Electric Department for oil and natural gas for PGandE's fossil steam plants, expressed in \$/Btu on a gas Btu basis.

1 If the DIER is between the upper and lower Incremental
2 Energy Rate Bounds specified for that year in Table B-3 for
3 the curtailment option selected by Seller, no additional
4 payment is due either Party.

5
6 If the DIER is below the lower Incremental Energy Rate
7 Bound, PGandE shall pay Seller an amount calculated as
8 follows:

9
10
$$P_S = (\text{Lower Incremental Energy Rate Bound} - \text{DIER})(A)(C)$$

11 where:

12 P_S = additional payment due Seller.
13 DIER = Derived Incremental Energy Rate.

14
15 PGandE shall add this payment to the first payment made to
16 Seller following the calculation.

17
18 If the DIER is above the upper Incremental Energy Rate
19 Bound, Seller shall pay PGandE an amount calculated as
20 follows:

21
22
$$P_B = (\text{DIER} - \text{Upper Incremental Energy Rate Bound})(A)(C)$$

23
24 where:

25 P_B = amount due PGandE.
26 DIER = Derived Incremental Energy Rate.

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This amount shall be deducted from the first payment made to Seller following the calculation. If there is any remaining amount due PGandE, PGandE may, at its option, invoice Seller with such payment due within 30 days or deduct this amount from future payments due Seller.

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TABLE B-3

Forecasted Incremental Energy Rates and
Incremental Energy Rate Bounds

Curtailement Option A:

Year	Forecasted Incremental Energy Rates, Btu/kWh (a)	Incremental Energy Rate Band Width from Article 4, Btu/kWh (b)	Upper Incremental Energy Rate Bound, Btu/kWh [column (a) plus column (b)]	Lower Incr Energy Rate Bo Btu/k [column minus colu
1984	9,000			
1985	9,050			
1986	8,840			
1987	8,850			
1988	8,960			
1989	8,820			
1990	8,540			
1991	8,540			
1992	8,540			
1993	8,540			
1994	8,540			
1995	8,540			
1996	8,540			
1997	8,540			
1998	8,540			

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TABLE B-3 (continued)

Curtailment Option B:

Year	Forecasted Incremental Energy Rates, Btu/kWh (a)	Incremental Energy Rate Band Width from Article 4, Btu/kWh (b)	Upper Incremental Energy Rate Bound, Btu/kWh [column (a) plus column (b)]	Lower Incremental Energy Rate Bound, Btu/kWh [column (a) minus column(b)]
1984	9,440	_____	_____	_____
1985	9,500	_____	_____	_____
1986	9,280	_____	_____	_____
1987	9,290	_____	_____	_____
1988	9,400	_____	_____	_____
1989	9,270	_____	_____	_____
1990	8,970	_____	_____	_____
1991	8,970	_____	_____	_____
1992	8,970	_____	_____	_____
1993	8,970	_____	_____	_____
1994	8,970	_____	_____	_____
1995	8,970	_____	_____	_____
1996	8,970	_____	_____	_____
1997	8,970	_____	_____	_____
1998	8,970	_____	_____	_____

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TABLE B-4¹
Time Periods

	<u>Monday through Friday²</u>	<u>Saturdays²</u>	<u>Sundays and Holidays</u>
Seasonal Period A (May 1 through September 30)			
On-Peak	12:30 p.m. to 6:30 p.m.		
Partial-Peak	8:30 a.m. to 12:30 p.m. 6:30 p.m. to 10:30 p.m.	8:30 a.m. to 10:30 p.m.	
Off-Peak	10:30 p.m. to 8:30 a.m.	10:30 p.m. to 8:30 a.m.	All Day
Seasonal Period B (October 1 through April 30)			
On-Peak	4:30 p.m. to 8:30 p.m.		
Partial-Peak	8:30 p.m. to 10:30 p.m. 8:30 a.m. to 4:30 p.m.	8:30 a.m. to 10:30 p.m.	
Off-Peak	10:30 p.m. to 8:30 a.m.	10:30 p.m. to 8:30 a.m.	All Day

¹ This table is subject to change to accord with the on-peak, partial-peak, and off-peak periods as defined in PGandE's own rate schedules for the sale of electricity to its large industrial customers.

² Except the following holidays: New Year's Day, Washington's Birthday, Memorial Day, Independence Day, Labor Day, Veteran's Day, Thanksgiving, and Christmas, as said days are specified in Public Law 90-363 (5 U.S.C.A. Section 6103(a)).

TABLE B-5

Energy Prices Effective January 1 - April 30, 1984

The energy purchase price calculations which will apply to energy deliveries determined from meter readings taken during January, February, March, and April 1984 are as follows:

<u>Time Period</u>	(a) <u>Incremental Energy Rate¹</u> (Btu/kWh)	(b) <u>Cost of Energy²</u> (\$/10 ⁶ Btu)	(c) <u>Revenue Requirement for Cash Working Capital³</u> (\$/kWh)	(d) <u>Energy Purchase Price⁴</u> <u>(d) = [(a) x (b)] + (c)</u> (\$/kWh)
Jan. 1 - Apr. 30 (Period B)				
Time of Delivery Basis:				
On-Peak	15,410	5.3978	0.00053	0.08371
Partial-Peak	14,730	5.3978	0.00051	0.08002
Off-Peak	11,353	5.3978	0.00038	0.06166
Seasonal Average (Period B)	13,089	5.3978	0.00045	0.07110

¹ Incremental energy rates in Btu/kWh are derived from marginal energy costs (including variable operating and maintenance expense) adopted by CPUC Decision No. 83-12-068. They are based upon natural gas as the incremental fuel and weighted average hydro electric power conditions.

² Cost of natural gas under PGandE Gas Schedule No. G-55 (applicable to steam electric plants) in CPUC Decision No. 83-12-069 effective January 1, 1984.

³ Revenue Requirement for Cash Working Capital as prescribed by the CPUC in Decision No. 83-12-068.

⁴ Energy Purchase Price = (Incremental Energy Rate x Cost of Energy) + Revenue Requirement for Cash Working Capital. The energy purchase price excludes the applicable energy line loss adjustment factors. However, as ordered by Ordering Paragraph No. 12(j) of Decision No. 82-12-120, this figure is currently 1.0 for transmission and primary distribution loss adjustments and is equal to marginal cost line loss adjustment factors for the secondary distribution voltage level. These factors may be changed by the CPUC in the future. The currently applicable energy loss adjustment factors are shown in Table B-6.

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TABLE B-6

Energy Loss Adjustment Factors¹

	<u>Transmission</u>	<u>Primary Distribution</u>	<u>Secondary Distribution</u>
Seasonal Period A (May 1 through September 30)			
On-Peak	1.0	1.0	1.0148
Partial-Peak	1.0	1.0	1.0131
Off-Peak	1.0	1.0	1.0093
Seasonal Period B (October 1 through April 30)			
On-Peak	1.0	1.0	1.0128
Partial-Peak	1.0	1.0	1.0119
Off-Peak	1.0	1.0	1.0087

¹ The applicable energy loss adjustment factors may be revised pursuant to orders of the CPUC.

1 APPENDIX C

2 CURTAILMENT OPTIONS

3
4 Seller has two options regarding curtailment of energy
5 deliveries and Seller has made its selection in Article 7.
6 The two options are as follows:

7
8 CURTAILMENT OPTION A - HYDRO SPILL AND
9 NEGATIVE AVOIDED COST

10 (a) In anticipation of a period of hydro spill
11 conditions, as defined by the CPUC, PGandE may notify Seller
12 that any purchases of energy from Seller during such period
13 shall be at hydro savings prices quoted by PGandE. If
14 Seller delivers energy to PGandE during any such period,
15 Seller shall be paid hydro savings prices for those
16 deliveries in lieu of prices which would otherwise be
17 applicable. The hydro savings prices shall be calculated by
18 PGandE using the following formula:

19
20
$$\frac{AQF - S}{AQF} \times PP \quad (\geq 0)$$

21
22 where:

23 AQF = Energy, in kWh, projected to be available
24 during hydro spill conditions from all
25 qualifying facilities under agreements
26 containing hydro savings price provisions.
27
28

1 be paid at the economy sales price obtained by PGandE in
2 lieu of the otherwise applicable prices.

3
4 (d) If Seller is selling net energy output to PGandE
5 and simultaneously purchasing its electrical needs from
6 PGandE and Seller elects not to sell energy to PGandE at the
7 hydro savings price pursuant to subsection (a) or when
8 PGandE curtails deliveries of energy pursuant to subsection
9 (b), Seller shall not use such energy to meet its electrical
10 needs but shall continue to purchase all its electrical
11 ~~needs from PGandE. If Seller is selling surplus energy~~
12 output to PGandE, subsections (a) or (b) shall only apply to
13 the surplus energy output being delivered to PGandE, and
14 Seller can continue to internally use that generation it has
15 retained for its own use.

16
17 CURTAILMENT OPTION B - ADJUSTED PRICE PERIOD

18
19 (a) In each calendar year, the price which PGandE is
20 obligated to pay Seller for energy deliveries during 1,000
21 off-peak hours (as defined in Table B-4, Appendix B) may be
22 adjusted to a price equal to, but not in excess of, PGandE's
23 available alternative source. This adjusted price shall be
24 effective under any of the following conditions:

25
26 (i) when PGandE's energy source at the margin
27 is not a PGandE oil- or gas-fueled plant, and PGandE
28

1 can replace Seller's energy with energy from this
2 source at a cost less than the price paid to Seller;

3
4 (ii) when PGandE would incur negative avoided
5 costs (as defined by the CPUC) due to continued
6 acceptance of energy deliveries under this Agreement;
7 or

8
9 (iii) when PGandE is experiencing minimum system
10 operations.

11
12 During any of the conditions described above the
13 adjusted price may be zero.

14
15 (b) Whenever possible, PGandE shall give Seller
16 reasonable notice of any price adjustment for energy
17 deliveries and its probable duration.

18
19 (c) If Seller is selling net energy output to PGandE
20 and simultaneously purchasing its electrical needs from
21 PGandE and Seller elects not to sell energy to PGandE at the
22 adjusted price, Seller shall not use such energy to meet its
23 electrical needs but shall continue to purchase all its
24 electrical needs from PGandE.

25
26 (d) After Seller receives notice of the probable
27 duration of the period during which the adjusted price will
28 be paid, Seller may elect to perform maintenance during such

1 period and so inform the PGandE employee in charge at the
2 designated PGandE switching center prior to the time when
3 the adjusted price period is expected to begin. If Seller
4 makes such election, the number of off-peak hours of
5 probable duration quoted in PGandE's notice to Seller shall
6 be applied to the 1,000 hour calendar year limitation set
7 forth in this section. After an election to do maintenance,
8 if Seller makes any deliveries of energy during the quoted
9 probable duration period, Seller shall be paid the adjusted
10 price quoted in its notice from PGandE without regard to any
11 subsequent changes on the PGandE system which may alter the
12 adjusted price or shorten the actual duration of the
13 condition.

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1 APPENDIX D

2 AS-DELIVERED CAPACITY

3
4 D-1 AS-DELIVERED CAPACITY PAYMENT OPTIONS

5
6 Seller has two options for as-delivered capacity
7 payments and Seller has made its selection in Article 5.
8 The two options are as follows:
9

10
11 AS-DELIVERED CAPACITY PAYMENT OPTION 1

12
13 PGandE shall pay Seller for as-delivered capacity
14 at prices authorized from time to time by the CPUC. The
15 as-delivered capacity prices in effect on the date of
16 execution are calculated as shown in Exhibit D-1.
17

18
19 AS-DELIVERED CAPACITY PAYMENT OPTION 2

20
21 During the fixed price period, the as-delivered
22 capacity prices will be calculated in accordance with
23 Exhibit D-1 and the forecasted shortage costs in Table D-2.
24

25 For the remaining years of the term of agreement,
26 PGandE shall pay Seller for as-delivered capacity at the
27 higher of:
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- (i) prices authorized from time to time by the CPUC;

- (ii) the as-delivered capacity prices that were paid Seller in the last year of the fixed price period; or

- (iii) the as-delivered capacity prices in effect in the first year following the end of the fixed price period, provided that the annualized shortage cost from which these prices are derived does not exceed the annualized value of a gas turbine.

D-2 AS-DELIVERED CAPACITY IN EXCESS OF FIRM CAPACITY

The amount of capacity delivered in excess of firm capacity will be considered as-delivered capacity. This as-delivered capacity is based on the total kilowatt-hours delivered each month during all on-peak, partial-peak and off-peak hours excluding any energy associated with generation levels equal to or less than the firm capacity.

1 Seller has the two options listed in Section D-1
2 for payment for such as-delivered capacity. Seller has made
3 its selection in Article 5.

4
5
6 EXHIBIT D-1

7
8 The as-delivered capacity price (in cents per
9 kW-hr) for power delivered by each Windplant is the product
10 of three factors:

11
12 (a) The shortage cost in each year the Windplant
13 is operating.

14
15 (b) A capacity loss adjustment factor which
16 provides for the effect of the deliveries on
17 PGandE's transmission and distribution losses
18 based on the Seller's interconnection voltage
19 level. The applicable capacity loss
20 adjustment factors for non-remote¹ Facilities
21 are presented in Table D-1(a). Capacity loss
22 adjustment factors for remote Facilities
23 shall be calculated individually.

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27 ¹ As defined by the CPUC.

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(c) An allocation factor which accounts for the different values of as-delivered capacity in different time periods and converts dollars per kW-year to cents per kWh. The current allocation factors are presented in Table D-1(b). The time periods to which they apply are shown in Table B-4, Appendix B. All allocation factors are subject to change by PGandE based on PGandE's marginal capacity cost allocation, as determined in general rate case proceedings before the CPUC.

Seasonal Periods A and B are defined in Table B-4, Appendix B.

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TABLE D-1(a)

Capacity Loss Adjustment Factors
for Non-Remote¹ Facilities

<u>Voltage Level</u>	<u>Loss Adjustment Factor</u>
Transmission	.989
Primary Distribution	.991
Secondary Distribution	.991

If the Facility is remote, the capacity loss adjustment factor is _____².

TABLE D-1(b)

Allocation Factors
for As-Delivered Capacity³

	<u>Peak</u> (¢-yr/\$-hr)	<u>Partial Peak</u> (¢-yr/\$-hr)	<u>Off-Peak</u> (¢-yr/\$-hr)
Seasonal Period A	.10835	.02055	.00002
Seasonal Period B	.00896	.00109	.00001

¹ As defined by the CPUC. The capacity loss adjustment factors for remote Facilities are determined individually.

² Determined individually.

³ The units for the allocation factor, ¢-yr/\$-hr, are derived from the conversion of \$/kW-yr into ¢/kWh as follows:

$$\frac{\text{¢/kWh}}{\text{\$/kW-yr}} = \frac{\text{¢/kW-hr}}{\text{\$/kW-yr}} = \frac{\text{¢-yr}}{\text{\$-hr}}$$

All allocation factors are subject to change by PGandE based on PGandE's marginal capacity cost allocation, as determined in general rate case proceedings before the CPUC. Seasonal Periods A and B are defined in Table B-4, Appendix B.

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TABLE D-2

Forecasted Shortage Cost Schedule

<u>Year</u>	<u>Forecast Shortage Cost, \$/kW-Yr</u>
1983	70
1984	76
1985	81
1986	88
1987	95
1988	102
1989	110
1990	118
1991	126
1992	135
1993	144
1994	154
1995	164
1996	176
1997	188

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APPENDIX E
FIRM CAPACITY
CONTENTS

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1 APPENDIX E

2 FIRM CAPACITY

3
4 E-1 GENERAL

5
6 This Appendix E establishes conditions and prices under
7 which PGandE shall pay for firm capacity.

8
9 PGandE's obligation to pay for firm capacity shall
10 begin on the firm capacity availability date. The firm
11 capacity price shall be subject to adjustment as provided
12 for in this Appendix E.

13
14 The firm capacity prices in Table E-2 are applicable
15 for deliveries of firm capacity beginning after December 30,
16 1982.

17
18 E-2 MINIMUM PERFORMANCE REQUIREMENTS

19
20 (a) To receive full capacity payments, the firm
21 capacity shall be delivered for all of the on-peak hours¹ in
22 the peak months on the PGandE system, which are presently
23 the months of June, July, and August, subject to a 20
24 percent allowance for forced outages in any month.
25 Compliance with this provision shall be based on the
26 Facility's total on-peak deliveries for each of the peak
27

28 ¹ On-peak, partial-peak, and off-peak hours are defined in Table B-4,
Appendix B.

1 months and shall exclude any energy associated with
2 generation levels greater than the firm capacity.

3
4 (b) If Seller is prevented from meeting the minimum
5 performance requirements because of a forced outage on the
6 PGandE system, a PGandE curtailment of Seller's deliveries,
7 or a condition set forth in Section A-7, Appendix A, PGandE
8 shall continue capacity payments. Firm capacity payments
9 will be calculated in the same manner used for scheduled
10 maintenance outages.

11
12 (c) If Seller is prevented from meeting the minimum
13 performance requirements because of force majeure, PGandE
14 shall continue capacity payments for ninety days from the
15 occurrence of the force majeure. Thereafter, Seller shall
16 be deemed to have failed to have met the minimum performance
17 requirements. Firm capacity payments will be calculated in
18 the same manner used for scheduled maintenance outages.

19
20 (d) If Seller is prevented from meeting the minimum
21 performance requirements because of extreme dry year condi-
22 tions, PGandE shall continue capacity payments. Extreme dry
23 year conditions are drier than those used to establish firm
24 capacity pursuant to Section E-8. Seller shall warrant to
25 PGandE that the Facility is a hydroelectric facility and
26 that such conditions are the sole cause of Seller's
27 inability to meet its firm capacity obligations.

1 (e) If Seller is prevented from meeting the minimum
2 performance requirements for reasons other than those
3 described above in Sections E-2(b), (c), or (d):

4 (1) Seller shall receive the reduced firm
5 capacity payments as provided in Section E-5 for a
6 probationary period not to exceed 15 months, or as
7 otherwise agreed to by the Parties.

8 (2) If, at the end of the probationary period
9 Seller has not demonstrated that the Facility can meet
10 the minimum performance requirements, PGandE may derate
11 the firm capacity pursuant to Section E-4(b).

12
13 E-3 SCHEDULED MAINTENANCE

14
15 Outage periods for scheduled maintenance shall not
16 exceed 840 hours (35 days) in any 12-month period. This
17 allowance may be used in increments of an hour or longer on
18 a consecutive or nonconsecutive basis. Seller may
19 accumulate unused maintenance hours from one 12-month period
20 to another up to a maximum of 1,080 hours (45 days). This
21 accrued time must be used consecutively and only for major
22 overhauls. Seller shall provide PGandE with the following
23 advance notices: 24 hours for scheduled outages less than
24 one day, one week for a scheduled outage of one day or more
25 (except for major overhauls), and six months for a major
26 overhaul. Seller shall not schedule major overhauls during
27 the peak months (presently June, July and August). Seller
28 shall make reasonable efforts to schedule or reschedule

1 routine maintenance outside the peak months, and in no event
2 shall outages for scheduled maintenance exceed 30 peak hours
3 during the peak months. Seller shall confirm in writing to
4 PGandE pursuant to Article 9, within 24 hours of the
5 original notice, all notices Seller gives personally or by
6 telephone for scheduled maintenance.

7
8 If Seller has selected Curtailment Option B, off-peak
9 hours of maintenance performed pursuant to Section (d) of
10 Curtailment Option B, Appendix C shall not be deducted from
11 Seller's scheduled maintenance allowances set forth above.

12
13 E-4 ADJUSTMENTS TO FIRM CAPACITY

14
15 (a) Seller may increase the firm capacity with the
16 approval of PGandE and receive payment for the additional
17 capacity thereafter in accordance with the applicable
18 capacity purchase price published by PGandE at the time the
19 increase is first delivered to PGandE.

20
21 (b) Seller may reduce the firm capacity at any time
22 prior to the firm capacity availability date by giving
23 written notice thereof to PGandE. PGandE may derate the
24 firm capacity in accordance with Section E-2(e) as a result
25 of appropriate data showing Seller has failed to meet the
26 minimum performance requirements of Section E-2.

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E-5 FIRM CAPACITY PAYMENTS

The method for calculation of firm capacity payments is shown below. As used below in this section, month refers to a calendar month.

The monthly payment for firm capacity will be the product of the Period Price Factor (PPF), the Monthly Delivered Capacity (MDC), the appropriate capacity loss adjustment factor from Table E-1 based on the Facility's interconnection voltage, and the appropriate performance bonus factor, if any, from Table E-3, plus any allowable payment for outages due to scheduled maintenance. The firm capacity price shall be applied to meter readings taken during the separate times and periods as illustrated in Table B-4, Appendix B.

The PPF is determined by multiplying the firm capacity price by the following Allocation Factors¹:

	Allocation Factor	x	<u>Firm Capacity Price</u>	=	PPF (\$/kW-month)
Seasonal Period A	.18540		_____		_____
Seasonal Period B	.01043		_____		_____

¹ All allocation factors are subject to change by PGandE based on PGandE's marginal capacity cost allocation, as determined in general rate case proceedings before the CPUC. Seasonal Periods A and B are defined in Table B-4, Appendix B.

1 The MDC is determined in the following manner:

2 (1) Determine the Performance Factor (P), which is
3 defined as the lesser of 1.0 or the following quantity:
4

$$5 \quad P = \frac{A}{C \times (B-S) \times (0.8^*)} \quad (\leq 1.0)$$

6
7 Where:

8 A = Total kilowatt-hours delivered during all on-peak
9 and partial-peak hours excluding any energy
10 associated with generation levels greater than the
11 firm capacity.

12 C = Firm capacity in kilowatts.

13 B = Total on-peak and partial-peak hours during the
14 month.

15 S = Total on-peak and partial-peak hours during the
16 month Facility is out of service on scheduled
17 maintenance.
18

19 (2) Determine the Monthly Capacity Factor (MCF), which
20 is computed using the following expression:
21

$$22 \quad MCF = P \times \left(1.0 - \frac{M}{D}\right)$$

23 Where:

24 M = The number of hours during the month Facility is
25 out of service on scheduled maintenance.

26 D = The number of hours in the month.
27

28 _____
* 0.8 reflects a 20% allowance for forced outage.

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(3) Determine the MDC by multiplying the MCF by C:

$$\text{MDC (kilowatts)} = \text{MCF} \times \text{C}$$

The monthly payment for firm capacity is then determined by multiplying the PPF by the MDC, by the appropriate capacity loss adjustment factor presented from Table E-1, and by the appropriate performance bonus factor, if any, from Table E-3.

$$\text{monthly payment for } \underline{\text{firm capacity}} = \text{PPF} \times \text{MDC} \times \text{capacity loss adjustment factor} \times \text{performance bonus factor}$$

Furthermore, the payment for a month in which there is an outage for scheduled maintenance shall also include an amount equal to the product of the average hourly firm capacity payment¹ for the most recent month in the same type of Seasonal Period (i.e., Seasonal Period A or Seasonal Period B) during which deliveries were made times the number of hours of outage for scheduled maintenance in the current month. Firm capacity payments will continue during the outage periods for scheduled maintenance provided that the provisions of Section E-3 are met.

During a probationary period Seller's monthly payment for firm capacity shall be determined by substituting for the firm capacity, the capacity at which

¹ Total monthly payment divided by the total number of hours in the monthly billing period.

1 Seller would have met the minimum performance requirements.
2 In the event that during the probationary period Seller does
3 not meet the minimum performance requirements at whatever
4 firm capacity was established for the previous month,
5 Seller's monthly payment for firm capacity shall be
6 determined by substituting the firm capacity at which Seller
7 would have met the minimum performance requirements. The
8 performance bonus factor shall not be applied during
9 probationary periods.
10
11

12 TABLE E-1

13
14 If the Facility is non-remote¹ the firm capacity loss
15 adjustment factors are as follows:
16

<u>Interconnection Voltage</u>	<u>Capacity Loss Adjustment Factor</u>
Transmission	.989
Primary Distribution	.991
Secondary Distribution	.991

17
18
19
20
21
22 If the Facility is remote the firm capacity loss adjustment
23 factor is _____².
24
25

26 _____
27 ¹ As defined by the CPUC.

28 ² Determined individually.

28 27 26 25 24 23 22 21 20 19 18 17 16 15 14 13 12 11 10 9 8 7 6 5 4 3 2 1

TABLE E-2

Firm Capacity Price Schedule
(Levelized \$/kW-year)

<u>Firm Capacity Avail-ability Date</u> (Year)	Number of Years of <u>Firm Capacity Delivery</u>																	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	20	25	30
1982	65	68	70	72	75	77	79	81	84	86	88	90	91	93	95	103	109	113
1983	70	73	75	78	80	83	85	88	90	92	94	96	98	100	102	110	117	122
1984	76	78	81	84	86	89	92	94	97	99	101	103	106	108	110	118	125	130
1985	81	84	87	90	93	96	99	101	104	106	109	111	113	115	118	127	134	140
1986	88	91	94	97	100	103	106	109	112	114	117	119	122	124	126	136	144	150
1987	95	98	101	105	108	111	114	117	120	123	125	128	130	133	135	146	154	160

TABLE E-3

Performance Bonus Factor

The following shall be the performance bonus factors applicable to the calculation of the monthly payments for firm capacity delivered by the Facility after it has demonstrated a firm capacity factor in excess of 85%.

DEMONSTRATED FIRM CAPACITY FACTOR (%)	PERFORMANCE BONUS FACTOR
85	1.000
90	1.059
95	1.118
100	1.176

After the Facility has delivered power during the span of all of the peak months on the PGandE system (presently June, July, and August) in any year (span),

(i) the firm capacity factor for each such month shall be calculated in the following manner:

$$\text{FIRM CAPACITY FACTOR (\%)} = \frac{A}{B \times C} \times 100$$

Where:

A = Total kilowatt-hours delivered by Seller in any peak month during all on-peak hours excluding any energy associated with generation levels greater than the firm capacity.

1 B = Total on-peak hours during the month.

2 C = Firm capacity in kilowatts.

3

4 (ii) the arithmetic average of the above firm capacity
5 factors shall be determined for that span,

6

7 (iii) the average of the above arithmetic average firm
8 capacity factors for the most recent span(s), not to exceed
9 5, shall be calculated and shall become the Demonstrated
10 Firm Capacity Factor.

11

12 To calculate the performance bonus factor for a
13 Demonstrated Firm Capacity Factor not shown in Table E-3 use
14 the following formula:

15

16 Performance Bonus Factor = $\frac{\text{Demonstrated Firm Capacity Factor (\%)}}{85\%}$

17

18

19

20 SECTIONS E-6 THROUGH E-10 SHALL APPLY ONLY TO HYDROELECTRIC
21 PROJECTS

22

23 E-6 DETERMINATION OF NATURAL FLOW DATA

24

25 Natural flow data shall be based on a period of record
26 of at least 50 years and which includes historic critically
27 dry periods. In the event Seller demonstrates that a
28 natural flow data base of at least 50 years would be

1 unreasonably burdensome, PGandE shall accept a shorter
2 period of record with a corresponding reduction in the
3 averaging basis set forth in Section E-8. Seller shall
4 determine the natural flow data by month by using one of the
5 following methods:

6
7 Method 1

8
9 If stream flow records are available from a recognized
10 gauging station on the water course being developed in the
11 general vicinity of the project, Seller may use the data
12 from them directly.

13
14 Method 2

15
16 If directly applicable flow records are not available,
17 Seller may develop theoretical natural flows based on
18 correlation with available flow data for the closest
19 adjacent and similar area which has a recognized gauging
20 station using generally accepted hydrologic estimating
21 methods.

22
23 E-7 THEORETICAL OPERATION STUDY

24
25 Based on the monthly natural flow data developed under
26 Section E-6 a theoretical operation study shall be prepared
27 by Seller. Such a study shall identify the monthly capacity
28 rating in kW and the monthly energy production in kWh for

1 each month of each year. The study shall take into account
2 all relevant operating constraints, limitations, and
3 requirements including but not limited to --

4 (1) Release requirements for support of fish life and
5 any other operating constraints imposed on the project;

6 (2) Operating characteristics of the proposed
7 equipment of the Facility such as efficiencies, minimum and
8 maximum operating levels, project control procedures, etc.;

9 (3) The design characteristics of project facilities
10 such as head losses in penstocks, valves, tailwater
11 ~~elevation levels, etc.; and~~

12 (4) Release requirements for purposes other than power
13 generation such as irrigation, domestic water supply, etc.

14 The theoretical operation study for each month shall
15 assume an even distribution of generation throughout the
16 month unless Seller can demonstrate that the Facility has
17 water storage characteristics. For the study to show
18 monthly capacity ratings, the Facility shall be capable of
19 operating during all on-peak hours in the peak months on the
20 PGandE system, which are presently the months of June, July,
21 and August. If the project does not have this capability
22 throughout each such month, the capacity rating in that
23 month of that year shall be set at zero for purposes of this
24 theoretical operation study.

1 E-8 DETERMINATION OF AVERAGE DRY YEAR CAPACITY RATINGS

2
3 Based on the results of the theoretical operation study
4 developed under Section E-7, the average dry year capacity
5 rating shall be established for each month. The average dry
6 year shall be based on the average of the five years of the
7 lowest annual generation as shown in the theoretical
8 operation study. Once such years of lowest annual
9 generation are identified, the monthly capacity rating is
10 determined for each month by averaging the capacity ratings
11 from each month of those years. The firm capacity shown in

12 Article 5 shall not exceed the lowest average dry year
13 monthly capacity ratings for the peak months on the PGandE
14 system, which are presently the months of June, July, and
15 August.

16
17 E-9 INFORMATION REQUIREMENTS

18
19 Seller shall provide the following information to
20 PGandE for its review:

21 (1) A summary of the average dry year capacity ratings
22 based on the theoretical operation study as provided in
23 Table E-4;

24 (2) A topographic project map which shows the location
25 of all aspects of the Facility and locations of stream
26 gauging stations used to determine natural flow data;

27 (3) A discussion of all major factors relevant to
28 project operation;

1 (4) A discussion of the methods and procedures used to
2 establish the natural flow data. This discussion shall be
3 in sufficient detail for PGandE to determine that the
4 methods are consistent with those outlined in Section E-6
5 and are consistent with generally accepted engineering
6 practices; and

7 (5) Upon specific written request by PGandE, Seller's
8 theoretical operation study.

9
10 E-10 ILLUSTRATIVE EXAMPLE
11

12 (1) Determine natural flows - These flows are
13 developed based on historic stream gauging records and are
14 compiled by month, for a long-term period (normally at least
15 50 years or more) which covers dry periods which
16 historically occurred in the 1920's and 30's and more
17 recently in 1976 and 77. In all but unusual situations this
18 will require application of hydrological engineering methods
19 to records that are available, primarily from the USGS
20 publication "Water Resources Data for California".
21

22 (2) Perform theoretical operation study - Using the
23 natural flow data compiled under (1) above a theoretical
24 operation study is prepared which determines, for each month
25 of each year, energy generation (kWh) and capacity rating
26 (kW). This study is performed based on the Facility's
27 design, operating capabilities, constraints, etc., and
28 should take into account all factors relevant to project

1 operation. Generally such a study is done by computer which
2 routes the natural flows through project features,
3 considering additions and withdrawals from storage, spill
4 past the project, releases for support of fish life, etc.,
5 to determine flow available for generation. Then the
6 generation and capacity amounts are computed based on
7 equipment performance, efficiencies, etc.

8
9 (3) Determine average dry year capacity ratings -
10 After the theoretical project operation study is complete
11 the five years in which the annual generation (kWh) would
12 have been the lowest are identified. Then for each month,
13 the capacity rating (kW) is averaged for the five years to
14 arrive at a monthly average capacity rating. The firm
15 capacity is then set by the Seller based on the monthly
16 average dry year capacity ratings and the minimum
17 performance requirements of this appendix. An example
18 project is shown in the attached completed Table E-4.

1 EXAMPLE

2
3 TABLE E-4

4 Summary of Theoretical Operation Study

5
6 Project: New Creek 1

7 Water Source: West Fork New Creek

8 Mode of Operation: Run of the river

9 Type of Turbine: Francis Design Flow: 100 cfs Design Head: 150 feet

10 Operating Characteristics¹:

11

	Flow (cfs)	Head (feet)		Output (kW)	Efficiency (%)	
		Gross	Net		Turbine	Generator
12 Normal Operation	100	160	150	1,120	90	98
13 Maximum Operation	110	160	148	1,150	85	98
14 Minimum Operation	30	160	155	290	75	98

15 Average Dry Year Operation - Based on the average of the following
16 lowest generation years: 1930, 1932, 1934, 1949, 1977.

17

Month	Energy Generation (kWh)	Capacity Output (kW)	Percent of Total Hours Operated
18 January	855,000	1,150	100
19 February	753,000	1,120	100
20 March	818,000	1,100	100
21 April	727,000	1,010	100
22 May	699,000	940	100
23 June	612,000	850	100
24 July	484,000	650	100
25 August	305,000	410	100
26 September	245,000	340	100
27 October	148,800	200	100
28 November	468,000	650	100
December	595,000	800	100

Maximum firm capacity: 410 kW

¹ If Facility has a variable head, operating curves should be provided.

1 E-11 MINIMUM DAMAGES

2
3 (a) In the event the firm capacity is derated or
4 Seller terminates this Agreement, the quantity by which the
5 firm capacity is derated or the firm capacity shall be used
6 to calculate the payments due PGandE in accordance with
7 Section (d).

8
9 (b) Seller shall be invoiced by PGandE for all amounts
10 due under this section. Payment shall be due within 30 days
11 of the date of invoice.

12
13 (c) If Seller does not make payments pursuant to
14 Section (b), PGandE shall have the right to offset any
15 amounts due it against any present or future payments due
16 Seller.

17
18 (d) Seller shall pay to PGandE:

19
20 (i) an amount equal to the difference
21 between (a) the firm capacity payments already
22 paid by PGandE, based on the original term of
23 agreement and (b) the total firm capacity payments
24 which PGandE would have paid based on the period
25 of Seller's actual performance using the adjusted
26 firm capacity price. Additionally, Seller shall
27 pay interest, compounded monthly from the date the
28 excess capacity payment was made until the date

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Seller repays PGandE, on all overpayments, at the published Federal Reserve Board three months' Prime Commercial Paper rate; plus

(ii) a sum equal to the amount by which the firm capacity is being terminated or derated times the difference between the current firm capacity price on the date of termination or deration for a term equal to the balance of the term of agreement and the firm capacity price, multiplied by the appropriate factor shown in Table E-5 below. In the event that the current firm capacity price is less than the firm capacity price, no payment under this subsection (ii) shall be due either Party.

TABLE E-5

<u>Amount of Firm Capacity Terminated or Derated</u>	<u>Factor</u>
1,000 kW or under	0.25
over 1,000 kW through 10,000 kW	0.75
over 10,000 kW through 25,000 kW	1.00
over 25,000 kW through 50,000 kW	3.00
over 50,000 kW through 100,000 kW	4.00
over 100,000 kW	5.00

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APPENDIX F
INTERCONNECTION

CONTENTS

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F-1 INTERCONNECTION TARIFFS

PGandE has filed revisions to Electric Rule 21 to comply with CPUC Decision No. 83-10-093 dated October 19, 1983. The applicable rule will be appended to this Agreement after the CPUC's final determination of PGandE's November 17, 1983 petition for modification of said decision with regard to the interconnection tariff, and the final form of Rule 21, pursuant to that determination, is approved and effective.

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F-3 INTERCONNECTION FACILITIES FOR WHICH SELLER IS
RESPONSIBLE

To be amended upon completion of interconnection studies.

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F-2 POINT OF INTERCONNECTION LOCATION SKETCH

To be amended upon completion of interconnection studies.