

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

PACIFIC GAS AND ELECTRIC COMPANY
STANDARD OFFER #4
POWER PURCHASE AGREEMENT
FOR
LONG-TERM ENERGY AND CAPACITY

MAY 1984

1
2 STANDARD OFFER #4:
3 LONG-TERM ENERGY AND CAPACITY
4 POWER PURCHASE AGREEMENT
5

6 CONTENTS
7

8	<u>Article</u>		<u>Page</u>
9	1	QUALIFYING STATUS	3
10	2	COMMITMENT OF PARTIES	4
11	3	PURCHASE OF POWER	5
12	4	ENERGY PRICE	6
13	5	CAPACITY ELECTION AND CAPACITY PRICE	10
14	6	LOSS ADJUSTMENT FACTORS	11
15	7	CURTAILMENT	11
16	8	RETROACTIVE APPLICATION OF CPUC ORDERS	12
17	9	NOTICES	12
18	10	DESIGNATED SWITCHING CENTER	13
19	11	TERMS AND CONDITIONS	13
20	12	TERM OF AGREEMENT	14

21
22 Appendix A: GENERAL TERMS AND CONDITIONS

23 Appendix B: ENERGY PAYMENT OPTIONS

24 Appendix C: CURTAILMENT OPTIONS

25 Appendix D: AS-DELIVERED CAPACITY

26 Appendix E: FIRM CAPACITY

27 Appendix F: INTERCONNECTION
28

1 LONG-TERM ENERGY AND CAPACITY
2 POWER PURCHASE AGREEMENT

3 BETWEEN

4 TRI-DAM POWER AUTHORITY

5 AND

6 PACIFIC GAS AND ELECTRIC COMPANY

7
8
9
10 TRI-DAM POWER AUTHORITY ("Seller"),
11 and PACIFIC GAS AND ELECTRIC COMPANY ("PGandE"), referred to
12 collectively as "Parties" and individually as "Party", agree
13 as follows:

14
15 ARTICLE 1 QUALIFYING STATUS

16
17 Seller warrants that, at the date of first power
18 deliveries from Seller's Facility¹ and during the term of
19 agreement, its Facility shall meet the qualifying facility
20 requirements established as of the effective date of this
21 Agreement by the Federal Energy Regulatory Commission's
22 rules (18 Code of Federal Regulations 292) implementing the
23 Public Utility Regulatory Policies Act of 1978 (16 U.S.C.A.
24 796, et seq.).

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

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

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 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 115 kv.

9
10 (b) Seller shall provide capacity and energy from its
11 16,200 kW
12 [Nameplate rating of generator(s)]
13 Facility located at Sand Bar Flat Dam, Middle Fork Stanislaus River,
14 in Tuolumne County.

15 (c) The scheduled operation date of the Facility is
16 January 1, 1987. At the end of each calendar quarter
17 [Date]
18 Seller shall give written notice to PGandE of any change in
19 the scheduled operation date.

20 (d) To avoid exceeding the physical limitations of the
21 interconnection facilities, Seller shall limit the
22 Facility's actual rate of delivery into the PGandE system to
23 16,200 kW. (@ 0.9 power factor).

24
25 (e) The primary energy source for the Facility is
26 falling water.

1 (f) If Seller does not begin construction of its
2 Facility by June 1985, PGandE may reallocate the
3 [Date]
4 existing capacity on PGandE's transmission and/or
5 distribution system which would have been used to
6 accommodate Seller's power deliveries to other uses. In the
7 event of such reallocation, Seller shall pay PGandE for the
8 cost of any upgrades or additions to PGandE's system
9 necessary to accommodate the output from the Facility. Such
10 additional facilities shall be installed, owned and
11 maintained in accordance with the applicable PGandE tariff.

12 (g) The transformer loss adjustment factor is 2%¹.

13
14 ARTICLE 4 ENERGY PRICE

15
16 PGandE shall pay Seller for its net energy output²
17 under the energy payment option checked below³:

18
19 Energy Payment Option 1 - Forecasted Energy Prices

20
21 During the fixed price period, Seller shall be

22
23 ¹ If Seller chooses to have meters placed on Seller's side of the
24 transformer, an estimated transformer loss adjustment factor of 2
25 percent, unless the Parties agree otherwise, will be applied. This
26 estimated transformer loss figure will be adjusted to a measurement
27 of actual transformer losses performed at Seller's request and
28 expense.

² Insert either "net energy output" or "surplus energy output" to
show the energy sale option selected by Seller.

³ Energy Payment Option 2 is not available to oil or gas-fired
cogenerators.

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

paid for energy delivered at prices equal to _____¹ percent of the prices set forth in Table B-1, Appendix B, plus _____² percent of PGandE's full short-run avoided operating costs.

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

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

X Energy Payment Option 2 - Levelized Energy Prices

During the fixed price period, Seller shall be

¹ Insert either 0, 20, 40, 60, 80, or 100, at Seller's option. If Seller's Facility is an oil or gas-fired cogeneration facility, either 0 or 20 must be inserted.
² Insert the difference between 100 and the percentage selected under footnote 1 above.

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

paid for energy delivered at prices equal to 100¹ percent of the levelized energy prices set forth in Table B-2, Appendix B for the year in which energy deliveries begin and term of agreement, plus 0² percent of PGandE's full short-run avoided operating costs. During the fixed price period, Seller shall be subject to the conditions and terms set forth in Appendix B, Energy Payment Option 2.

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

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

¹ Insert either 20, 40, 60, 80, or 100, at Seller's option.
² Insert the difference between 100 and the percentage selected under footnote 1 above.

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

_____ Energy Payment Option 3 - Incremental Energy Rate

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

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

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	_____

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

1 After _____, Seller shall be paid for
2 energy delivered at prices equal to PGandE's full
3 short-run avoided operating costs.

4
5 ARTICLE 5 CAPACITY ELECTION AND CAPACITY PRICE

6
7 Seller may elect to deliver either firm capacity or
8 as-delivered capacity, and Seller's election is indicated
9 below. PGandE's prices for firm capacity and as-delivered
10 capacity are derived from PGandE's full avoided costs as
11 approved by the CPUC.

12
13 X Firm capacity - 15,000 kW for 30 years from the
14 firm capacity availability date with payment determined
15 in accordance with Appendix E. Except for hydro-
16 electric facilities, PGandE shall pay Seller for
17 capacity delivered in excess of firm capacity on an
18 as-delivered capacity basis in accordance with
19 As-Delivered Capacity Payment Option _____ set forth
20 in Appendix D.

21
22 OR

23
24 _____ As-delivered capacity with payment determined in
25 accordance with As-Delivered Capacity Payment Option
26 _____ set forth in Appendix D.
27
28

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

ARTICLE 6 LOSS ADJUSTMENT FACTORS

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

Energy Loss Adjustment Factors shall be considered as unity for all energy payments related to Energy Payment Options 1 and 2 set forth in Appendix B for the entire fixed price period of this Agreement, except for the percentage of payments that Seller elected in Article 4 to have calculated based on PGandE's full short-run avoided operating costs. Energy Loss Adjustment Factors for all payments related to PGandE's full short-run avoided operating costs are subject to CPUC rulings for the entire term of agreement.

ARTICLE 7 CURTAILMENT

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

- Curtailment Option A - Hydro Spill and Negative Avoided Cost
- Curtailment Option B - Adjusted Price Period

The two options are described in Appendix C.

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

ARTICLE 8 RETROACTIVE APPLICATION OF CPUC ORDERS

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

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

To Seller: Tri-Dam Power Authority
Attention: Manager
Star Route, Box 1303
Sonora, CA 95370

ARTICLE 10 DESIGNATED SWITCHING CENTER

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

Angels Operating Center
(Name)
1168 Booster Way, Angels Camp, CA
(Location)
(209) 736-4622
(Phone number)

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 30 years¹ from the date firm capacity availability²; provided, however, that it shall terminate if energy deliveries do not start within five years of the execution date.

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.

[Signature] Approved as to Form
[Signature] 7/11/84
Attorney

TRI-DAM POWER AUTHORITY
(SELLER)

PACIFIC GAS AND ELECTRIC COMPANY

BY: *[Signature: Henry Van Groningen]*

BY: *[Signature: Nolan H. Daines]*

Henry Van Groningen
(Type Name)

Nolan H. Daines
(Type Name)

TITLE: President

Vice President -
TITLE: Planning and Research

DATE SIGNED: June 14, 1984

DATE SIGNED: July 12, 1984

ATTESTED TO:

BY: *[Signature: Donald B. Thompson]*

TITLE: Secretary

Donald B. Thompson

DATE SIGNED: June 14, 1984

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

² Insert "firm capacity availability date" if Seller has elected to deliver firm capacity or "date of initial energy deliveries" if Seller has elected to deliver as-delivered capacity.

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

APPENDIX A
GENERAL TERMS AND CONDITIONS

CONTENTS

<u>Section</u>		<u>Page</u>
A-1	DEFINITIONS	A-2
A-2	CONSTRUCTION	A-7
A-3	OPERATION	A-11
A-4	PAYMENT	A-14
A-5	ADJUSTMENTS OF PAYMENTS	A-15
A-6	ACCESS TO RECORDS AND PGandE DATA	A-15
A-7	INTERRUPTION OF DELIVERIES	A-16
A-8	FORCE MAJEURE	A-16
A-9	INDEMNITY	A-18
A-10	LIABILITY; DEDICATION	A-19
A-11	SEVERAL OBLIGATIONS	A-20
A-12	NON-WAIVER	A-20
A-13	ASSIGNMENT	A-20
A-14	CAPTIONS	A-21
A-15	CHOICE OF LAWS	A-21
A-16	GOVERNMENTAL JURISDICTION AND AUTHORIZATION	A-21
A-17	NOTICES	A-22
A-18	INSURANCE	A-22

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 Facility to the PGandE system including, but not limited
4 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 Facility, and (2) the Facility
8 from faults occurring on the PGandE system or on the systems
9 of others to which the PGandE system is directly or
10 indirectly connected. Interconnection facilities also
11 include any necessary additions and reinforcements by PGandE
12 to the PGandE system required as a result of the
13 interconnection of the Facility to the PGandE system.

14
15 Net energy output - The Facility's gross output in
16 kilowatt-hours less station use and transformation and
17 transmission losses to the point of delivery into the PGandE
18 system. Where PGandE agrees that it is impractical to
19 connect the station use on the generator side of the power
20 purchase meter, PGandE may, at its option, apply a station
21 load adjustment.

22
23 Prudent electrical practices - Those practices,
24 methods, and equipment, as changed from time to time, that
25 are commonly used in prudent electrical engineering and
26
27
28

1 operations to design and operate electric equipment lawfully
2 and with safety, dependability, efficiency, and economy.

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

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

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

25
26 Surplus energy output - The Facility's gross output,
27 in kilowatt-hours, less station use, and any other use by
28

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

Seller, and transformation and transmission losses to the point of delivery into the PGandE system.

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

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

A-2 CONSTRUCTION

A-2.1 Land Rights

Seller hereby grants to PGandE all necessary rights of way and easements, including adequate and continuing access rights on property of Seller, to install, operate, maintain, replace, and remove the special facilities. Seller agrees to execute such other grants, deeds, or documents as PGandE may require to enable it to record such rights of way and easements. If any part of PGandE's equipment is to be installed on property owned by other than Seller, Seller shall, at its own cost and expense, obtain from the owners thereof all necessary rights of way and easements, in a form satisfactory to PGandE, for the construction, operation, maintenance, and replacement of PGandE's equipment upon such property. If Seller is unable

1 to obtain such rights of way and easements, Seller shall
2 reimburse PGandE for all costs incurred by PGandE in
3 obtaining them. PGandE shall at all times have the right of
4 ingress to and egress from the Facility at all reasonable
5 hours for any purposes reasonably connected with this
6 Agreement or the exercise of any and all rights secured to
7 PGandE by law or its tariff schedules.

8
9 A-2.2 Design, Construction, Ownership, and Maintenance

10
11 (a) Seller shall design, construct, install, own,
12 operate, and maintain all interconnection facilities, except
13 special facilities, to the point of interconnection with the
14 PGandE system as required for PGandE to receive capacity and
15 energy from the Facility. The Facility and interconnection
16 facilities shall meet all requirements of applicable codes
17 and all standards of prudent electrical practices and shall
18 be maintained in a safe and prudent manner. A description
19 of the interconnection facilities for which Seller is solely
20 responsible is set forth in Appendix F, or if the
21 interconnection requirements have not yet been determined at
22 the time of the execution of this Agreement, the description
23 of such facilities will be appended to this Agreement at the
24 time such determination is made.

25
26 (b) Seller shall submit to PGandE the design and all
27 specifications for the interconnection facilities (except
28 special facilities) and, at PGandE's option, the Facility,

1 for review and written acceptance prior to their release for
2 construction purposes. PGandE shall notify Seller in
3 writing of the outcome of PGandE's review of the design and
4 specifications for Seller's interconnection facilities (and
5 the Facility, if requested) within 30 days of the receipt of
6 the design and all of the specifications for the
7 interconnection facilities (and the Facility, if requested).
8 Any flaws perceived by PGandE in the design and
9 specifications for the interconnection facilities (and the
10 Facility, if requested) will be described in PGandE's
11 written notification. PGandE's review and acceptance of the
12 design and specifications shall not be construed as
13 confirming or endorsing the design and specifications or as
14 warranting their safety, durability, or reliability. PGandE
15 shall not, by reason of such review or lack of review, be
16 responsible for strength, details of design, adequacy, or
17 capacity of equipment built pursuant to such design and
18 specifications, nor shall PGandE's acceptance be deemed to
19 be an endorsement of any of such equipment. Seller shall
20 change the interconnection facilities as may be reasonably
21 required by PGandE to meet changing requirements of the
22 PGandE system.

23
24 (c) In the event it is necessary for PGandE to
25 install interconnection facilities for the purposes of this
26 Agreement, they shall be installed as special facilities.
27
28

1 (d) Upon the request of Seller, PGandE shall provide
2 a binding estimate for the installation of interconnection
3 facilities by PGandE.
4

5 A-2.3 Meter Installation
6

7 (a) PGandE shall specify, provide, install, own,
8 operate, and maintain as special facilities all metering and
9 data processing equipment for the registration and recording
10 of energy and other related parameters which are required
11 for the reporting of data to PGandE and for computing the
12 payment due Seller from PGandE.
13

14 (b) Seller shall provide, construct, install, own,
15 and maintain at Seller's expense all that is required to
16 accommodate the metering and data processing equipment, such
17 as, but not limited to, metal-clad switchgear, switchboards,
18 cubicles, metering panels, enclosures, conduits, rack
19 structures, and equipment mounting pads.
20

21 (c) PGandE shall permit meters to be fixed on
22 PGandE's side of the transformer. If meters are placed on
23 PGandE's side of the transformer, service will be provided
24 at the available primary voltage and no transformer loss
25 adjustment will be made. If Seller chooses to have meters
26 placed on Seller's side of the transformer, an estimated
27 transformer loss adjustment factor of 2 percent, unless the
28 Parties agree otherwise, will be applied.

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

A-3 OPERATION

A-3.1 Inspection and Approval

Seller shall not operate the Facility in parallel with PGandE's system until an authorized PGandE representative has inspected the interconnection facilities, and PGandE has given written approval to begin parallel operation. Seller shall notify PGandE of the Facility's start-up date at least 45 days prior to such date. PGandE shall inspect the interconnection facilities within 30 days of the receipt of such notice. If parallel operation is not authorized by PGandE, PGandE shall notify Seller in writing within five days after inspection of the reason authorization for parallel operation was withheld.

A-3.2 Facility Operation and Maintenance

Seller shall operate and maintain its Facility according to prudent electrical practices, applicable laws, orders, rules, and tariffs and shall provide such reactive power support as may be reasonably required by PGandE to maintain system voltage level and power factor. Seller shall operate the Facility at the power factors or voltage levels prescribed by PGandE's system dispatcher or designated representative. If Seller fails to provide reactive power support, PGandE may do so at Seller's expense.

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

A-3.3 Point of Delivery

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

A-3.4 Operating Communications

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

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

(c) If Seller makes deliveries greater than one megawatt, Seller shall measure and register on a graphic recording device power in kW and voltage in kV at a location

1 within the Facility agreed to by both Parties.

2
3 (d) If Seller makes deliveries greater than one and
4 up to and including ten megawatts, Seller shall report to
5 the designated PGandE switching center, twice a day at
6 agreed upon times for the current day's operation, the
7 hourly readings in kW of capacity delivered and the energy
8 in kWh delivered since the last report.

9
10 (e) If Seller makes deliveries of greater than ten
11 megawatts, Seller shall telemeter the delivered capacity and
12 energy information, including real power in kW, reactive
13 power in kVAR, and energy in kWh to a switching center
14 selected by PGandE. PGandE may also require Seller to
15 telemeter transmission kW, kVAR, and kV data depending on
16 the number of generators and transmission configuration.
17 Seller shall provide and maintain the data circuits required
18 for telemetering. When telemetering is inoperative, Seller
19 shall report daily the capacity delivered each hour and the
20 energy delivered each day to the designated PGandE switching
21 center.

22
23 A-3.5 Meter Testing and Inspection

24
25 (a) All meters used to provide data for the
26 computation of the payments due Seller from PGandE shall be
27 sealed, and the seals shall be broken only by PGandE when
28 the meters are to be inspected, tested, or adjusted.

1 (b) PGandE shall inspect and test all meters upon
2 their installation and annually thereafter. At Seller's
3 request and expense, PGandE shall inspect or test a meter
4 more frequently. PGandE shall give reasonable notice to
5 Seller of the time when any inspection or test shall take
6 place, and Seller may have representatives present at the
7 test or inspection. If a meter is found to be inaccurate or
8 defective, PGandE shall adjust, repair, or replace it at its
9 expense in order to provide accurate metering.

10
11 A-3.6 Adjustments to Meter Measurements

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

24
25 A-4 PAYMENT

26
27 PGandE shall mail to Seller not later than 30 days
28 after the end of each monthly billing period (1) a statement

1 showing the energy and capacity delivered to PGandE during
2 on-peak, partial-peak, and off-peak periods during the
3 monthly billing period, (2) PGandE's computation of the
4 amount due Seller, and (3) PGandE's check in payment of said
5 amount. Except as provided in Section A-5, if within 30
6 days of receipt of the statement Seller does not make a
7 report in writing to PGandE of an error, Seller shall be
8 deemed to have waived any error in PGandE's statement,
9 computation, and payment, and they shall be considered
10 correct and complete.

11
12 A-5 ADJUSTMENTS OF PAYMENTS

13
14 (a) In the event adjustments to payments are
15 required as a result of inaccurate meters, PGandE shall use
16 the corrected measurements described in Section A-3.6 to
17 recompute the amount due from PGandE to Seller for the
18 capacity and energy delivered under this Agreement during
19 the period of inaccuracy.

20
21 (b) The additional payment to Seller or refund to
22 PGandE shall be made within 30 days of notification of the
23 owing Party of the amount due.

24
25 A-6 ACCESS TO RECORDS AND PGandE DATA

26
27 Each Party, after giving reasonable written notice to
28 the other Party, shall have the right of access to all

1 metering and related records including operations logs of
2 the Facility. Data filed by PGandE with the CPUC pursuant
3 to CPUC orders governing the purchase of power from
4 qualifying facilities shall be provided to Seller upon
5 request; provided that Seller shall reimburse PGandE for the
6 costs it incurs to respond to such request.

7
8 A-7 INTERRUPTION OF DELIVERIES

9
10 PGandE shall not be obligated to accept or pay for
11 and may require Seller to interrupt or reduce deliveries of
12 energy (1) when necessary in order to construct, install,
13 maintain, repair, replace, remove, investigate, or inspect
14 any of its equipment or any part of its system, or (2) if it
15 determines that interruption or reduction is necessary
16 because of PGandE system emergencies, forced outages, force
17 majeure, or compliance with prudent electrical practices;
18 provided that PGandE shall not interrupt deliveries pursuant
19 to this section in order to take advantage, or make
20 purchases, of less expensive energy elsewhere. Whenever
21 possible, PGandE shall give Seller reasonable notice of the
22 possibility that interruption or reduction of deliveries may
23 be required.

24
25 A-8 FORCE MAJEURE

26
27 (a) The term force majeure as used herein means
28 unforeseeable causes, other than forced outages, beyond the

1 reasonable control of and without the fault or negligence of
2 the Party claiming force majeure including, but not limited
3 to, acts of God, labor disputes, sudden actions of the
4 elements, actions by federal, state, and municipal agencies,
5 and actions of legislative, judicial, or regulatory agencies
6 which conflict with the terms of this Agreement.

7
8 (b) If either Party because of force majeure is
9 rendered wholly or partly unable to perform its obligations
10 under this Agreement, that Party shall be excused from
11 whatever performance is affected by the force majeure to the
12 extent so affected provided that:

13
14 (1) the non-performing Party, within two weeks
15 after the occurrence of the force majeure, gives the
16 other Party written notice describing the particulars
17 of the occurrence,

18 (2) the suspension of performance is of no
19 greater scope and of no longer duration than is
20 required by the force majeure,

21 (3) the non-performing Party uses its best
22 efforts to remedy its inability to perform (this
23 subsection shall not require the settlement of any
24 strike, walkout, lockout or other labor dispute on
25 terms which, in the sole judgment of the Party
26 involved in the dispute, are contrary to its
27 interest. It is understood and agreed that the
28 settlement of strikes, walkouts, lockouts or other

1 labor disputes shall be at the sole discretion of the
2 Party having the difficulty),

3 (4) when the non-performing Party is able to
4 resume performance of its obligations under this
5 Agreement, that Party shall give the other Party
6 written notice to that effect, and

7 (5) capacity payments during such periods of
8 force majeure on Seller's part shall be governed by
9 Section E-2(c), Appendix E.

10
11 (c) In the event a Party is unable to perform due to
12 legislative, judicial, or regulatory agency action, this
13 Agreement shall be renegotiated to comply with the legal
14 change which caused the non-performance.

15
16 A-9 INDEMNITY

17
18 Each Party as indemnitor shall save harmless and
19 indemnify the other Party and the directors, officers, and
20 employees of such other Party against and from any and all
21 loss and liability for injuries to persons including
22 employees of either Party, and property damages including
23 property of either Party resulting from or arising out of
24 (1) the engineering, design, construction, maintenance, or
25 operation of, or (2) the making of replacements, additions,
26 or betterments to, the indemnitor's facilities. This
27 indemnity and save harmless provision shall apply
28 notwithstanding the active or passive negligence of the

1 indemnatee. Neither Party shall be indemnified hereunder
2 for its liability or loss resulting from its sole negligence
3 or willful misconduct. The indemnitor shall, on the other
4 Party's request, defend any suit asserting a claim covered
5 by this indemnity and shall pay all costs, including
6 reasonable attorney fees, that may be incurred by the other
7 Party in enforcing this indemnity.

8
9 A-10 LIABILITY; DEDICATION

10
11 (a) Nothing in this Agreement shall create any duty
12 to, any standard of care with reference to, or any liability
13 to any person not a Party to it. Neither Party shall be
14 liable to the other Party for consequential damages.

15
16 (b) Each Party shall be responsible for protecting
17 its facilities from possible damage by reason of electrical
18 disturbances or faults caused by the operation, faulty
19 operation, or nonoperation of the other Party's facilities,
20 and such other Party shall not be liable for any such
21 damages so caused.

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

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

public utility.

A-11 SEVERAL OBLIGATIONS

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

A-12 NON-WAIVER

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

A-13 ASSIGNMENT

Neither Party shall voluntarily assign its rights nor delegate its duties under this Agreement, or any part of such rights or duties, without the written consent of the other Party, except in connection with the sale or merger of a substantial portion of its properties. Any such

1 assignment or delegation made without such written consent
2 shall be null and void. Consent for assignment shall not be
3 withheld unreasonably. Such assignment shall include,
4 unless otherwise specified therein, all of Seller's rights
5 to any refunds which might become due under this Agreement.

6

7 A-14 CAPTIONS

8

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

13

14 A-15 CHOICE OF LAWS

15

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

20

21 A-16 GOVERNMENTAL JURISDICTION AND AUTHORIZATION

22

23 Seller shall obtain any governmental authorizations
24 and permits required for the construction and operation of
25 the Facility. Seller shall reimburse PGandE for any and all
26 losses, damages, claims, penalties, or liability it incurs
27 as a result of Seller's failure to obtain or maintain such
28 authorizations and permits.

1 A-17 NOTICES

2
3 Any notice, demand, or request required or permitted
4 to be given by either Party to the other, and any instrument
5 required or permitted to be tendered or delivered by either
6 Party to the other, shall be in writing (except as provided
7 in Section E-3) and so given, tendered, or delivered, as the
8 case may be, by depositing the same in any United States
9 Post Office with postage prepaid for transmission by
10 certified mail, return receipt requested, addressed to the
11 Party, or personally delivered to the Party, at the address
12 in Article 9 of this Agreement. Changes in such designation
13 may be made by notice similarly given.

14
15 A-18 INSURANCE

16
17 A-18.1 General Liability Coverage

18
19 (a) Seller shall maintain during the performance
20 hereof, General Liability Insurance¹ of not less than
21 \$1,000,000 if the Facility is over 100 kW, \$500,000 if the
22 Facility is over 20 kW to 100 kW, and \$100,000 if the
23 Facility is 20 kW or below of combined single limit or
24 equivalent for bodily injury, personal injury, and property
25 damage as the result of any one occurrence.

26
27 ¹ Governmental agencies which have an established record of
28 self-insurance may provide the required coverage through
self-insurance.

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

6
7 (c) Such insurance, by endorsement to the
8 policy(ies), shall include PGandE as an additional insured
9 if the Facility is over 100 kW insofar as work performed by
10 Seller for PGandE is concerned, shall contain a severability
11 of interest clause, shall provide that PGandE shall not by
12 reason of its inclusion as an additional insured incur
13 liability to the insurance carrier for payment of premium
14 for such insurance, and shall provide for 30-days' written
15 notice to PGandE prior to cancellation, termination,
16 alteration, or material change of such insurance.

17
18 A-18.2 Additional Insurance Provisions

19
20 (a) Evidence of coverage described above in Section
21 A-18.1 shall state that coverage provided is primary and is
22 not excess to or contributing with any insurance or
23 self-insurance maintained by PGandE.

24
25 (b) PGandE shall have the right to inspect or obtain
26 a copy of the original policy(ies) of insurance.

27
28

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

(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.

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

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.

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

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 in which energy deliveries begin and term of
7 agreement, multiplied by the percentage Seller has specified
8 in Article 4. If Seller has selected Curtailment Option B
9 in Article 7, the levelized off-peak hours' energy prices
10 listed in Table B-2 shall be adjusted upward by 7.7% for
11 Period A and 9.6% for Period B. The discount specified in
12 (c)(vi) below, if applicable, will be applied to the energy
13 payments during the fixed price period.

14
15 During the fixed price period, Seller shall be subject
16 to the following conditions and terms:

17
18 (a) Minimum Damages

19
20 The Parties agree that the levelized energy prices
21 which PGandE pays Seller for the energy which Seller
22 delivers to PGandE is based on the agreed value to
23 PGandE of Seller's energy deliveries during the entire
24 fixed price period. In the event PGandE does not
25 receive such full performance by reason of a
26 termination, Seller shall pay PGandE an amount based on
27 the difference between the net present values, at the
28

1 time of termination, of the payments Seller would
 2 receive at the forecasted energy prices in Table B-1
 3 and the payments Seller would receive at the levelized
 4 energy prices, for the remaining years of the fixed
 5 price period. This amount shall be calculated by
 6 assuming that Seller continued to generate for the
 7 remaining years of the fixed price period at a level
 8 equal to the average annual energy generation during
 9 the period of performance, and by applying the weighted
 10 annual average levelized price applicable to Seller's
 11 Facility and the weighted annual average forecasted
 12 energy prices in Table B-1 for the remaining years of
 13 the fixed price period. The following formula shall be
 14 used to make this calculation:

$$15 \quad P = \sum_{n=1}^Y \frac{(F_n)(A)(W)}{(1.15)^n} - \sum_{n=1}^Y \frac{(L)(A)(W)}{(1.15)^n}$$

16 where:

17 P = amount due PGandE.

18 Y = number of years remaining in the fixed price
 19 period.

20 F_n = weighted annual average forecasted energy
 21 price in the n^{th} year after the breach,
 22 failure to perform, or expiration of
 23 security, as shown in Table B-1 for the
 24 corresponding calendar year.
 25
 26
 27
 28

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

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

A = average annual energy generation by Seller 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 the Facility in accordance with prudent electrical practices in order to maximize the likelihood that the Facility'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 Facility'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 Facility'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 the first part of the fixed price period, PGandE may, at its discretion (taking into consideration events occurring during such year or series of years such as curtailment by PGandE, Seller's choice not to operate

1 during adjusted price periods, or scheduled maintenance
2 including major overhauls, and the probability that
3 Seller's future performance will be adequate), either
4 request payment from Seller or immediately draw on the
5 security posted, up to the amount equal to
6 $P \times \frac{A-B}{A}$, where:

7
8 P and A are as defined in Section (a) above.

9 B = Seller's average annual energy generation
10 during the year or series of years in which
11 the 70% performance requirement was not met.

12
13 PGandE shall not request payment from Seller or draw on
14 the security posted if the Facility's output during the
15 last part of the fixed price period falls below 70% of
16 the average annual energy generation during the first
17 part of the fixed price period solely because of force
18 majeure as defined in Section A-8, Appendix A or a lack
19 of or limited availability of the primary energy
20 resource of the Facility, if such energy resource is
21 wind, water, or sunlight.

22
23 (c) Security

24
25 (1) As security for amounts which Seller may be
26 obligated to pay PGandE pursuant to Sections (a)
27 and (b) above, Seller shall provide and maintain
28 one or more of the following in an amount as

1 described in Section (c)(2) below.

2
3 (i) An irrevocable bank letter of credit
4 delivered to and in favor of PGandE with
5 terms acceptable to PGandE.

6
7 (ii) A payment bond providing for payment to
8 PGandE in the event of any failure to meet
9 the performance requirements set forth in
10 Section (b) above or breach of this Agreement
11 by Seller. Such bond shall be issued by a
12 surety company acceptable to PGandE and shall
13 have terms acceptable to PGandE.

14
15 (iii) Fully paid up, noncancellable Project Failure
16 Insurance made payable to PGandE with terms
17 of such policy(ies) acceptable to PGandE.

18
19 (iv) A performance bond providing for payment to
20 PGandE in the event of any failure to meet
21 the performance requirements set forth in
22 Section (b) above or breach of this Agreement
23 by Seller. Such bond shall be issued by a
24 surety company acceptable to PGandE and shall
25 have terms acceptable to PGandE.

26
27 (v) A corporate guarantee of payment to PGandE
28 which PGandE deems, in its sole discretion,

1 to provide at least the same quality of
2 security as subsections (i) through (iv)
3 above.

4
5 (vi) Other forms of security which PGandE does not
6 deem to be equivalent security to those
7 listed in subsections (i) through (v) above,
8 and which PGandE, in its sole discretion,
9 deems adequate. Such other forms of security
10 may include, for example, a corporate
11 guarantee or a lien, mortgage or deed of
12 trust on the Facility or land upon which it
13 is located. A 1.5% discount will be applied
14 against the levelized energy price portion of
15 PGandE's payments to Seller during the fixed
16 price period if this type of security is
17 provided.

18
19 (2) (i) Commencing 90 days prior to the scheduled
20 operation date and continuing until
21 December 1 of the following calendar year,
22 security as described in Section (c)(1) above
23 shall be in place in an amount calculated in
24 accordance with the formula set forth in
25 Section (a) above, assuming Seller delivered
26 energy through the end of the following
27 calendar year and then terminated this
28 Agreement. For purposes of determining the

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

required amount of security, it shall be assumed that Seller's deliveries through the end of the following calendar year would equal $R \times C \times H$, where:

R = nameplate rating, in kW, of the Facility.

C = estimated capacity factor of the Facility, which shall be established by mutual agreement of the Parties at the time of execution of this Agreement.

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

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

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

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

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

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

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

The arbitration hearing shall take place in 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

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

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 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 15-16 years:

Year in
Which
Energy
Deliv-
eries
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	5.76	5.50	5.31	5.85	5.71	5.58	5.57
1984	6.06	5.78	5.58	6.14	6.00	5.86	5.85
1985	6.41	6.11	5.91	6.50	6.35	6.20	6.19
1986	6.85	6.54	6.32	6.95	6.79	6.63	6.62
1987	7.37	7.03	6.79	7.47	7.30	7.13	7.12
1988	7.96	7.60	7.34	8.07	7.89	7.70	7.69

For a term of agreement of 17-19 years:

Year in
Which
Energy
Deliv-
eries
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	5.90	5.63	5.44	5.98	5.84	5.71	5.70
1984	6.23	5.95	5.74	6.32	6.18	6.03	6.02
1985	6.60	6.30	6.08	6.69	6.53	6.38	6.37
1986	7.06	6.73	6.51	7.16	7.00	6.83	6.82
1987	7.60	7.25	7.00	7.70	7.53	7.35	7.34
1988	8.21	7.83	7.57	8.32	8.13	7.94	7.93

For a term of agreement of 20-30 years:

Year in
Which
Energy
Deliv-
eries
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.

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

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.

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

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.

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

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 Incremental Energy Rate Bound, Btu/kWh [column (a) minus column(b)]
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	_____	_____	_____

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

TABLE B-3 (continued)

Curtailement 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	_____	_____	_____

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

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 Day, and Christmas Day, as specified in Public Law 90-363 (5 U.S.C.A. Section 6103(a)).

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 B-5
ENERGY PRICES

Energy Prices Effective May 1 - July 31, 1984

The energy purchase price calculations which will apply to energy deliveries determined from meter readings taken during May, June and July 1984 are as follows:

Time Period	(a) Incremental Energy Rate ¹ (Btu/kWh)	(b) Cost of Energy ² (\$/10 ⁶ Btu)	(c) Revenue Requirement for Cash Working Capital ³ (\$/kWh)	(d) Energy Purchase Price ⁴ (d) = [(a) x (b)] + (c) (\$/kWh)
May 1 - July 31 (Period A)				
Time of Delivery Basis:				
On-Peak	13,674	5.4152	0.00041	0.07446
Partial-Peak	12,665	5.4152	0.00038	0.06896
Off-Peak	10,119	5.4152	0.00033	0.05513
Seasonal Average (Period A)	11,538	5.4152	0.00036	0.06284

- ¹ Incremental energy rates (Btu/kWh) for Seasonal Period A are derived from the marginal energy costs (including variable operating and maintenance expense) adopted by the CPUC in Decision No. 83-12-068 (page 339). They are based upon natural gas as the incremental fuel and weighted average hydroelectric power conditions.
- ² Cost of natural gas under PGandE Gas Schedule No. G-55 effective April 18, 1984 per Advice No. 1261-G.
- 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 CPUC 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 C.

B-6

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

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

APPENDIX C
CURTAILMENT OPTIONS

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

CURTAILMENT OPTION A - HYDRO SPILL AND
NEGATIVE AVOIDED COST

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

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

where:

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

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

S = Potential energy, in kWh, from PGandE hydro facilities which will be spilled if all AQF is delivered to PGandE.

PP = Prices published by PGandE for purchases during other than hydro spill conditions.

PGandE shall give Seller notice of general periods when hydro spill conditions are anticipated, and shall give Seller as much advance notice as practical of any specific hydro spill period and the hydro savings price which will be applicable during such period.

(b) PGandE shall not be obligated to accept or pay for and may require Seller with a Facility with a nameplate rating of one megawatt or greater to interrupt or reduce deliveries of energy during periods when PGandE would incur negative avoided costs (as defined by the CPUC) due to continued acceptance of energy deliveries under this Agreement. Whenever possible, PGandE shall give Seller reasonable notice of the possibility that interruption or reduction of deliveries may be required.

(c) Before interrupting or reducing deliveries under subsection (b), above, and before invoking hydro savings prices under subsection (a), above, PGandE shall take reasonable steps to make economy sales of the surplus energy giving rise to the condition. If such economy sales are made, while the surplus energy condition exists Seller shall

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

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

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 AS-DELIVERED CAPACITY PAYMENT OPTION 1

11
12 PGandE shall pay Seller for as-delivered capacity at
13 prices authorized from time to time by the CPUC. The
14 as-delivered capacity prices in effect on the date of
15 execution are calculated as shown in Exhibit D-1.

16
17 AS-DELIVERED CAPACITY PAYMENT OPTION 2

18
19 During the fixed price period, the as-delivered
20 capacity prices will be calculated in accordance with
21 Exhibit D-1 and the forecasted shortage costs in Table D-2.

22
23 For the remaining years of the term of agreement,
24 PGandE shall pay Seller for as-delivered capacity at the

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

higher of:

- (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.

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

EXHIBIT D-1

1
2
3 The as-delivered capacity price (in cents per kW-hr)
4 for power delivered by the Facility is the product of three
5 factors:

6
7 (a) The shortage cost in each year the Facility
8 is operating. Currently, this shortage cost is \$156
9 per kW-year.

10
11 (b) A capacity loss adjustment factor which
12 provides for the effect of the deliveries on PGandE's
13 transmission and distribution losses based on the
14 Seller's interconnection voltage level. The applicable
15 capacity loss adjustment factors for non-remote¹
16 Facilities are presented in Table D-1(a). Capacity
17 loss adjustment factors for remote Facilities shall be
18 calculated individually.

19
20 (c) An allocation factor which accounts for the
21 different values of as-delivered capacity in different
22 time periods and converts dollars per kW-year to cents
23 per kWh. The current allocation factors are presented
24 in Table D-1(b). The time periods to which they apply
25 are shown in Table B-4, Appendix B. The allocation
26 factors are subject to change from time to time.

27
28 ¹ As defined by the CPUC.

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

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>On-Peak</u> <u>(¢-yr/\$-hr)</u>	<u>Partial-Peak</u> <u>(¢-yr/\$-hr)</u>	<u>Off-Peak</u> <u>(¢-yr/\$-hr)</u>
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:

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

The allocation factors were prescribed by the CPUC in Decision No. 83-12-068 and are subject to change from time to time.

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

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

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

APPENDIX E
FIRM CAPACITY
CONTENTS

<u>Section</u>		<u>Page</u>
E-1	GENERAL	E-2
E-2	PERFORMANCE REQUIREMENTS	E-2
E-3	SCHEDULED MAINTENANCE	E-4
E-4	ADJUSTMENTS TO FIRM CAPACITY	E-5
E-5	FIRM CAPACITY PAYMENTS	E-6
E-6	DETERMINATION OF NATURAL FLOW DATA	E-12
E-7	THEORETICAL OPERATION STUDY	E-13
E-8	DETERMINATION OF AVERAGE DRY YEAR CAPACITY RATINGS	E-15
E-9	INFORMATION REQUIREMENTS	E-15
E-10	ILLUSTRATIVE EXAMPLE	E-16
E-11	MINIMUM DAMAGES	E-19

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 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
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
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 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
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.
28

1 (e) If Seller is prevented from meeting the
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 performance requirements, PGandE may derate the
11 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 performance requirements of Section E-2.

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

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 These allocation factors were prescribed by the CPUC in Decision No. 83-12-068. 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
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28

The MDC is determined in the following manner:

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

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

Where:

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

C = Firm capacity in kilowatts.

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

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

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

$$MCF = P \times (1.0 - \frac{M}{D})$$

Where:

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

D = The number of hours in the month.

* 0.8 reflects a 20% allowance for forced outage.

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

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

9
10
11 TABLE E-1

12
13 If the Facility is non-remote¹ the firm capacity loss
14 adjustment factors are as follows:

15

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

19
20

21 If the Facility is remote the firm capacity loss adjustment
22 factor is _____².

23
24 _____
25 ¹ As defined by the CPUC.
26 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)

Firm Capacity Avail-ability Date

Number of Years of Firm Capacity Delivery

<u>(Year)</u>	<u>1</u>	<u>2</u>	<u>3</u>	<u>4</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>
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

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

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:

$$\text{FIRM CAPACITY FACTOR (\%)} = \frac{F}{(N-W) \times Q} \times 100$$

Where:

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

N = Total on-peak hours during the month.

W = Total on-peak hours during the peak month that the Facility is out of service on scheduled maintenance.

Q = Firm capacity in kilowatts.

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

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

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

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

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

E-6 DETERMINATION OF NATURAL FLOW DATA

Natural flow data shall be based on a period of record of at least 50 years and which includes historic critically

1 dry periods. In the event Seller demonstrates that a
2 natural flow data base of at least 50 years would be
3 unreasonably burdensome, PGandE shall accept a shorter
4 period of record with a corresponding reduction in the
5 averaging basis set forth in Section E-8. Seller shall
6 determine the natural flow data by month by using one of the
7 following methods:

8
9 Method 1

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

15
16 Method 2

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

24
25 E-7 THEORETICAL OPERATION STUDY

26
27 Based on the monthly natural flow data developed under
28 Section E-6 a theoretical operation study shall be prepared

1 by Seller. Such a study shall identify the monthly capacity
2 rating in kW and the monthly energy production in kWh for
3 each month of each year. The study shall take into account
4 all relevant operating constraints, limitations, and
5 requirements including but not limited to --

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

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

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

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

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

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

E-8 DETERMINATION OF AVERAGE DRY YEAR CAPACITY RATINGS

Based on the results of the theoretical operation study developed under Section E-7, the average dry year capacity rating shall be established for each month. The average dry year shall be based on the average of the five years of the lowest annual generation as shown in the theoretical operation study. Once such years of lowest annual generation are identified, the monthly capacity rating is determined for each month by averaging the capacity ratings from each month of those years. The firm capacity shown in Article 5 shall not exceed the lowest average dry year monthly capacity ratings for the peak months on the PGandE system, which are presently the months of June, July, and August.

E-9 INFORMATION REQUIREMENTS

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

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

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

(3) A discussion of all major factors relevant to 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 performance
17 requirements of this appendix. An example project is shown
18 in the attached completed Table E-4.

EXAMPLE
TABLE E-4

Summary of Theoretical Operation Study

Project: New Creek 1

Water Source: West Fork New Creek

Mode of Operation: Run of the river

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

Operating Characteristics¹:

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

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

Month	Energy Generation (kWh)	Capacity Output (kW)	Percent of Total Hours Operated
January	855,000	1,150	100
February	753,000	1,120	100
March	818,000	1,100	100
April	727,000	1,010	100
May	699,000	940	100
June	612,000	850	100
July	484,000	650	100
August	305,000	410	100
September	245,000	340	100
October	148,800	200	100
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

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

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

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

APPENDIX F
INTERCONNECTION
CONTENTS

<u>Section</u>		<u>Page</u>
F-1	INTERCONNECTION TARIFFS	F-2
F-2	POINT OF DELIVERY LOCATION SKETCH	F-3
F-3	INTERCONNECTION FACILITIES FOR WHICH SELLER IS RESPONSIBLE	F-4

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

F-1 INTERCONNECTION TARIFFS

(The applicable tariffs in effect at the time of execution of this Agreement shall be attached.)

RULE NO. 21 -- NONUTILITY-OWNED PARALLEL GENERATION

This describes the minimum operation, metering and interconnection requirements for any generating source or sources paralleled with the Utility's electric system. Such source or sources may include, but are not limited to, hydroelectric generators, wind-turbine generators, steam or gas driven turbine generators and photovoltaic systems.

A. GENERAL

1. The type of interconnection and voltage available at any location and the Utility's specific interconnection requirements shall be determined by inquiry at the Utility's local office.
2. The Utility's distribution and transmission lines which are an integral part of its overall system are distinguished by the voltages at which they are operated. Distribution lines are operated at voltages below 60 kv and transmission lines are operated at voltages 60 kv and higher.
3. The Power Producer (Producer) shall ascertain and be responsible for compliance with the requirements of all governmental authorities having jurisdiction.
4. The Producer shall sign the Utility's written form of power purchase agreement or parallel operation agreement before connecting or operating a generating source in parallel with the Utility's system.
5. The Producer shall be fully responsible for the costs of designing, installing, owning, operating and maintaining all interconnection facilities defined in Section B.1.
6. The Producer shall submit to the Utility, for the Utility's review and written acceptance, equipment specifications and detailed plans for the installation of all interconnection facilities to be furnished by the Producer prior to their purchase or installation. The Utility's review and written acceptance of the Producer's equipment specifications and detailed plans shall not be construed as confirming or endorsing the Producer's design or as warranting the equipment's safety, durability or reliability. The Utility shall not, by reason of such review or lack of review, be responsible for strength, details of design adequacy, or capacity of equipment built pursuant to such specifications, nor shall the Utility acceptance be deemed an endorsement of any such equipment.
7. No generating source shall be operated in parallel with the Utility's system until the interconnection facilities have been inspected by the Utility and the Utility has provided written approval to the Producer.
8. Only duly authorized employees of the Utility are allowed to connect Producer-installed interconnection facilities to, or disconnect the same from, the Utility's overhead or underground lines.

B. INTERCONNECTION FACILITIES

1. GENERAL: Interconnection facilities are all means required, and apparatus installed, to interconnect the Producer's generation with the Utility's system. Where the Producer desires to sell power to the Utility, interconnection facilities are also all means required, and apparatus installed, to enable the Utility to receive power deliveries from the Producer. Interconnection facilities may include, but are not limited to:
 - a. connection, transformation, switching, metering, communications, control, protective and safety equipment; and
 - b. any necessary additions to and reinforcements of the Utility's system by the Utility.
2. METERING
 - a. A Producer desiring to sell power to the Utility shall provide, install, own and maintain all facilities necessary to accommodate metering equipment specified by the Utility. Such metering equipment may include meters, telemetering (applicable where deliveries to the Utility exceed 10 MW) and other recording and communications devices as may be required for the reporting of power delivery data to the Utility. Except as provided for in Section B.2.b following, the Utility shall provide, install, own and maintain all metering equipment as special facilities in accordance with Section F.

(Continued)

Advice Letter No. 1025-E
Decision No. 83-10-093

Issued By
W. M. Gallavan
Vice-President
Rates and Economic Analysis

Date Filed May 21, 1984
Effective June 20, 1984
Resolution No. _____

RULE NO. 21 -- NONUTILITY-OWNED PARALLEL GENERATION (Cont'd.)

B. INTERCONNECTION FACILITIES (continued)

2. METERING

- b. The Producer may at its option provide, install, own and maintain current and potential transformers rated above 600 volts and a non-revenue type graphic recorder where applicable. Such metering equipment, its installation and maintenance shall all be in conformance with the Utility's specifications.
- c. The Utility's meters shall be equipped with detents to prevent reverse registration so that power deliveries to and from the Producer's equipment can be separately recorded.

3. CONTROL, PROTECTION AND SAFETY EQUIPMENT

- a. GENERAL: The Utility has established functional requirements essential for safe and reliable parallel operation of the Producer's generation. These requirements provide for control, protective and safety equipment to:
 - (1) sense and properly react to failure and malfunction on the Utility's system;
 - (2) assist the Utility in maintaining its system integrity and reliability; and
 - (3) protect the safety of the public and the Utility's personnel.
- b. Listed below are the various devices and features generally required by the Utility as a prerequisite to parallel operation of the Producer's generation:

CONTROL, PROTECTION AND SAFETY EQUIPMENT GENERAL REQUIREMENTS¹

Device or Feature	GENERATOR SIZE					
	10 kw or Less	11 kw to 40 kw	41 kw to 100 kw	101 kw to 400 kw	401 kw to 1,000 kw	Over 1,000 kw
Dedicated Transformer ²	-	X	X	X	X	X
Interconnection Disconnect Device	X	X	X	X	X	X
Generator Circuit Breaker	X	X	X	X	X	X
Over-voltage Protection	X	X	X	X	X	X
Under-voltage Protection	-	-	X	X	X	X
Under/Over-frequency Protection	X	X	X	X	X	X
Ground Fault Protection	-	-	X	X	X	X
Over-current Relay w/Voltage Restraint	-	-	-	-	X	X
Synchronizing	Manual	Manual	Manual	Manual	Manual	Automatic
Power Factor or Voltage Regulation			X	X	X	X

- c. DISCONNECT DEVICE: The Producer shall provide, install, own and maintain the interconnection disconnect device required by Section B.3.b at a location readily accessible to the Utility. Such device shall normally be located near the Utility's meter or meters for sole operation by the Utility. The interconnection disconnect device and its precise location shall be specified by the Utility. At the Producer's option and request, the Utility will provide, install, own and maintain the disconnect device on the Utility's system as special facilities in accordance with Section F.

¹Detailed requirements are specified in the Utility's current operating, metering and equipment protection publications, as revised from time to time by the Utility and available to the Producer upon request. For a particular generator application, the Utility will furnish its specific control, protective and safety requirements to the Producer after the exact location of the generator has been agreed upon and the interconnection voltage level has been established.

²This is a transformer interconnected with no other Producers and serving no other Utility customers. Although the dedicated transformer is not a requirement for generators rated 10 kw or less, its installation is recommended by the Utility.

³This is a requirement for synchronous and other types of generators with stand-alone capability. For all such generators, the Utility will also require the installation of "reclose blocking" features on its system to block certain operations of the Utility's automatic line restoration equipment.

(Continued)

RULE NO. 21 -- NONUTILITY-OWNED PARALLEL GENERATION (Cont'd.)

B. INTERCONNECTION FACILITIES (continued)

4. UTILITY SYSTEM ADDITIONS AND REINFORCEMENTS

- a. Except as provided for in Section B.5, all additions to and reinforcements of the Utility's system necessary to interconnect with and receive power deliveries from the Producer's generation will be provided, installed, owned and maintained by the Utility as special facilities in accordance with Section F. Such additions and reinforcements may include the installation of a Utility distribution or transmission line extension or the increase of capacity in the Utility's existing distribution or transmission lines. Where the Utility specifies that any such additions or reinforcements shall include an increment of additional capacity for the Utility's use in furnishing service to its customers, the costs of providing, installing, owning and maintaining such additional capacity shall be borne by the Utility and/or its customers in accordance with the Utility's applicable tariffs on file with and authorized by the California Public Utilities Commission (Commission).
- b. The Producer shall advance to the Utility its estimated costs of performing a preliminary or detailed engineering study as may be reasonably required to identify any Producer related Utility system additions and reinforcements. Where such preliminary or detailed engineering study involves analysis of the Utility's transmission lines (60 kv and higher), the Utility shall complete its study within twelve calendar months of receiving all necessary plans and specifications from the Producer.

5. PRODUCER-INSTALLED UTILITY-OWNED LINE EXTENSIONS: The Producer may at its option provide and install an extension of the Utility's distribution or transmission lines where required to complete the Producer's interconnection with the Utility. Such extension shall be installed by contractors approved by the Utility and in accordance with its design and specifications. The Producer shall pay the Utility its estimated costs of design, administration and inspection as may be reasonably required to assure such extension is installed in compliance with the Utility's requirements. Upon final inspection and acceptance by the Utility, the Producer shall transfer ownership of the line extension to the Utility where thereafter it shall be owned and maintained as special facilities in accordance with Section F. This provision does not preclude the Producer from installing, owning and maintaining a distribution or transmission line extension as part of its other Producer-owned interconnection facilities.

6. COSTS OF FUTURE UTILITY SYSTEM ALTERATIONS: The Producer shall be responsible for the costs of only those future Utility system alterations which are directly related to the Producer's presence or necessary to maintain the Producer's interconnection in accordance with the Utility's applicable operating, metering and equipment publication in effect when the Producer and the Utility entered into a written form of power purchase agreement. Alterations made at the Producer's expense shall specifically exclude increases of existing line capacity necessary to accommodate the other Producers or Utility customers. Such alterations may, however, include relocation or undergrounding of the Utility's distribution or transmission lines as may be ordered by a governmental authority having jurisdiction.

7. ALLOCATION OF THE UTILITY'S EXISTING LINE CAPACITY: For two or more Producers seeking to use an existing line, a first come, first served approach shall be used. The first Producer to request an interconnection shall have the right to use the existing line and shall incur no obligation for costs associated with future line upgrades needed to accommodate other Producers or customers. The Utility's power purchase agreement shall specify the date by which the Producer must begin construction. If that date passes and construction has not commenced, the Producer shall be given 30 days to correct the deficiency after receiving a reminder from the Utility that the construction start-up date has passed. If construction has not commenced after the 30-day corrective period, the Utility shall have the right to withdraw its commitment to the first Producer and offer the right to interconnect on the existing line to the next Producer in order. If two Producers establish the right of first-in-time simultaneously, the two Producers shall share the costs of any additional line upgrade necessary to facilitate their cumulative capacity requirements. Costs shall be shared based on the relative proportion of capacity each Producer will add to the line.

(Continued)

Advice Letter No. 1025-E
Decision No. 83-10-093

Issued By
W. M. Gallavan
Vice-President

Date Filed May 21, 1984
Effective June 20, 1984
Resolution No. _____

RULE NO. 21 -- NONUTILITY-OWNED PARALLEL GENERATION (Cont'd.)

- C. **ELECTRIC SERVICE FROM THE UTILITY:** If the Producer requires regular, supplemental, interruptible or standby service from the Utility, the Producer shall enter into separate contractual arrangements with the Utility in accordance with the Utility's applicable electric tariffs on file with and authorized by the Commission.
- D. **OPERATION**
1. **PREPARALLEL INSPECTION:** In accordance with Section A.7, the Utility will inspect the Producer's interconnection facilities prior to providing it with written authorization to commence parallel operation. Such inspection shall determine whether or not the Producer has installed certain control, protective and safety equipment to the Utility's specifications. Where the Producer's generation has a rated output in excess of 100 kw, the Producer shall pay the Utility its estimated costs of performing the inspection.
 2. **JURISDICTION OF THE UTILITY'S SYSTEM DISPATCHER:** The Producer's generation while operating in parallel with the Utility's system is at all times under the jurisdiction of the Utility's system dispatcher. The system dispatcher shall normally delegate such control to the Utility's designated switching center.
 3. **COMMUNICATIONS:** The Producer shall maintain telephone service from the local telephone company to the location of the Producer's generation. In the event such location is remote or unattended, telephone service shall be provided to the nearest building normally occupied by the Producer's generator operator. The Utility and the Producer shall maintain operating communications through the Utility's designated switching center.
 4. **GENERATOR LOG:** The Producer shall at all times keep and maintain a detailed generator operations log. Such log shall include, but not be limited to, information on unit availability, maintenance outages, circuit breaker trip operations requiring manual reset and unusual events. The Utility shall have the right to review the Producer's log.
 5. **REPORTING ABNORMAL CONDITIONS:** The Utility shall advise the Producer of abnormal conditions which the Utility has reason to believe could affect the Utility's operating conditions or procedures. The Producer shall keep the Utility similarly informed.
 6. **POWER FACTOR:** The Producer shall furnish reactive power as may be reasonably required by the Utility.
 - a. The Utility reserves the right to specify that generators with power factor control capability, including synchronous generators, be capable of operating continuously at any power factor between 95 percent leading (absorbing vars) and 90 percent lagging (producing vars) at any voltage level within ± 5.0 percent of rated voltage. For other types of generators with no inherent power factor control capability, the Utility reserves the right to specify the installation of capacitors by the Producer to correct generator output to near 95 percent leading power factor. The Utility may also require the installation of switched capacitors on its system to produce reactive support equivalent to that provided by operating a synchronous generator of the same size between 95 percent leading and 90 percent lagging power factor.
 - b. Where either the Producer or the Utility determines that it is not practical for the Producer to furnish the Utility's required level of reactive power or when the Utility specifies switched capacitors in its system pursuant to Section D.6.a, the Utility will provide, install, own and maintain the necessary devices on its system in accordance with Section F.
- E. **INTERFERENCE WITH SERVICE AND COMMUNICATION FACILITIES**
1. **GENERAL:** The Utility reserves the right to refuse to connect to any new equipment or to remain connected to any existing equipment of a size or character that may be detrimental to the Utility's operations or service to its customers.

(Continued)

Advice Letter No. 1025-E
Decision No. 83-10-093

Issued By
W. M. Gallavan
Vice-President

Date Filed May 21, 1984
Effective June 20, 1984
Resolution No. _____

RULE NO. 21 -- NONUTILITY-OWNED PARALLEL GENERATION (Cont'd.)

E. INTERFERENCE WITH SERVICE AND COMMUNICATION FACILITIES (continued)

2. The Producer shall not operate equipment that superimposes upon the Utility's system a voltage or current which causes interference with the Utility's operations, service to the Utility's customers or interference to communication facilities. If the Producer causes service interference to others, the Producer must diligently pursue and take corrective action at the Producer's expense after being given notice and reasonable time to do so by the Utility. If the Producer does not take timely corrective action, or continues to operate the equipment causing the interference without restriction or limit, the Utility may, without liability, disconnect the Producer's equipment from the Utility's system until a suitable permanent solution provided by the Producer is operational at the Producer's expense.

F. SPECIAL FACILITIES

1. Where the Producer requests the Utility to furnish interconnection facilities or where it is necessary to make additions to or reinforcements of the Utility's system and the Utility agrees to do so, such facilities shall be deemed to be special facilities and the costs thereof shall be borne by the Producer, including such continuing ownership costs as may be applicable.
2. Special facilities are (a) those facilities installed at the Producer's request which the Utility does not normally furnish under its tariff schedules, or (b) a prorata portion of existing facilities requested by the Producer, allocated for the sole use of such Producer, which would not normally be allocated for such sole use. Unless otherwise provided by the Utility's filed tariff schedules, special facilities will be installed, owned and maintained or allocated by the Utility as an accommodation to the Producer only if acceptable for operation by the Utility and the reliability of service to the Utility's customers is not impaired.
3. Special Facilities will be furnished under the terms and conditions of the Utility's "Agreement for Installation or Allocation of Special Facilities for Parallel Operation of Nonutility-owned Generation and/or Electrical Standby Service" (Form 79-280, effective June 1984) and its Appendix A, "Detail of Special Facilities Charges" (Form 79-702, effective June 1984). Prior to the Producer signing such an agreement, the Utility shall provide the Producer with a breakdown of special facilities costs in a form having detail sufficient for the information to be reasonably understood by the Producer. The special facilities agreement will include, but is not limited to, a binding quotation of charges to the Producer and the following general terms and conditions:
 - a. Where facilities are installed by the Utility for the Producer's use as special facilities, the Producer shall advance to the Utility its estimated installed cost of the special facilities. The amount advanced is subject to the monthly ownership charge applicable to customer-financed special facilities as set forth in Section I of the Utility's Rule No. 2.
 - b. At the Producer's option, and where such Producer's generation is a qualifying facility⁴ and the Producer has established credit worthiness to the Utility's satisfaction, the Utility shall finance those special facilities it deems to be removable and reusable equipment. Such equipment shall include, but not be limited to, transformation, disconnection and metering equipment.
 - c. Existing facilities allocated for the Producer's use as special facilities and removable and reusable equipment financed by the Utility in accordance with Section F.3.b are subject to the monthly ownership charge applicable to Utility-financed special facilities as set forth in Section I of Rule 2.

⁴A qualifying facility is one which meets the requirements established by the Federal Energy Regulatory Commission's rules (18 Code of Federal Regulations 292) implementing the Public Utility Regulatory Policies Act of 1978 (16 U.S.C.A. 796, et seq.).

(Continued)

Advice Letter No. 1025-E
Decision No. 83-10-093

Issued By
W. M. Gallavan
Vice-President

Date Filed May 21, 1984
Effective June 20, 1984
Resolution No. _____

RULE NO. 21 -- NONUTILITY-OWNED PARALLEL GENERATION (Cont'd.)

F. SPECIAL FACILITIES (continued)

- d. Where the Producer elects to install and deed to the Utility an extension of the Utility's distribution or transmission lines for use as special facilities in accordance with Section B.5, the Utility's estimate of the installed cost of such extension shall be subject to the monthly ownership charge applicable to customer-financed special facilities as set forth in Section I of the Rule No. 2.
 4. Where payment or collection of continuing monthly ownership charges is not practicable, the Producer shall be required to make an equivalent one-time payment in lieu of such monthly charges.
 5. Costs of special facilities borne by the Producer may be subject to downward adjustment when such special facilities are used to furnish permanent service to a customer of the Utility. This adjustment will be based upon the extension allowance or other such customer allowance which the Utility would have utilized under its then applicable tariffs if the special facilities did not otherwise exist. In no event shall such adjustment exceed the original installed cost of that portion of the special facilities used to serve a new customer. An adjustment, where applicable, will consist of a refund applied to the Producer's initial payment for special facilities and/or a corresponding reduction of the ownership charge.
- G. EXCEPTIONAL CASES: Where the application of this rule appears impractical or unjust, the Producer may refer the matter to the Commission for special ruling or for the approval of special conditions.
- H. INCORPORATION INTO POWER PURCHASE AGREEMENTS: Pursuant to Decision No. 83-10-093, if in accordance with Section A.4 the Producer enters into a written form of power purchase agreement with Utility, a copy of the Rule No. 21 in effect on the date of execution will be appended to, and incorporated by reference into, such power purchase agreement. The Rule appended to such power purchase agreement shall then be applicable for the term of the Producer's power purchase agreement with the Utility. Subsequent revisions to this rule shall not be incorporated into the rule appended to such power purchase agreement.

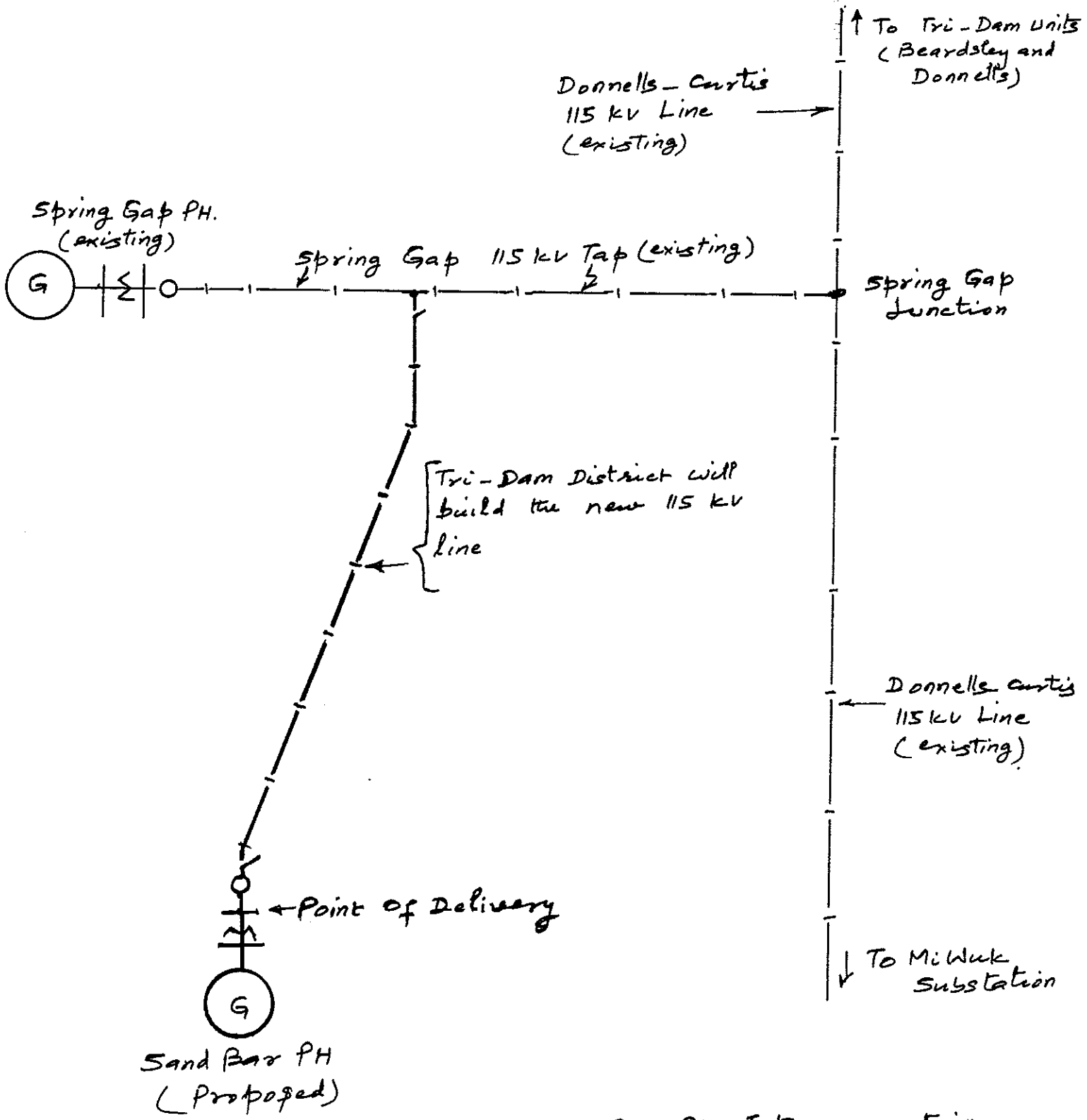
Advice Letter No. 1025-E
Decision No. 83-10-093

Issued By
W. M. Gallavan
Vice-President
Rates and Economic Analysis

Date Filed May 21, 1984
Effective June 20, 1984
Resolution No. _____

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

F-2 POINT OF DELIVERY LOCATION SKETCH



Sand Bar PH Interconnection

1 F-3 INTERCONNECTION FACILITIES FOR WHICH SELLER IS
2 RESPONSIBLE

3 The Seller requests, and PGandE consents, that the
4 detailed listing of facilities not be filled in at
5 the time of executing the Agreement, because the
6 information is not yet available to make a definitive
7 determination of the detailed listing of facilities
8 to be inserted here. However, the Seller will be
9 responsible for interconnection facilities of the
10 following general description: Acquiring the
11 associated rights of way and building a 4/0 ACSR
12 115 kV wood pole line from the proposed plant to the
13 Spring Gap Tap; installing revenue metering and an
14 I² Hour meter; installing telemetering and other
15 communications equipment at the power plant and PGandE
16 Energy Control Center in San Francisco; a telephone
17 lease line to Energy Control Center in San Francisco;
18 and installing a low pick-up under-voltage relay at
19 PGandE's Curtis Substation OCB No. 162.
20
21
22
23
24
25
26
27
28