

PACIFICORP/PORTLAND GENERAL ELECTRIC

PNW AC Intertie FOIA Request

DOJ File No. 150302-GT0373-02

November 19, 2002

Customer	Contract No.
PACIFICORP	29224
	92299
	94278
	94285
	94332
	94333
	94600
	94628
PORTLAND GENERAL	29225
	56747
	63627
	92277
	92340
PGE/PAC/USBR	59840

CONSTRUCTION TRUST AGREEMENT

executed by the

UNITED STATES OF AMERICA

DEPARTMENT OF ENERGY

acting by and through the

BONNEVILLE POWER ADMINISTRATION

and

PORTLAND GENERAL ELECTRIC COMPANY

providing for design, construction, installation, and test of certain  
additional facilities at Grizzly Substation

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dated 3-16-82)

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Table 3 (Main Control House Expansion)

Table 4 (Revenue Metering Replacement)

Table 5 (Oscillograph Replacement)

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This CONSTRUCTION TRUST AGREEMENT, executed Sept. 10, 1987 by the UNITED STATES OF AMERICA (Government), Department of Energy, acting by and through the BONNEVILLE POWER ADMINISTRATION (Bonneville), and PORTLAND GENERAL ELECTRIC COMPANY (Company), a Corporation of the State of Oregon,

W I T N E S S E T H :

WHEREAS the parties hereto, on August 27, 1982, executed a power sales contract designated as Contract No. DE-MS79-81BP90425 (which, as amended or replaced, is hereinafter referred to as "Power Sales Contract") which provided for the sale to the Company of all or part of its firm power requirements by Bonneville; and

WHEREAS the parties hereto, on January 3, 1966, executed a trust agreement designated as Contract No. 14-03-56747 which, as amended, provided for Bonneville to design, construct, and test the original jointly-owned, Government-owned, and portions of the Company-owned facilities at the Pacific Northwest-Pacific Southwest 500 kV AC Intertie Grizzly Substation (Grizzly); and

WHEREAS the parties hereto, on October 11, 1967, executed an O&M Trust Agreement designated as Contract No. 14-03-73941 which provides, among other matters, for Bonneville to operate the Company's facilities and to operate and maintain the jointly-owned facilities at Grizzly; and

WHEREAS the parties desire that Bonneville design, furnish certain labor and materials, construct, install, modify, and test additional facilities at Grizzly; and

WHEREAS the parties also wish to provide for Bonneville to operate and maintain the above-mentioned additional facilities constructed or installed hereunder; and

WHEREAS Bonneville is authorized pursuant to law to market electric power and energy generated at various Federal hydroelectric projects in the Pacific Northwest, or acquired from other resources, to construct and operate transmission facilities, to provide transmission and other services, and to enter into agreements to carry out such authority;

NOW, THEREFORE, the parties hereto mutually agree as follows:

1. Term of Agreement. This agreement shall be effective at 2400 hours on the date of execution (Effective Date) and, except as it is otherwise herein after provided, shall continue in effect until all acts required hereunder have been fully performed. All liabilities incurred hereunder shall be and are hereby preserved until satisfied.

2. Exhibits. Exhibits A and B, including Tables 1 through 5, are hereby made a part of this agreement. In Exhibit A, the Company shall be the "contractor".

3. Trust Account. Each party agrees to bear its percentage share of the cost determined by ownership shares, as defined in subsection 8(a), of

performing the work specified in each table of Exhibit B. The Company hereby agrees to deposit with Bonneville an amount equal to its said percentage share of the estimated total cost, less the cost of any materials it provides hereunder (Trust Deposit), for Bonneville to perform the work as specified in each table of Exhibit B. Such amount(s) shall be deposited in a trust account in the Bonneville Power Administration Fund in the United States Treasury (Trust Account) and shall be subject to withdrawal only for payment of the Company's share of the actual cost of performing the duties pursuant to section 4 below. The Company shall make payments, in the amounts and at the times requested by Bonneville, as provided in the appropriate table to Exhibit B. If at any time Bonneville determines that such amounts are insufficient to pay the actual cost of completing Bonneville's duties, the Company shall advance to Bonneville, upon completion of duties specified in subsection 6(b), when Bonneville, upon written notice, requests and in such installments as may be specified by Bonneville, such additional moneys as Bonneville estimates shall be required for such completion.

4. Duties of Bonneville.

(a) Bonneville shall furnish all materials and labor except that furnished by the Company pursuant to section 5 and shall design, construct, install, and test the facilities described in Exhibit B.

(b) All work done at the Company's expense hereunder shall be performed in whole or in part by force account, by contract, or by both, in the same manner and subject to the same limitations as if all funds being expended therefor were Government funds.

(c) Bonneville shall provide the Company with a bi-monthly progress report as appropriate to note significant milestones, delays, and final

project completions. The report shall cover all the tables of Exhibit B, be bi-monthly commencing from the Effective Date, and terminate when the last project is completed.

(d) On completion of the work specified in each table of Exhibit B, Bonneville shall furnish the Company with accurate physical layout drawings and schematic wiring diagrams of the equipment and facilities installed or modified under such table.

5. Duties of the Company.

(a) The Company shall perform the duties specified for it in Tables 1 through 5 of Exhibit B.

(b) The Company may perform such duties in whole or in part by force account, by contract, or by both.

6. Accounting.

(a) Trust Account Charges. The necessary cost of performing the work and furnishing the materials referred to in section 4 above, as such work and materials relate to the appropriate table of Exhibit B, shall be proper charges against the Trust Account, and shall be determined by charging the cost elements exclusive of interest in the same reasonable and prudent manner as if Government funds were being expended, including among other items, salaries and wages and employee benefits, materials and supplies, equipment rental and utilization costs, transportation costs, and overheads reasonably allocable thereto.

(b) Additional Trust Funds. If at any time Bonneville requests the Company to advance additional moneys pursuant to section 3 above for work specified in a table of Exhibit B, Bonneville shall, at the same time, make a full accounting to the Company showing the receipts, expenditures, adjustments

for salvage values, and the balance of the Trust Account. Bonneville shall also submit a statement to the Company showing in detail Bonneville's estimate of the additional moneys required to pay the cost of completing Bonneville's responsibilities as specified in section 4 above.

(c) Settlement of Trust Account. Within a reasonable time, not to exceed six months after completion of the work specified in each table of Exhibit B, Bonneville shall make a full accounting in regard to such work to the Company showing the receipts, expenditures, adjustments for salvage values, and the balance of the Trust Account. Such accounting shall be made in such manner so that the Company can place the various units of property on its books in the manner prescribed in the Federal Energy Regulatory Commission Uniform System of Accounts for Class A public utilities. Bonneville shall remit to the Company any unexpended balance of the Trust Account within a reasonable time, not to exceed 90 days, thereafter. Should Bonneville fail to complete its duties within one year beyond the estimated completion date specified in each Exhibit B table, such full accounting shall be made to the Company. Any unexpended balance of the Trust Account shall be refunded to the Company within a reasonable time thereafter, not to exceed 90 days.

7. Extension of Time. Estimated completion or energization dates specified for either party in each table of Exhibit B shall be extended for a time equivalent to such delays, if any, as are caused by events which such party could not have reasonably avoided by the exercise of reasonable diligence and foresight.

8. Ownership of Facilities

(a) Title to and ownership of the jointly-owned facilities constructed or installed hereunder shall be as defined in Contract No. 14-03-56747, as

amended, such that an undivided forty percent (40%) interest shall be and remain in the Company at all times and an undivided sixty percent (60%) interest shall be and remain in the Government at all times.

(b) Title to and ownership of all facilities constructed or installed hereunder that are furnished by Bonneville will remain in the Government until such facilities have been approved and released for operation by Bonneville. Within 30 days beyond such release, the Company may inspect such facilities and, unless the Company declares the facilities to be unacceptable, title to and ownership of such facilities shall then pass to and shall remain in the parties as specified in subsection (a) above.

(c) Should Bonneville fail to approve and release for operation (for reasons not covered under section 7) any or all of the facilities specified in Tables 1 through 5, within one year beyond that facility's estimated completion or energization date, title to and ownership of such facility shall then pass to and remain in the parties as specified in subsection (a) above.

9. Operation and Maintenance of Facilities. Operation and Maintenance of the facilities installed hereunder shall be in accordance with the O&M Trust Agreement (Contract No. 14-03-73941).

10. Permit.

(a) For any equipment or facilities belonging to either party to this agreement at Grizzly, a permit to perform the duties listed in each table of Exhibit B, together with the right of entry to said property at all reasonable times in such term, is hereby granted by the other party.

(b) If either party is required or permitted to construct, install, test, maintain, inspect, replace, repair, remove, or operate equipment of the other at Grizzly, the owner of such property shall furnish the other party with

accurate drawings and wiring diagrams of associated equipment and facilities, or, if such drawings or diagrams are not available, shall furnish accurate information regarding such equipment or facilities. The owner of such property shall notify the other party of any subsequent modification which may affect the duties of the other party in regard to such equipment, and furnish the other party with accurate revised drawings, if possible.

IN WITNESS WHEREOF, the parties hereto have executed this agreement in several counterparts.

UNITED STATES OF AMERICA  
Department of Energy  
Bonneville Power Administration

By James J. Jura  
Administrator

Effective Date: September 10, 1987

PORTLAND GENERAL ELECTRIC COMPANY

By [Signature]  
Title Vice President, Power Supply

Date May 15, 1987

(WP-PKT-0777e)

Exhibit B  
Table 1 - Page 1 of 2  
Contract No. DE-MS79-86BP92277  
Portland General Electric Co.  
Dated 4/20/87  
Effective: See "Term" below

Installation of Facilities  
(SUDS-To-SER Conversion)

The parties agree that it would be mutually beneficial to replace the present outdated, saturated-capacity Grizzly Substation Data System (SUDS) with a modern Sequential Events Recorder (SER) which has greatly expanded event/alarm capacity, time tagging to the nearest millisecond, and real-time telemetering links to Bonneville's Dittmer Control Center. Energization is scheduled for June 1987.

Replacement of the SUDS System with the SER System will, among other matters, improve post analysis of disturbances on the Pacific Northwest - Pacific Southwest AC Intertie and increase Intertie reliability.

Accordingly, Bonneville shall replace the present SUDS System subject to the following terms and conditions:

1. Term. This Table 1 shall be effective as of 2400 hours on the date of execution after Bonneville has received original signed copies of the Construction Trust Agreement, Contract No. DE-MS79-86BP92277 (Primary Agreement) and a check from the Company in the amount of the Trust Deposit.
2. Trust Deposit. The Trust Deposit shall be in the amount of \$120,000.
3. Cost Sharing. The estimated total cost of replacing the SUDS System at Grizzly with a SER System, as described in section 4 below, is \$300,000. This estimated amount is to be shared by the parties in proportion to their percentage ownerships of the Grizzly jointly-owned property as follows:

<u>Party</u>	<u>Joint Ownership Percentage (%)</u>	<u>Estimated Share of SUDS-to-SER Conversion Costs (\$)</u>
Bonneville	60.0	180,000
Portland General Electric Company	<u>40.0</u>	<u>120,000</u>
Total	100.0	300,000

Final sharing will be based on actual costs.

(WP-PKT-0777e)

Exhibit B  
Table 1 - Page 2 of 2  
Contract No. DE-MS79-86BP92277  
Portland General Electric Co.  
Dated 4/20/87  
Effective: See "Term" below

4. Duties of Bonneville. Bonneville shall design, provide all necessary labor and materials, and as soon as reasonably practicable after the Effective Date of this Table replace the SUD event/alarm disturbance system at Grizzly with a tested, energized, and operating SER System. All costs are to be shared in accordance with section 3 above.

5. Duties of the Company. The Company shall cooperate with Bonneville as necessary for Bonneville to make the SUDS-to-SER replacement specified in section 4 above.

6. Ownership. Title to and ownership of the equipment installed under this Table 1 shall be in accordance with section 8 of the Primary Agreement.

7. Operation and Maintenance. Operation and Maintenance of the equipment installed hereunder shall be in accordance with the O&M Trust Agreement (Contract No. 14-03-73941).

(WP-PKT-0777e)

Exhibit B  
Table 2, Page 1 of 2  
Contract No. DE-MS79-86BP92277  
Portland General Electric Co.  
Dated 4/20/87  
Effective: See "Term" below

Installation of Facilities  
(Stability Control Upgrade, Phase I, Part 3)

The parties agree that it would be mutually beneficial for certain changes, additions, and modifications to be made at Grizzly as part of the AC Intertie Stability Control Upgrade Project, Phase I, Part 3, with the cost being shared by the parties. Energization is planned for June 1987.

Accordingly, Bonneville shall make these changes, additions, and modifications under this Table 2 subject to the following terms and conditions:

1. Term. This Table 2 shall be effective as of 2400 hours on the date of execution after Bonneville has received original signed copies of the Construction Trust Agreement, Contract No. DE-MS79-86BP92277 (Primary Agreement) and a check from the Company in the amount of the Trust Deposit specified in section 3(a) below.

2. Cost Sharing. The estimated total cost for these changes, additions, and modification at Grizzly as described in section 4 below is \$490,000. This estimated amount is to be shared by the parties in proportion to their percentage ownerships of the Grizzly jointly-owned property as follows:

<u>Party</u>	<u>Joint Ownership Percentage (%)</u>	<u>Estimated Share of Stability Controls Upgrade Costs (\$)</u>
Bonneville	60.0	294,000
Portland General Electric Company	<u>40.0</u>	<u>196,000</u>
	100.0	490,000

Final sharing shall be based on actual cost.

3. Trust Deposit. The Company agrees to pay \$196,000 to Bonneville to be held in trust to defray the cost to the Government of performing the duties specified in section 4. The Company shall pay the Trust Deposit as follows:

- a. \$100,000 on the date of execution; and
- b. \$96,000 within 30 days after the date of execution.

Exhibit B  
Table 2, Page 2 of 2  
Contract No. DE-MS79-86BP92277  
Portland General Electric Co.  
Dated 4/20/87  
Effective: See "Term" below

4. Duties of Bonneville. As soon as reasonably practicable after the Effective Date of this Table, Bonneville shall design, provide all necessary labor and materials, and:

- a. install equipment to generate a revised Malin-Grizzly "Intertie Trouble" transfer trip signal;
- b. add transfer trip equipment to receive a line-loss signal from new logic installed at John Day;
- c. replace obsolete transfer trip equipment on nine critical Remedial Action Scheme circuits;
- d. replace obsolete Tone Test Panels on four critical transfer trip circuits; and
- e. provide transfer trip equipment for three new control circuits which integrate the Remedial Action Scheme with Pacific Gas and Electric's Remedial Action Scheme.

5. Duties of The Company. The Company shall cooperate with Bonneville as necessary for Bonneville to make the changes and additions specified in section 4 above.

6. Ownership. Title to and ownership of the equipment installed under this Table 2 shall be in accordance with section 8 of the Primary Agreement.

7. Operation and Maintenance. Operation and Maintenance of the equipment installed hereunder will be in accordance with the O&M Trust Agreement (Contract No. 14-03-73941).

8. Microwave Facilities. All microwave facilities at Grizzly are solely owned and operated and maintained by Bonneville at Government expense. Accordingly, Bonneville shall own and make all additions, modifications, and replacements to microwave facilities for the AC Intertie Stability Control Upgrade, and shall O&M these facilities at Government expense. The duties listed in section 4 above do not include work on Bonneville's solely-owned microwave facilities.

(WP-PKT-0777e)

Exhibit B  
Table 3, Page 1 of 3  
Contract No. DE-MS79-86BP92277  
Portland General Electric Co.  
Dated 4/20/87  
Effective: See "Term" below

Installation of Facilities  
(Main Control House Expansion)

The parties agree that it would be mutually beneficial for the control house at Grizzly to be expanded by 1505 square feet and for the existing heating, ventilating and air conditioning system (HVAC) to be replaced. This additional floor space is required for the control and communication equipment associated with the new Stability Control Upgrade and will include sufficient space to house future control, protection, communication, and data systems. The current HVAC is past its nominal service life and suffers from frequent failures. Additional HVAC capacity is also needed because of the control house expansion. The control house expansion also requires relocation of the entrance road. Completion is planned for November 1987.

Accordingly, the work shall be performed by Bonneville subject to the following terms and conditions:

1. Term. This Table 3 shall be effective as of 2400 hours on the date of execution after Bonneville has received original signed copies of the Construction Trust Agreement, Contract No. DE-MS79-86BP92277 (Primary Agreement) and a check from the Company in the amount of the Trust Deposit specified in section 3(a) below.

Exhibit B  
Table 3, Page 2 of 3  
Contract No. DE-MS79-86BP92277  
Portland General Electric Co.  
Dated 4/20/87  
Effective: See "Term" below

2. Cost Sharing. The estimated total cost of constructing the 1505 square foot addition to the Grizzly control house and replacing the HVAC, as described in section 4 below, is \$347,000. This amount is to be shared by the parties in proportion to their percentage ownerships of the Grizzly jointly-owned property as follows:

<u>Party</u>	<u>Joint Ownership Percentage (%)</u>	<u>Estimated Share of Control House Expansion Costs (\$)</u>
Bonneville	60.0	208,200
Portland General Electric Company	<u>40.0</u>	<u>138,800</u>
	100.0	347,000

Final sharing shall be based on actual costs.

3. Trust Deposit. The Company agrees to pay \$138,800 to Bonneville to be held in trust to defray the cost to the Government for performing the duties specified in section 4. The Company shall pay the Trust Deposit as follows:

- a. \$20,000 on the date of execution; and
- b. \$118,800 within 6 months after the date of execution.

4. Duties of Bonneville. Bonneville shall design, provide all necessary labor and materials, and within 8 months after the Effective Date of this Table construct the addition to the Grizzly control house and replace the existing HVAC as follows:

- a. Control house addition. Construct a 35' x 43' addition to the Grizzly control house and relocate the entrance road; and
- b. HVAC Replacement. Remove and replace the existing water-cooled air conditioning unit and water-heated boiler with a new outdoor air-cooled air conditioning unit and a new electric resistance heating unit.

All costs are to be shared in accordance with section 2 above.

5. Duties of The Company. The Company shall cooperate with Bonneville as necessary for Bonneville to make the additional replacements specified in section 4 above.

Exhibit B  
Table 3, Page 3 of 3  
Contract No. DE-MS79-86BP92277  
Portland General Electric Co.  
Dated 4/20/87  
Effective: See "Term" below

6. Ownership. Title to and ownership of the equipment installed under this Table 3 shall be in accordance with section 8 of the Primary Agreement.

7. Operation and Maintenance. Operation and Maintenance of the equipment installed hereunder shall in accordance with the O&M Trust Agreement (Contract No. 14-03-73941).

(WP-PKT-0777e)

Exhibit B  
Table 4, Page 1 of 2  
Contract No. DE-MS79-86BP92277  
Portland General Electric Co.  
Dated 4/20/87  
Effective: See "Term" below

Installation of Facilities  
(Revenue Metering Replacement)

The parties agree that it would be mutually beneficial to replace the revenue meters at Grizzly. New solid state meters would replace the existing electro-mechanical Sangamo P30F revenue meters, which are less accurate and require more maintenance. Energization is planned for June 1987.

Accordingly, the work shall be performed by Bonneville subject to the following terms and conditions:

1. Term. This Table 4 shall be effective as of 2400 hours on the date of execution after Bonneville has received original signed copies of the Construction Trust Agreement, Contract No. DE-MS79-86BP92277 (Primary Agreement) and a check from the Company in the amount of the Trust Deposit.

2. Cost Sharing. The estimated total cost of replacing the revenue meters, as described in section 4 below, is \$20,000. This amount is to be shared by the parties in proportion to their percentage ownerships of the Grizzly jointly-owned property as follows:

<u>Party</u>	<u>Joint Ownership Percentage (%)</u>	<u>Estimated Share of Replacement Costs (\$)</u>
Bonneville	60.0	12,000
Portland General Electric Company	<u>40.0</u>	<u>8,000</u>
Total	100.0	20,000

Final sharing shall be based on actual costs.

Exhibit B  
Table 4, Page 2 of 2  
Contract No. DE-MS79-86BP92277  
Portland General Electric Co  
Dated 4/20/87  
Effective: See "Term" below

3. Trust Deposit. The Trust Deposit shall be in the amount of \$8,000.
4. Duties of Bonneville. As soon as reasonably practicable after the Effective Date of this Table, Bonneville shall design, provide all necessary labor and materials, and replace the existing Sangamo P30F revenue meters at Grizzly with solid state meters.
5. Duties of the Company. The Company shall cooperate with Bonneville as necessary to insure completion of the replacement of the revenue meters as specified in section 4 above.
6. Ownership. Title to and ownership of the equipment installed under this Table 4 shall be in accordance with section 8 of the Primary Agreement.
7. Operation and Maintenance. Operation and Maintenance of the equipment installed hereunder shall be in accordance with the O&M Trust Agreement (Contract No. 14-03-73941).
8. Accounting. If the parties agree that it is necessary for the Company to participate in the test and energization of the revenue meters replaced by Bonneville under this Table, the Company's appropriate costs incurred shall be proper charges against this trust. The Company shall submit to Bonneville a detailed invoice of its costs incurred and Bonneville shall give the Company appropriate credit against this trust.

(WP-PKT-0777e)

Exhibit B  
Table 5, Page 1 of 2  
Contract No. DE-MS79-86BP92277  
Portland General Electric Co.  
Dated 4/20/87  
Effective: See "Term" below

Installation of Facilities  
(Oscillograph Replacement)

The parties agree that it would be mutually beneficial for Bonneville to replace the oscillograph at Grizzly with a less maintenance intensive, more reliable modern oscillograph. Energization is planned for April 1988.

Accordingly, the work shall be performed by Bonneville subject to the following terms and conditions:

1. Term. This Table 5 shall be effective as of 2400 hours on the date of execution after Bonneville has received original signed copies of the Construction Trust Agreement, Contract No. DE-MS79-86BP92277 (Primary Agreement) and a check from the Company in the amount of the Trust Deposit specified in section 3(a) below.

2. Cost Sharing. The estimated total cost of replacing the oscillograph as described in section 4 below, is \$140,000. This amount is to be shared by the parties in proportion to their percentage ownerships of the Grizzly jointly-owned property as follows:

<u>Party</u>	<u>Joint Ownership Percentage (%)</u>	<u>Estimated Share of Replacement Costs (\$)</u>
Bonneville	60.0	84,000
Portland General Electric Company	<u>40.0</u>	<u>56,000</u>
Total	100.0	140,000

Final sharing shall be based on actual costs.

Exhibit B  
Table 5, Page 2 of 2  
Contract No. DE-MS79-86BP92277  
Portland General Electric Co.  
Dated 4/20/87  
Effective: See "Term" below

3. Trust Deposit. The Company agrees to pay \$56,000 to Bonneville to be held in trust to defray the cost to the Government of performing the duties specified in section 4. The Company shall pay the Trust Deposit as follows:
  - a. \$4,000 on the date of execution; and
  - b. \$28,000 within 6 months after the date of execution; and
  - c. \$24,000 within 9 months after the date of execution.
4. Duties of Bonneville. Bonneville shall design, provide all necessary labor and materials, and within 13 months after the Effective Date of this Table replace the existing analog 12-channel light sensitive paper film oscillograph at Grizzly with a 16-channel digital oscillograph to eliminate the need to develop the paper film and to obtain prefault and remote readout capabilities.
5. Duties of the Company. The Company shall cooperate with Bonneville as necessary to insure completion of the replacement of the oscillograph as specified in section 4 above.
6. Ownership. Title to and ownership of the equipment installed under this Table 5 shall be in accordance with section 8 of the Primary Agreement.
7. Operation and Maintenance. Operation and Maintenance of the equipment installed hereunder shall be in accordance with the O&M Trust Agreement (Contract No. 14-03-73941).

(WP-PKT-0777e)



**Department of Energy**  
Bonneville Power Administration  
P.O. Box 3621  
Portland, Oregon 97208-3621

OFFICE OF THE ADMINISTRATOR

In reply refer to: PMT

July 28, 1988

Amendatory Agreement No. 1  
Contract No. DE-MS79-86BP92277

Mr. Richard E. Dyer  
Vice President, Power Systems  
Portland General Electric Company  
121 SW. Salmon Street  
Portland, OR 97204

Dear Mr. Dyer:

Representatives of the Bonneville Power Administration (Bonneville) and Portland General Electric Company (Company) agree that it would be mutually beneficial to amend the Bonneville - Portland General Electric Company Grizzly Substation Construction Trust Agreement (Contract No. DE-MS79-86BP92277, executed September 10, 1987, and hereinafter referred to as "Primary Agreement") to:

1. permit the Primary Agreement to run until terminated by either party;
2. include Exhibit B, Tables 1 through 7; and
3. provide for the inclusion of additional Exhibit B Tables each time the parties agree that facilities and equipment shall be added or modified at Grizzly Substation (Grizzly).

I therefore propose that the above beneficial objectives be accomplished by amending the Primary Agreement as follows:

1. Effective Date of Amendment. This Amendatory Agreement No. 1 shall be effective as of 2400 hours on its date of execution.
2. Delete section 1 of the Primary Agreement and substitute the following therefor:
  - "1. Term of Agreement. This agreement shall be effective at 2400 hours on the date of execution (Effective Date), and shall be coextensive with the intertie agreement between Bonneville and the Company (Contract No. DE-MS79-88BP92430), as each agreement may be amended, extended, or replaced. All liabilities incurred hereunder shall be and are hereby preserved until satisfied."



*Celebrating the U.S. Constitution Bicentennial — 1787-1987*

3. Delete section 2 of the Primary Agreement and substitute the following therefor:

"2. Exhibits. Exhibits A and B, including Tables 1 through 7, are hereby made a part of this agreement. In Exhibit A, the Company shall be the "contractor"."

4. Add the following as section 11 of the Primary Agreement:

"11. Additions to Exhibit B.

(a) Bonneville shall prepare, for execution by the parties, an additional table to Exhibit B each time the parties agree that facilities shall be added or modified at Grizzly. Such table shall specify the facilities to be installed, the work to be performed by each party, and the estimated costs to be borne by the Company. Such estimated costs less any credit for facilities furnished by the Company shall constitute the amount of the Trust Deposit specified for each project. Final costs to be borne by the Company shall be based on actual costs.

(b) Upon execution by the parties, new tables to Exhibit B shall be attached to and deemed to be a part of this agreement and shall be effective on the date specified therein."

If this Amendatory Agreement is acceptable to the Company, please indicate your approval by signing and returning two original copies to Bonneville. Bonneville will transmit a fully executed original copy for your records.

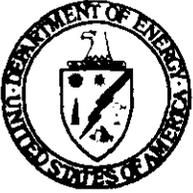
Sincerely,

*James J. Jura*  
Administrator  
Effective Date July 29, 1988

ACCEPTED:

PORTLAND GENERAL ELECTRIC COMPANY

By *R. D.*  
Title VICE PRESIDENT  
Date July 29, 1988



**Department of Energy**  
Bonneville Power Administration  
P.O. Box 3621  
Portland, Oregon 97208 - 3621

OFFICE OF THE ADMINISTRATOR

In reply refer to: PMT

July 28, 1988

Exhibit B  
Table 6 - Page 1 of 4  
Contract No. DE-MS79-86BP92277  
Effective: See "Term" Below

Mr. Richard E. Dyer  
Vice President, Power Systems  
Portland General Electric Company  
121 SW. Salmon Street  
Portland, OR 97204

Dear Mr. Dyer:

Representatives of the Bonneville Power Administration (Bonneville) and Portland General Electric Company (Company) agree that it would be mutually beneficial if Bonneville made certain significant changes and additions at jointly-owned Grizzly Substation (Grizzly) to upgrade the existing Pacific Northwest-Pacific Southwest AC Intertie Stability Control System, with the costs being shared by the parties. Authorized Phase 1 of the Upgrade Project has all but been completed.

Under proposed Phases 2 & 3 of the AC Intertie Stability Control Upgrade Project at Grizzly, that stability control system will attain the necessary reliability, security, and flexibility to meet and exceed current and anticipated Western Systems Coordinating Council (WSCC) operating standards by essentially replacing the existing system with a new system capable of full redundant operation.

Energization for Phase 2 and Phase 3 is planned for January 1990.

I therefore propose that Bonneville make the above Phase 2 and Phase 3 replacement and upgrade of the AC Intertie Stability Control System at Grizzly under the Bonneville-Portland General Electric Company Grizzly Construction Trust Agreement (Contract No. DE-MS79-86BP92277) and the following terms and conditions:

1. Term. Table 6 shall be effective as of 2400 hours on the date (Effective Date) that Bonneville has received an original signed copy of this Table 6 and a check from the Company in the amount of the Trust Deposit specified in subsection 3(a).

2. Cost Sharing. The estimated total cost for Bonneville to make the Phase 2 and Phase 3 replacement and upgrade of the existing AC Intertie Stability Control System at Grizzly is \$782,000. The actual amount is to be shared by the parties in proportion to their percentage ownerships of the Grizzly jointly-owned property as shown in Figure 1 below. The Company's estimated share is \$313,000.

<u>Party</u>	<u>Joint Ownership Percentage (%)</u>	<u>Estimated Share of Phase 2 Project Costs (\$)</u>	<u>Estimated Share of Phase 3 Project Costs (\$)</u>	<u>Estimated Share of Phase 2 &amp; Phase 3 Project Costs (\$)</u>
Bonneville	60.0	288,000	181,000	469,000
Portland General Electric Company	<u>40.0</u>	<u>192,000</u>	<u>121,000</u>	<u>313,000</u>
Total	100.0	480,000	302,000	782,000

Figure 1

Final sharing will be based on actual costs.

3. Trust Deposit. The Company agrees to pay \$313,000 to Bonneville to be held in trust to defray the Company's share of the cost to the Government of performing the duties specified in subsection 4(a). The Company shall pay the Trust Deposit as follows:
- (a) \$156,500 on the date of execution; and
  - (b) \$156,500 within ten months after the date of execution.
4. Duties of Bonneville. Bonneville shall design, provide all necessary labor and materials, and, within 17 months after the Effective Date of this Table 6, make Phase 2 and Phase 3 replacement and upgrade of the existing AC Intertie Stability Control System at Grizzly, including:
- (a) at joint Bonneville-Company expense as shown in Figure 1:
    - (1) installation and testing of eight Line Loss Logic panels;
    - (2) installation and testing of eight sets of Integrated Microwave Transfer Trip equipment to integrate the subsection 4(a)(1) Line Loss Logic panels into the said stability control system; and
    - (3) integration into the Line Loss Logic of Government-owned MOD auxiliary "b" switches installed by Bonneville pursuant to subsection 4(b) and Company-owned auxiliary "b" switches installed by the Company pursuant to subsection 5(b); and

- (b) at Government expense, installation of auxiliary "b" switches to the following Government-owned motor-operated disconnect switches (MOD's) for the integration of such "b" switches into the Line Loss Logic:

<u>Bay 2 MOD's</u>		<u>Bay 4 MOD's</u>	
<u>Construction</u>		<u>Construction</u>	
<u>Number</u>	<u>Owner</u>	<u>Number</u>	<u>Owner</u>
21E	Government	41E	Government
23E	Government	43E	Government
24E	Government		
26E	Government		
27E	Government		
29E	Government		

Figure 2

5. Duties of the Company.

- (a) The Company shall cooperate with Bonneville as necessary for Bonneville to make the Phase 2 and Phase 3 replacement and upgrade (including installation and testing) specified in section 4. The Company shall make payment as required in sections 1 and 3.
- (b) The Company, at its own expense, shall design, provide all necessary labor and materials, and, within 17 months after the Effective Date of this Table 6, make Phase 2 and Phase 3 installation of auxiliary "b" switches to the following Company-owned MOD's for Bonneville's integration of such "b" switches into the Line Loss Logic:

<u>Bay 4 MOD's</u>	
<u>Construction</u>	
<u>Number</u>	<u>Owner</u>
47E	Company
49E	Company

Figure 3

6. Ownership. Title to and ownership of the MOD auxiliary "b" switches installed under subsections 4(b) and 5(b) of this Table 6 shall be in the Government and the Company respectively. Title to and ownership of subsection 4(a) facilities and equipment installed under this Table 6, shall be in accordance with section 8 of the Primary Agreement (Contract No. DE-MS79-86BP92277) and as indicated by the joint ownership percentages in Figure 1 of section 2 above.

7. Operation and Maintenance. Bonneville will operate and maintain the subsection 4(a) facilities and equipment installed hereunder in accordance with the Grizzly O&M Trust Agreement (Contract No. 14-03-73941). The Company's share of the cost of maintaining such facilities and equipment shall be its joint ownership percentage indicated in Figure 1 of section 2 above.

8. Microwave Facilities. All microwave facilities at Grizzly are solely owned, operated, and maintained by Bonneville at Government expense. Accordingly, Bonneville shall own and make all additions, modifications, and replacements to microwave facilities for the Stability Control Upgrade Project, and shall operate and maintain these facilities at Government expense.

If this Table 6 is acceptable to the Company, please indicate your approval by signing and returning two original copies to Bonneville with a check in the amount of the Trust Deposit specified in subsection 3(a). Bonneville will transmit a fully executed original copy for your records.

Sincerely,

James J. Jena  
Administrator  
Effective Date July 29, 1988

ACCEPTED:

PORTLAND GENERAL ELECTRIC COMPANY

By [Signature]  
Title Vice President  
Date July 29, 1988



**Department of Energy**  
Bonneville Power Administration  
P.O. Box 3621  
Portland, Oregon 97208 - 3621

OFFICE OF THE ADMINISTRATOR

In reply refer to: PMT

August 24, 1990

Exhibit B  
Table 7 - Page 1 of 4  
Contract No. DE-MS79-86BP92277  
Effective: See "Term" Below

Mr. Richard E. Dyer  
Vice President, Power Management  
Portland General Electric Company  
121 SW. Salmon Street  
Portland, OR 97204

Dear Mr. Dyer:

Representatives of Bonneville Power Administration (Bonneville) and Portland General Electric Company (Company) desire to supersede the July 28, 1988, version of this Table 7 executed July 29, 1988, with this August 24, 1990, version of Table 7.

Representatives of Bonneville and the Company agree that it would be mutually beneficial if Bonneville made certain necessary changes and additions in the Government's Fort Rock Capacitor Switching Station (Fort Rock) control house to upgrade the existing Pacific Northwest-Pacific Southwest AC and HVDC Intertie Stability Control System (Upgrade Project), with the costs being shared by the parties. Authorized Phase 1 of the Upgrade Project has all but been completed.

Under proposed Phase 2 of the Upgrade Project at Fort Rock, the Intertie Stability Control System will attain the necessary reliability, security, and flexibility to meet and exceed current and anticipated Western Systems Coordinating Council (WSCC) operating standards, by essentially replacing the existing system with a new system capable of fully redundant operations.

At Fort Rock, replacement and upgrade of the existing Stability Control System facilities and equipment in the Government's control house will improve AC Intertie stability by assuring the initiation of high speed insertion of the Government's and the Company's Fort Rock series capacitors when there is a significant loss of DC Intertie power.

Energization of HVDC stability controls for Phase 2 was completed in March 1989.

I therefore propose that Bonneville make the above Phase 2 replacement and upgrade of the Intertie Stability Control System at Fort Rock under the Bonneville-Company Grizzly Substation Construction Trust Agreement (Contract No. DE-MS79-86BP92277) and the following terms and conditions:

1. Term. Table 7 shall be effective as of 2400 hours on the date (Effective Date) that Bonneville has received an original signed copy of this Table 7 and a check from the Company in the amount of the Trust Deposit specified in section 3.

2. Cost Sharing.

(a) The estimated project joint costs for Bonneville to make the Phase 2 replacement and upgrade of the existing Intertie Stability Control System in the Government's control house at Fort Rock is \$56,000. The actual amount is to be shared by the parties in proportion to the cost sharing percentages referenced in subsection 9(f) of the Bonneville-Company Intertie Agreement (Contract No. DE-MS79-87BP92340) and as shown in Figure 1 below. The Company's estimated share is \$28,000.

<u>PROJECT JOINT COSTS</u>		
<u>Party</u>	<u>Cost Sharing Percentage (%)</u>	<u>Estimated Share of Phase 2 Joint Costs (\$)</u>
Bonneville	50.0	28,000
Portland General Electric Company	<u>50.0</u>	<u>28,000</u>
Total	100.0	56,000 <u>1/</u>

1/ Cost estimates include 30 percent overheads.

Figure 1

Final sharing of project joint costs will be based on actual costs, including 30 percent overheads for the Company, as described in subsection 2(b) and estimated costs as modified in accordance with subsection 2(c).

(b) The Company's share of the Upgrade Project at Fort Rock consists of the following components:

(1) Direct Specific Substation Costs which are 50 percent of (WO 827-521) actual (final) costs plus a 30 percent overhead charge. This amount is estimated to be \$24,500.

(2) Upgrade Project Coordination, Project Management, and Testing Costs (WO 827-546) which are based on the ratio of the Fort Rock specific substation costs to the total Upgrade Project costs. This amount is estimated to be \$3,500. The formula is shown in section (a) of Attachment 1.

(c) Final billing of WO 827-546 charges to the substations will be based on the above subsection 2(b) and Attachment 1 formulas, except the actual (final) charges to WO 827-546 (Holding), WO 827-521 (Fort Rock), WO 827-534 (Malin), and WO 827-536 (Grizzly), will be used instead of estimated values in all calculations. The value of \$SCU used in the final billing formulas will be the best available estimate of final cost at the time WO 827-546 is closed. (This estimated cost will reflect the actual costs for WO's 827-546, 827-521, 827-534, 827-536, and any other Work Orders that have been closed, as well as any revisions made to the remaining estimates to account for mutually approved project scope changes or cost adjustments.)

3. Trust Deposit. The Company paid \$49,500 to Bonneville following the date of execution of the July 28, 1988, version of this Table 7. This amount was held in an account established for the project to defray the Company's estimated share of the cost to the Government of performing the duties specified in section 4. The Company's overpayment (\$49,500-\$28,000), which equals \$21,500, shall be credited to offset the Trust Deposit due in subsection 3(c) of Table 6 of this Contract No. DE-MS79-86BP92277.

Bonneville shall make a final accounting for actual costs of the duties performed in section 4. Pursuant to section 6(c) of this Contract No. DE-MS79-86BP92277, Bonneville shall remit to the Company any remaining balance or bill the Company for any actual costs in excess of that balance.

4. Duties of Bonneville. Bonneville designed, provided all necessary labor and materials, and completed the Phase 2 replacement and upgrade of the existing Intertie Stability Control System in the control house at Fort Rock, including installation and testing of:

(a) two sets of Integrated Microwave Transfer Trip equipment to integrate Fort Rock control facilities and equipment into the said stability control systems; and

(b) the necessary interface wiring for initiation of high speed insertion of series capacitors in the Government's and the Company's Fort Rock Capacitor Switching Stations.

5. Duties of the Company. The Company cooperated with Bonneville as necessary for Bonneville to complete the Phase 2 replacement and upgrade (including installation and testing) specified in section 4. The Company made payment as required in sections 1 and 3.

6. Ownership. Title to and ownership of the facilities and equipment installed under this Table 7, shall be in accordance with subsection 9(f) of Contract No. DE-MS79-87BP92340 and subsection 5(c) of Contract No. 14-03-56747, and as indicated by the cost sharing percentages in Figure 1 of section 2 above.

7. Operation and Maintenance. Bonneville will operate and maintain the facilities and equipment installed hereunder in accordance with the Grizzly Substation O&M Trust Agreement (Contract No. 14-03-73941). Any provisions of Contract No. 14-03-73941 to the contrary notwithstanding, the Company's share of the cost of operating and maintaining such facilities and equipment shall be the percentage established under subsection 9(f) of Contract No. DE-MS79-87BP92340 and indicated in Figure 1 of section 2 above.

8. Microwave Facilities. All microwave facilities at Fort Rock are solely owned, operated, and maintained by Bonneville at Government expense. Accordingly, Bonneville shall own and make all additions, modifications, and replacements to microwave facilities for the Upgrade Project, and shall operate and maintain these facilities at Government expense.

9. Upgrade Project System Work Order (WO) Costs Spreading. Attachment 1 contains the derivation and application of formulas used to spread the costs of Upgrade Project system work orders to Fort Rock Capacitor Switching Station. The estimated spread costs are included in Figure 1 (see subsection 2(b)). Attachment 1 is hereby made a part of this Agreement.

If this revised Table 7 is acceptable to the Company, please indicate your approval by signing and returning two original copies to Bonneville. Bonneville will transmit a fully executed original copy for your records.

Bonneville hereby acknowledges receipt of the Company's payment in the amount of the Trust Deposit specified in section 3.

Sincerely,

  
\_\_\_\_\_  
ACTING Administrator  
Effective Date 10/04/90

ACCEPTED:

PORTLAND GENERAL ELECTRIC COMPANY

By

Title Senior Vice President

Date 10-1-90

(VS6-PMTT-3131e)

ATTACHMENT 1

Stability Control Upgrade Project System Work Order (WO) Costs Spreading.

Upgrade Project System WO costs are spread or distributed to associated Intertie Upgrade Project substations according to the following methodology with specific application to the Fort Rock Capacitor Switching Station.

(a) WO 827-546 (Coordination, Project Management, and Testing)

Trust Tables

Estimated costs in the Trust Tables are based on Estimates EC-8157-1 and EC-9086-1, and proportioned to the associated substations in accordance with the ratio of the substation-specific estimated direct cost to the total estimated project cost, less the estimated direct costs of the associated communication work orders and WO's 827-517 and 827-546. When the estimated costs are spread to a shared-cost substation, they are allocated to each participant at that substation in proportion to the ratios referenced in the Construction Trust Agreement for that substation. The estimated cost for WO 827-546 is \$940,000 (direct cost), resulting in the following spreading formulas for the Trust Tables:

$TSCU = \text{Total estimated direct project costs} = \$8,638,300$

$\$COM = \text{Estimated direct cost, Communication Work Orders}$   
 $= \$1,000,100$

$\$827-517 = \text{Estimated direct cost, WO 827-517} = \$128,000$

$\$827-546 = \text{Estimated direct cost, WO 827-546} = \$940,000$

$\$SCU = TSCU - \$COM - \$827-517 - \$827-546 = \$6,570,200$

$S_{SCU} = \text{Estimated direct cost of station-specific non-communication SCU work orders.}$

$D_S = \text{Estimated direct charges to Station}$   
 $= (S_{SCU}/\$6,570,200) (\$940,000)$

$\%CUST = \text{Proportion of SCU station charges to be assessed to customer (as established in Trust Agreement).}$

$D_{CUST} = \text{Estimated direct station charges from WO 827-546 to be assessed to customer} = (D_S) (\%CUST)$

$\$CUST = \text{Total estimated station charges to customer (including 30\% Overheads) from WO 827-546} = (DCUST) (1.3)$

Portland General Electric Company at Fort Rock Capacitor Switching Station

$\$SCU = \$6,570,200$

$\$SCU [827-521] = \$38,000 \text{ (EC-7795-2)}$

$D_S [827-521] = (\$38,000/\$6,570,200)(\$940,000) = \$5,400$

$\%CUST [827-521] = 50\%$

$DCUST [827-521] = (\$5,400)(50\%) = \$2,700 \text{ (Direct)}$

$\$CUST [827-521] = (\$2,700)(1.3) = \$3,500 \text{ (including Overheads)}$

(VS6-PMTT-3131e)



**Department of Energy**  
Bonneville Power Administration  
P.O. Box 3621  
Portland, Oregon 97208-3621

In reply refer to: **PMTT**

**Exhibit B**  
**Table 8, Page 1 of 4**  
**Contract No. DE-MS79-86BP92277**  
**Effective on the Effective Date**

**Mr. Richard E. Dyer**  
**Vice President**  
**Marketing and Supply**  
**Utility Operations**  
**Portland General Electric Company**  
**121 SW Salmon Street**  
**Portland, OR 97204**

**Dear Mr. Dyer:**

**Representatives of the Bonneville Power Administration (Bonneville) and Portland General Electric (Company) have agreed that it would be mutually beneficial to make certain replacements and upgrades at the Grizzly Substation in order to protect substation equipment and maintain the integrity of the power system with the costs being shared by the parties. This contract provides for replacement of indoor power line carrier equipment for PGE's Round Butte-Grizzly 500 kV transmission line, battery chargers, and SCADA Remote Terminal Unit (RTU) at Grizzly Substation.**

**I therefore propose that Bonneville make the above replacements and upgrades under the Bonneville-Company Grizzly Substation Construction Trust Agreement (Contract No. DE-MS79-86BP92277). Accordingly, Bonneville and the Company hereby agree to the following terms and conditions:**

- 1. Effective Date. Table 8 shall be effective on 2400 hours on the date (Effective Date) which shall be the later of (a) Bonneville receives both (1) an original signed copy of this Table 8 by the Company and (2) payment from the Company in the amount of the trust deposit specified in Section 3; or (b) acceptance for filing by the Federal Energy Regulatory Commission of this Table 8.**
- 2. Cost Sharing.**
  - (a) The estimated total project cost for the replacement of the indoor power line carrier equipment, battery chargers and SCADA Remote Terminal Unit**

(RTU) at Grizzly Substation is \$133,000 which includes appropriate overheads. Costs for the project shall be shared as follows:

<u>Party</u>	<u>Cost Share Percentage</u>	<u>Estimated Share of Project Cost (\$)</u>
BPA	60	79,800
<u>PGE</u>	<u>40</u>	<u>53,200</u>
Total	100	133,000

The estimated total cost for each of the three separate projects is as follows:

- (1)(a) indoor power line carrier equipment replacement: \$20,000
- (1)(b) indoor power line carrier equipment: \$19,000
- (2) battery charger replacement: \$21,000
- (3) RTU replacement: \$73,000

(b) The Company's share of the project cost shall be reduced to take into account the estimated cost, including overheads, of the indoor power line carrier equipment provided by the Company.

Company's estimated share of project cost:	\$53,200
<u>Credit for power line carrier equipment:</u>	<u>\$19,000</u>
Company's remaining obligation:	\$34,200

(c) Final sharing of project joint costs shall be based on actual costs including appropriate overheads. The overheads are fixed at the Effective Date of this Table 8.

3. Trust Deposit. The Company shall pay Bonneville \$34,200 (\$53,200 - \$19,000) to be held in an account (Trust Deposit) established for the project to defray the Company's estimated share of the cost to the Government of performing the duties specified in Section 4.

4. Duties of Bonneville. Bonneville shall:

- (a) design, procure, install, and test the dual 75 amp battery charger system at Grizzly Substation;
- (b) design, install, and jointly test with the Company the power line carrier system used on the (PGE) Round Butte 500 kV line terminal at Grizzly Substation; and
- (c) design, procure, install, and test the SCADA RTU which replaces the existing GETAC unit.

5. **Duties of the Company.** The Company shall:

- (a) provide the indoor transmitter, receiver, and test panel equipment for the power line carrier system to Bonneville at Grizzly Substation;
- (b) test the power line carrier system jointly with Bonneville; and
- (c) make payment as required in sections 1 and 3.

6. **Ownership.** Title to and ownership of the facilities and equipment installed under this Table 8 shall be in accordance with section 5(a) of the Grizzly Substation Trust Agreement (Contract No. 14-03-56747), as amended, whereby an undivided sixty percent (60%) interest shall be and remain in the Government, and an undivided forty percent (40%) interest shall be and remain in the Company.

7. **Operation and Maintenance of Facilities.** Operation and maintenance of the facilities and equipment installed hereunder shall be in accordance with the Grizzly Substation Operation and Maintenance Trust Agreement (Contract No. 14-03-73941), whereby the Company shall pay Bonneville forty percent (40%) of the total cost of maintaining the jointly-owned facilities at Grizzly Substation.

If the terms of this Table 8 are acceptable to the Company, please indicate your acceptance by signing both enclosed copies and returning both copies with a check in the amount of the Trust Deposit to Bonneville. Upon execution by Bonneville, a fully executed original will be forwarded to the Company.

Sincerely,

  
 ACTING Administrator

Name John S. Robertson  
 (Print/Type)

Effective Date May 4, 1994

ACCEPTED:

PORTLAND GENERAL ELECTRIC COMPANY

By 

Name Fred H. Lamoureux  
 (Print/Type)

Title Vice President

Date May 3, 1994

BALTMAN:bda:5307:12/23/93 (PMTT-8180-C:\BA\K\PGE\92277K2.DOC)



**Department of Energy**  
 Bonneville Power Administration  
 P.O. Box 3621  
 Portland, Oregon 97208-3621

**AUG 11 1992**

OFFICE OF THE ADMINISTRATOR

In reply refer to: **PMTT**

Exhibit B  
 Table 9, Page 1 of 4  
 Contract No. DE-MS79-86BP92277  
 Effective on the Effective Date

Mr. Richard E. Dyer  
 Vice President  
 Marketing and Supply  
 Utility Operations  
 Portland General Electric Company  
 121 SW. Salmon Street  
 Portland, OR 97204

Dear Mr. Dyer:

Representatives of the Bonneville Power Administration (Bonneville) and Portland General Electric Company (Company) have agreed to provide the remedial action scheme, relaying, controls, and data systems at jointly-owned Grizzly Substation (Grizzly) for bays 2, 3, and 4 and the North and South Busses, Buckley and Summer Lake 500 kV line terminals, and the Company's Round Butte line terminal (Power System Controls). On July 29, 1988, the parties executed an Intertie Agreement, Contract No. DE-MS79-87BP92340, as amended, which established cost-sharing principles between the parties for the Joint AC Intertie. The Power System Controls are required for the Joint AC Intertie as identified in Exhibit B of the Intertie Agreement.

Accordingly, Bonneville and the Company hereby agree to the following terms and conditions:

1. Effective Date. Table 9 shall be effective on 2400 hours on the date (Effective Date) that Bonneville receives both (1) an original signed copy of this Table 9 by the Company; and (2) payment from the Company in the amount of the Trust Deposit specified in section 3.
2. Cost Sharing. The estimated cost of the Power System Controls is \$4,665,000 which includes appropriate overheads. Such costs shall be shared as follows:

<u>Party</u>	<u>Cost Share Percentage</u>	<u>Estimated Share of Power System Controls (\$)</u>
BPA	73	3,405,450
PGE	<u>27</u>	<u>1,259,550</u>
Total	100	4,665,000

Final sharing shall be based on actual costs including appropriate overheads. The overheads are fixed at the Effective Date of this Table 9.

3. Trust Deposit. The Company shall pay Bonneville \$1,259,550 to be held in an account (Trust Deposit) established for the Power System Controls to defray the Company's estimated share of the cost to the Government of performing the duties specified in section 4. The Company shall pay the Trust Deposit as follows:

- (a) \$895,000 on the date of execution of this Table 9; and
- (b) \$364,550 on March 1, 1993.

4. Duties of Bonneville. Bonneville shall:

- (a) design the Power System Controls, specifically:
  - (1) design, procure, and install the protective relaying scheme for the John Day Nos. 1 and 2 500 kV Lines, Captain Jack 500 kV line, Malin No. 2 500 kV line, and North and South buses;
  - (2) design, procure, and install control and data systems for the 500 kV PCB and MOD additions/replacements associated with bays 3, 4, and 6;
  - (3) design, procure, and install required line loss logic associated with items 4(a)(1) and 4(a)(2) above and test to the Remedial Action Scheme Central Controllers;
  - (4) add relaying and SCADA SER points associated with the new PCB in Bay 4 and the Company's reconfigured Round Butte line terminal;
  - (5) design, procure, and install the control, protective relaying schemes, and data systems for the Buckley and Summer Lake 500 kV line terminals;
  - (6) design, procure, and install required Line Loss Logic associated with item 4(a)(5) above and test to the Remedial Action Scheme Central Controllers;
- (b) forward the design for the Power System Controls to the Company for its review and comment;
- (c) purchase all related materials;
- (d) use its best efforts to install the Power System Controls in accordance with the design by December 1, 1992, for the items 4(a)(1)

through 4(a)(4) and by November 30, 1993, for the items 4(a)(5) and 4(a)(6) of this Table 9;

(e) test the Power System Controls jointly with the Company; and

(f) within a reasonable time, after completion of Bonneville's duties pursuant to section 4, forward to the Company a final accounting of the actual cost for installation of the Power System Controls.

5. Duties of the Company. The Company shall:

(a) review and comment on Bonneville's designs for the Power System Controls; and

(b) test the Power System Controls jointly with Bonneville.

6. Ownership. Title to and ownership of the facilities and equipment installed under this Table 9 shall be in accordance with section 8 of the Grizzly Substation Trust Agreement (Contract No. 14-03-56747), as amended, whereby an undivided sixty percent (60%) interest shall be and remain in the Government, and an undivided forty percent (40%) interest shall be and remain in the Company.

7. Operation and Maintenance of Facilities. Operation and maintenance of the facilities and equipment installed hereunder shall be in accordance with the Grizzly Substation Operation and Maintenance Trust Agreement (Contract No. 14-03-73941), whereby the Company shall pay Bonneville forty percent (40%) of the total cost of maintaining the jointly-owned facilities at Grizzly Substation.

If the terms of this Table 9 are acceptable, please indicate your acceptance by signing both enclosed copies and returning both copies with a check in the

Exhibit B  
Table 9, Page 4 of 4  
Contract No. DE-MS79-86BP92277  
Effective on the Effective Date

amount of the Trust Deposit to Bonneville. Upon execution by Bonneville, a fully executed original will be forwarded to the Company.

Sincerely,



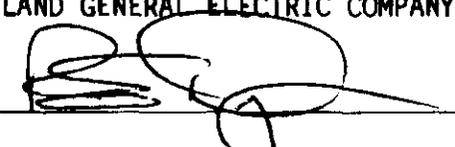
**ACTING** Administrator

STEVEN G. HICKOK  
(Print/Type)

Effective Date AUG 11 1992

ACCEPTED:

PORTLAND GENERAL ELECTRIC COMPANY

By 

Title Vice President  
(Print/Type)

Date July 31, 1992

(VS6-PMTT-3451e)



**Department of Energy**  
Bonneville Power Administration  
P.O. Box 3621  
Portland, Oregon 97208-3621

SEP 04 1992

OFFICE OF THE ADMINISTRATOR

In reply refer to: PMTT

Exhibit B  
Table 10 - Page 1 of 4  
Contract No. DE-MS79-86BP92277  
Effective on the Effective Date

Mr. Richard E. Dyer  
Vice President  
Marketing and Supply  
Utility Operations  
Portland General Electric Company  
121 SW. Salmon Street  
Portland, OR 97204

Dear Mr. Dyer:

Representatives of Bonneville Power Administration (Bonneville) and Portland General Electric Company (Company) have agreed to reterminate the Round Butte, John Day No. 1, Captain Jack, Buckley, Summer Lake 500 kV lines and Reactor Bank No. 2 (Reterminations) at the jointly-owned Grizzly Substation. On July 29, 1988, the parties executed an Intertie Agreement, Contract No. DE-MS79-87BP92340, as amended, which established cost-sharing principles between the parties in Exhibit B for the Plan-of-Service in the Joint AC Intertie. The Reterminations, as identified in Bonneville's project diagram, PD #196486, sheet No. 5 of 12, dated September 12, 1991, are required for the Joint AC Intertie.

Further, the Company has replaced its PCB No. 4052 during 1991, therefore, this construction plus the work described in section 4(a)(1) of this Table 10 shall represent completing the Round Butte PCB and MOD's as described in Exhibit B to the Intertie Agreement.

Accordingly, Bonneville and the Company hereby agree to the following terms and conditions:

1. Effective Date. Table 10 shall be effective at 2400 hours on the date (Effective Date) that Bonneville receives both (1) an original signed copy of this Table 10 by the Company; and (2) payment from the Company in the amount of the Trust Deposit specified in Section 3.
2. Cost Sharing. The estimated cost of the Reterminations is \$8,574,000 which includes thirty percent (30%) overheads. Such costs shall be shared as shown on the following Table 1:

TABLE 1

<u>Reterminations</u>	<u>BPA's Cost (\$)</u>	<u>Company's Cost (\$)</u>	<u>Total Cost (\$)</u>
(1) 7 PCB's, 12 MOD's, bus work modifications for Bays 1, 3, 4, and 6, associated towers, and 2 sets of main bus PT's.	8,289,000	0	8,289,000
(2) Reterminate Round Butte line through rigid bus into Bay 4 from Bay 5.	0	127,000	127,000
(3) BPA's Grizzly-Captain Jack line terminal surge arresters.	79,000	0	79,000
(4) Company's Grizzly-Malin No. 2 line terminal surge arresters.	<u>0</u>	<u>79,000</u>	<u>79,000</u>
<b>TOTAL</b>	<b><u>8,368,000</u></b>	<b><u>206,000</u></b>	<b><u>8,574,000</u></b>

Final sharing shall be based on actual costs including appropriate overheads fixed at the Effective Date of this Table 10.

3. Trust Deposit. The Company shall pay Bonneville \$206,000 to be held in an account (Trust Deposit) established for the Reterminations to defray the Company's estimated share of the cost to Bonneville for performing the duties specified in Section 4.

4. Duties of Bonneville. Bonneville shall:

(a) Design and construct the Reterminations, specifically:

(1) Reterminate the Round Butte, 500 kV line into Bay 4 from Bay 5 using rigid bus.

(2) Add a 500 kV PCB and associated MOD's between the reterminated Round Butte and John Day No. 1 lines in Bay 4.

(3) Reterminate Bonneville's Captain Jack 500 kV line into Bay 3 by adding 2-500 kV breakers and associated MOD's in Bay 3 and reterminating the Captain Jack line between the two breakers.

(4) Replace the Reactor Bank No. 2 500 kV load interrupting switch with a 500 kV breaker and reconnect Reactor Bank No. 2 to the South 500 kV main bus.

(5) Add 500 kV line surge arresters to the Company's Malin No. 2 and Bonneville's Captain Jack 500 kV line terminals.

(6) Add a set of 500 kV PT's on each main bus.

(b) Design and construct Bay 1 for the termination of Bonneville's Buckley-Summer Lake 500 KV line which includes 3-500 kV breakers, 6 MOD's and line PT's.

(c) Forward the design for the Reterminations to the Company for its review and comment.

(d) Purchase all required materials.

(e) Use its best efforts to complete Reterminations in accordance with the design by December 1, 1992, for items 4(a)(1) through 4(a)(6) and by November 30, 1993, for item 4(b) of this Table 10.

(f) Test the Reterminations jointly with the Company.

(g) Within a reasonable time, after completion of Bonneville's duties pursuant to this Section 4, forward a final accounting of the actual cost to the Company for installation of the Reterminations.

5. Duties of the Company. The Company shall:

(a) Review and comment on Bonneville's designs for the Reterminations, and

(b) Test the Reterminations jointly with Bonneville.

6. Ownership. Title to and ownership of the facilities and equipment installed under this Table 10 shall be in accordance with Table 2 below:

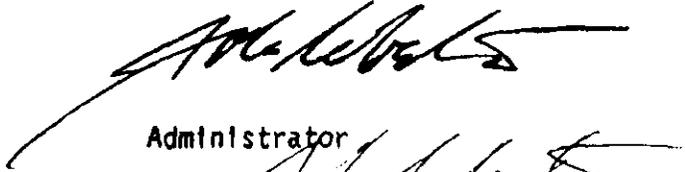
TABLE 2

<u>Reterminations</u>	<u>BPA</u>	<u>Company</u>
(1) 7 PCB's, 12 MOD's for Bays 1, 3, 4, and 6, associated towers (2), and main bus PT's.	100%	0%
(2) Rigid bus work between Bay 5 and Bay 4 for the purposes of reterminating the Round Butte 500 kV line.	0%	100%
(3) BPA's Captain Jack line surge arresters.	100%	0%
(4) Company's Malin No. 2 line surge arresters.	0%	100%

7. Operation and Maintenance of Facilities. Bonneville shall operate the facilities and equipment installed in this Table 10 in accordance with the Grizzly Substation O&M Trust Agreement, Contract No. 14-03-73941, whereby the Company shall pay forty percent (40%) of Grizzly operating costs. The Company shall maintain its facilities and equipment installed hereunder (items 2 and 4 listed in Table 2) at its own expense. Bonneville shall maintain its facilities and equipment installed hereunder (items 1 and 3 listed in Table 2) at its own expense.

If the terms of this Table 10 are acceptable, please indicate your acceptance by signing both enclosed copies and returning both copies with a check in the amount of the Trust Deposit to Bonneville. Upon execution by Bonneville, a fully executed original will be forwarded to the Company.

Sincerely,



Administrator

Name Jack Robertson  
(Print/Type)

Name Jack Robertson

Effective Date SEP 9 1992

ACCEPTED:

PORTLAND GENERAL ELECTRIC COMPANY

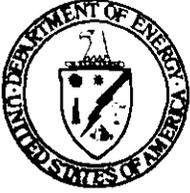
By 

Name R. E. Dyer  
(Print/Type)

Title Vice President

Date July 31, 1992

(VS6-PMTT-3547e)



**Department of Energy**  
 Bonneville Power Administration  
 P.O. Box 3821  
 Portland, Oregon 97208-3621

January 30, 1992

OFFICE OF THE ADMINISTRATOR

In reply refer to: PMTT

Exhibit B  
 Table 11, Page 1 of 3  
 Contract No. DE-MS79-86BP92277  
 Effective on the Effective Date

Mr. Richard E. Dyer  
 Vice President  
 Marketing and Supply  
 Utility Operations  
 Portland General Electric Company  
 121 SW. Salmon Street  
 Portland, OR 97204

Dear Mr. Dyer:

Representatives of the Bonneville Power Administration (Bonneville) and Portland General Electric Company (Company) have agreed to replace the protective relaying equipment and add automatic voltage control relaying for the shunt reactor bank No. 1 at the Grizzly Substation (Relay Additions). The Relay Additions are required due to (1) the obsolescence of the existing relaying equipment; and (2) the need to improve voltage controls at the Grizzly Substation to support the AC Intertie. The cost of such Relay Additions shall be shared by Bonneville and the Company.

Accordingly, Bonneville proposes the work be performed under the following terms and conditions:

- Effective Date. Table 11 shall be effective on 2400 hours on the date Bonneville receives both (1) an original signed copy of this Table 11 by the Company; and (2) payment from the Company in the amount of the Trust Deposit specified in section 3 (Effective Date).
- Cost Sharing. The total estimated cost of the Relay Additions, including applicable overheads, is \$49,400. Such estimated cost shall be shared by Bonneville and the Company in accordance with their percentage ownership of the jointly-owned property, as specified below, at the Grizzly Substation:

<u>Party</u>	<u>Joint Ownership</u> (%)	<u>Estimated Cost of</u> <u>Relay Addition</u> (\$)
Bonneville	60	29,640
Company	40	19,760
Total	100	49,400

Final sharing shall be based on actual cost including appropriate overheads. The overheads shall be fixed at the Effective Date of this Table 11.

3. Trust Deposit. The Company shall pay Bonneville \$19,760 to be held in an account (Trust Deposit) established for the Relay Additions to defray the Company's estimated share of the cost to the Government of performing the duties specified in section 4.

4. Duties of Bonneville. Bonneville shall:

(a) design the Relay Additions;

(b) forward to the Company for their review and comment, the design for the Relay Additions. Approval is needed by the Company for designs related to facilities owned by the Company;

(c) provide all necessary labor and materials and use its best efforts to complete the Relay Additions in accordance with the design by October 1992;

(d) test the Relay Additions jointly with the Company; and

(e) as soon as practicable, after completion of Bonneville's duties specified in section 4, forward to the Company a final accounting of the actual cost for the Relay Additions.

5. Duties of the Company. The Company shall:

(a) review and comment on Bonneville's design for the Relay Additions; and

(b) test the Relay Additions jointly with Bonneville.

6. Ownership. Title to and ownership of the facilities and equipment installed pursuant to section 4 shall be in accordance with Section 5 of the Grizzly Substation Trust Agreement (Contract No. 14-03-56747), as amended, whereby an undivided sixty percent (60%) interest shall be and remain in the Government, and an undivided forty percent (40%) interest shall be and remain in the Company.

7. Operation and Maintenance. Bonneville shall operate and maintain the facilities and equipment installed hereunder in accordance with the Grizzly Substation Operation and Maintenance Trust Agreement (Contract No. 14-03-73941), whereby the Company shall pay Bonneville forty percent (40%) of the total cost of maintaining the jointly-owned facilities at the Grizzly Substation.

If the terms of this Table 11 are acceptable, please indicate your acceptance by signing both enclosed copies and returning both copies with a check in the

Exhibit B  
Table 11, Page 3 of 3  
Contract No. DE-MS79-86BP92277  
Effective on the Effective Date

amount of the Trust Deposit to Bonneville. Upon execution by Bonneville, a fully executed original will be forwarded to the Company.

Sincerely,

/s/ STEVEN G. HICKOK (Acting)  
Administrator

**ACTING**



Administrator

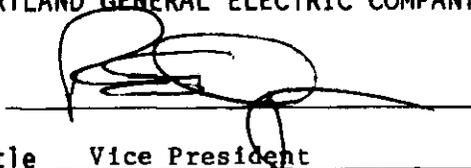
February 7, 1992

Effective Date February 7, 1992

ACCEPTED:

PORTLAND GENERAL ELECTRIC COMPANY

By

  
Title Vice President

Date January 25, 1992

/s/ RICHARD E. DYER

Vice President

January 25, 1992

(VS6-PMTT-3460e)



**Department of Energy**  
Bonneville Power Administration  
P.O. Box 3621  
Portland, Oregon 97208-3621

September 23, 1993

OFFICE OF THE ADMINISTRATOR

In reply refer to: PMTT

Exhibit B, Table 12  
Page 1 of 3  
Contract No. DE-MS79-86BP92277  
Effective at 2400 Hours On  
the Effective Date

Mr. Richard E. Dyer  
Vice President  
Marketing and Supply  
Utility Operations  
Portland General Electric Company  
121 SW. Salmon Street  
Portland, OR 97204

Dear Mr. Dyer:

On July 29, 1988, Bonneville Power Administration (Bonneville) and Portland General Electric Company (Company) executed Contract No. DE-MS79-87BP92340 (Intertie Agreement) which, among other things, provides the Principles for the Plan-of-Service to increase the Rated Transfer Capability of the Northwest AC Intertie to 4800 MW. On September 9, 1992, the parties executed Trust Table No. 10 to this Agreement which provided for, among other things, the construction of a 500 kV dead-end tower (Dead-End Tower) in the Company's 500 kV Malin No. 2 line. This Trust Table No. 12 (Trust Table 12) provides for the reconnection of the Company's Malin No. 2 500 kV transmission line to the Dead-End Tower (Reconnection).

Accordingly, Bonneville and the Company hereby agree to the following terms and conditions:

1. Effective Date. This Table 12 shall be effective as of 2400 hours on the date (Effective Date) which shall be the later of (a) Bonneville receives both (1) an original signed copy of this Table 12 by the Company; and (2) payment from the Company in the amount of the Trust Deposit specified in Section 3; or (b) acceptance for filing by the Federal Energy Regulatory Commission of this Table 12.
2. Cost Sharing. The estimated total cost for Bonneville to perform the duties as described in Section 4 is \$52,000 which includes appropriate overheads. Such costs shall be shared as shown on the following Table 1:

Table 1

<u>Project Facility</u>	<u>Bonneville Cost</u>	<u>Company Cost</u>
Reconnection	\$ 45,113	\$6,887

Final costs for the Reconnection shall be based on actual costs including appropriate overheads fixed at the Effective Date of this Table 12. Final costs for the Company's share will be the sum of the actual material cost of the line tap jumpers including an appropriate overhead plus a fixed labor cost of \$3,715, which includes an appropriate overhead.

3. Trust Deposit. The Company shall pay Bonneville \$6,887 to be held in an account (Trust Deposit) established for the Reconnection to defray the Company's cost to Bonneville for performing the duties specified in Section 4.

4. Duties of Bonneville.

(a) Bonneville shall provide for the Reconnection including labor, insulators, and line tap jumpers.

(b) Jointly with the Company, test the Reconnection.

5. Duties of the Company.

(a) Review and comment on Bonneville's design for the Reconnection, and

(b) Jointly with Bonneville, test the Reconnection.

6. Ownership. Title and ownership of the Dead End Tower installed under Trust Table 10 to this Agreement shall be with Bonneville. Title to and ownership of the Reconnection including the dead-end insulation strings, suspension insulator hardware, and the line tap jumpers, installed under this Table 12 shall be with the Company.

7. Operations and Maintenance. Bonneville shall maintain the Dead End Tower at the sole expense of Bonneville. The Company shall maintain the Reconnection, including the dead end insulation string, suspension insulator hardware, and the line tap jumpers installed under this Table 12 at the sole expense of the Company.

If the terms of this Table 12 are acceptable to the Company, please indicate your approval by signing both enclosed copies and returning both copies with a

Exhibit B, Table 12  
Page 3 of 3  
Contract No. DE-MS79-86BP92277  
Effective at 2400 Hours On  
the Effective Date

check in the amount of the Trust Deposit to Bonneville. Upon execution by Bonneville, a fully-executed original will be forwarded to the Company.

Sincerely,

  
Administrator

Name Randall W. Hardy  
(Print/Type)

Effective Date October 4, 1993

ACCEPTED:

PORTLAND GENERAL ELECTRIC COMPANY

By 

Name Richard E. Byer  
(Print/Type)

Title Vice President, Marketing & Supply

Date 9/16/93

(VS10-PMTT-3599e)