



Portland General Electric Company

Trojan Nuclear Plant
71760 Columbia River Hwy
Rainier OR 97048
(503) 556-3713

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VPN-008-99

Trojan Nuclear Plant
Docket 50-344, 72-017
License NPF-1

U. S. Nuclear Regulatory Commission
ATTN: Document Control Desk
Washington, D.C. 20555

Annual Report of the Status of Decommissioning Funding for the
Trojan Nuclear Plant (TNP) in Accordance With 10 CFR 50.75(f)(1)

In accordance with 10 CFR 50.75(f)(1), this letter transmits the TNP co-owners' annual report of the status of decommissioning funding for the TNP. This report, provided in Enclosure I to this letter, is based on the most recent analysis of the TNP decommissioning cost estimate and funding plan as incorporated into Revision 6 of PGE-1061, "Trojan Nuclear Plant Decommissioning Plan."

For convenience, a copy of Section 5, "Decommissioning Cost Estimate and Funding Plan," of the TNP Decommissioning Plan, Revision 6, is provided in Enclosure II. The decommissioning cost estimate and funding plan is updated to reflect actual expenditures and fund balances through December 31, 1998. The cost estimate revision also incorporates the actual inflation rate for 1997, which had been estimated in the previous revision, and reflects updated projections associated with staffing, radiological waste burial costs, and work schedules.

Sincerely,

Stephen M. Quennoz
Vice President, Nuclear
and Thermal Operations

Enclosures

c: L. H. Thonus, NRC, NRR
T. J. Kobetz, NRC, NMSS
R. A. Scarano, NRC Region IV
David Stewart-Smith, OOE
A. Bless, OOE

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PDR ADJCK 05000344
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Annual Report of the Status of Decommissioning Funding for
the Trojan Nuclear Plant in Accordance With 10 CFR 50.75(f)(1)

As required by 10 CFR 50.75(f)(1), this report constitutes Portland General Electric's (PGE's) annual report of the status of decommissioning funding for the Trojan Nuclear Plant (TNP). The information provided herein is based on the most recent analysis of the TNP decommissioning cost estimate and funding plan as detailed in Section 5 of PGE-1061, "Trojan Nuclear Plant Decommissioning Plan," Revision 6. For convenience, a copy of Section 5, "Decommissioning Cost Estimate and Funding Plan," of the TNP Decommissioning Plan, Revision 6, is provided in Enclosure II to VPN-008-99 concurrently with this report.

10 CFR 50.75(f)(1) states, in part:

Each power reactor licensee shall report, on a calendar-year basis, to the NRC by March 31, 1999, ...on the status of its decommissioning funding for each reactor or part of a reactor that it owns. The information in this report must include, at a minimum:

- 1. The amount of decommissioning funds estimated to be required pursuant to 10 CFR 50.75(b) and (c);*
- 2. The amount accumulated to the end of the calendar year preceding the date of the report;*
- 3. A schedule of the annual amounts remaining to be collected;*
- 4. The assumptions used regarding rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections;*
- 5. Any contracts upon which the licensee is relying pursuant to paragraph (e)(1)(v) of this section;*
- 6. Any modifications occurring to a licensee's current method of providing financial assurance since the last submitted report; and*
- 7. Any material changes to trust agreements.*

This report addresses the content and schedular requirements of 10 CFR 50.75(f)(1) as follows:

- 1. The amount of decommissioning funds estimated to be required pursuant to 10 CFR 50.75(b) and (c).*

The amount of funds estimated to be required to decommission the TNP has been determined based on a TNP-specific cost estimate prepared by PGE with assistance from TLG Services, Inc. (TLG). As indicated in the TNP Decommissioning Plan, Section 5.1 and Table 5.1-1, the total costs in 1997 dollars are estimated to be approximately \$239,893,000 for radiological decommissioning activities, approximately \$51,138,000 for nonradiological decommissioning

activities (site restoration), and approximately \$132,527,000 for dry spent fuel storage. Costs associated with securing and maintaining decommissioning financial assurance and bridging funds are projected to total approximately \$9,566,000. A detailed schedule of the TNP decommissioning and spent fuel management costs, totaling approximately \$433,124,000 of decommissioning trust fund-related expenditures, is provided in Section 5.1 and Table 5.1-2 of the TNP Decommissioning Plan.

2. *The amount accumulated to the end of the calendar year preceding the date of the report.*

The table below reflects the amount of decommissioning funds accumulated by the TNP co-owners through December 31, 1998. Each of the TNP co-owners separately collect and maintain funds for the decommissioning of the TNP. These funds are collected through rates and deposited to external trust funds in accordance with 10 CFR 50.75. Additional details of the TNP decommissioning funding plans and schedules for each of the TNP co-owners are provided in Section 5.3 of the TNP Decommissioning Plan.

Status of Decommissioning Trust Funds
As of December 31, 1998

TNP Co-Owner	Fund Balance as of 12/31/98 ^a
Portland General Electric	\$62,858,000
Eugene Water & Electric Board (EWEB)/ Bonneville Power Administration (BPA)	\$14,207,000
Pacific Power & Light (PP&L)	\$3,387,000
Total	\$80,452,000

^a The 1998 end-of-year trust fund balances include an adjustment for trust expenditures incurred in November and December 1998 that were not paid out of the trusts in 1998.

3. *A schedule of the annual amounts remaining to be collected.*

The decommissioning trust fund cash flow for each of the TNP co-owners is described in Section 5.3 and quantified in Tables 5.3-2 through 5.3-4 of the TNP Decommissioning Plan. As detailed in Section 5.3.2 of the TNP Decommissioning Plan, each TNP co-owner maintains a decommissioning fund collection schedule which ensures that each co-owner's portion of the decommissioning activity expenditures will be fully funded. These trust fund contribution

schedules are based on funding requirements for both radiological and nonradiological decommissioning costs, as well as financing costs and specific spent fuel management costs including planning, design, construction, operation and maintenance (O&M), and decommissioning of an independent spent fuel storage installation (ISFSI). The collection schedules do not include funding for spent fuel pool O&M costs since these costs are being paid with O&M budget funds rather than decommissioning trust funds.

4. *The assumptions used regarding rates of escalation in decommissioning costs, rates of earnings on decommissioning funds, and rates of other factors used in funding projections.*

The following table provides the TNP co-owners' assumptions regarding escalation, earnings, and interest rates used to project the TNP decommissioning cost and funding schedules as reflected in Section 5 of the TNP Decommissioning Plan.

Assumptions Regarding
 Escalation, Earnings, and Interest Rates

TNP Co-Owner	Escalation Factor ^a (%)	Trust Fund Earnings Rate ^b (%)	Bridge Loan Interest Rate ^c (%)	Line of Credit Fees ^d (%)
PGE	2.37	^e 5.27 ^f 4.14	^g 5.55	0.35
BPA/EWEB	2.37	5	N/A	N/A
PP&L	2.37	4.5	N/A	0.5

^a The escalation rate assumption of 2.37% represents the average of WEFA projected inflation rates for 1999 through 2023.

^b Each TNP co-owner assumed a trust fund earnings rate based on recent fund earning performance with consideration for projected near-term growth and conservatism.

^c Bridge loans for BPA and PP&L are not projected to be necessary.

^d BPA plans to use a letter of intent, rather than a line of credit, to provide financial assurance in accordance with 10 CFR 50.75(e)(1)(iv).

^e This rate is applied to the qualified portion of PGE's trust fund.

^f This rate is applied to the non-qualified portion of PGE's trust fund.

^g The yield spread portion of this value is the average of the WEFA forecasted 5-year note for 2000 and 2001 (the years in which it is projected that the largest bridge loans may be secured) less projected inflation.

5. *Any contracts upon which the licensee is relying pursuant to paragraph (e)(1)(v) of this section.*

The TNP co-owners do not rely on contractual obligations from customers to satisfy the financial assurance stipulations of 10 CFR 50.75(e)(1). For PGE and PP&L, the financial assurance mechanism will consist of the decommissioning trust fund balance together with a letter of credit in accordance with 10 CFR 50.75(e)(1)(ii) and (iii). As allowed by 10 CFR 50.75(e)(1)(iv), BPA, as a Federal government entity fulfilling the decommissioning funding obligations of EWEB, a licensee, will provide financial assurance in the form of a statement of intent.

6. *Any modifications occurring to a licensee's current method of providing financial assurance since the last submitted report.*

As of December 31, 1998, no modifications have occurred since the last funding plan submittal to the TNP co-owners' planned methods of providing financial assurance that adequate funds will be available to complete radiological decommissioning of the TNP site. A description of the current method each of the TNP co-owners will use to provide financial assurance is provided in Section 5.3.2 of the TNP Decommissioning Plan. As stated above, for PGE and PP&L, the financial assurance mechanism will consist of the decommissioning trust fund balance together with a letter of credit. The methodology used to determine the size of the letter of credit is described in Section 5.3.2.1 of the TNP Decommissioning Plan. BPA, as a Federal government entity fulfilling the decommissioning funding obligations of EWEB, a licensee, will provide financial assurance in the form of a statement of intent in accordance with 10 CFR 50.75(e)(1)(iv).

7. *Any material changes to trust agreements.*

The TNP co-owners have not made any material changes to the decommissioning trust agreements since the last funding plan submittal.

Enclosure II to VPN-008-99

**Section 5, "Decommissioning Cost Estimate and Funding Plan" of
PGE-1061, "Trojan Nuclear Plant Decommissioning Plan," Revision 6**

5. DECOMMISSIONING COST ESTIMATE AND FUNDING PLAN

In accordance with 10 CFR 50.82(a)(4), the TNP-specific cost estimate and funding plan as incorporated into this section provide:

1. An updated estimate of total and remaining TNP decommissioning costs;
2. A comparison of the estimated costs with present funds set aside for decommissioning; and
3. The plan for assuring the availability of adequate funds for completion of decommissioning and release of the TNP site for unrestricted use.

5.1 DECOMMISSIONING COST ESTIMATE

This section provides the results of and basis for a cost estimate prepared by PGE with assistance from TLG Services, Inc. (TLG) for the decommissioning of TNP. Incorporated into this cost estimate are costs of activities involved in radiological decommissioning necessary for termination of TNP's Part 50 license, as well as expenditures necessary to complete nonradiological site restoration activities. The costs of removal and disposal of nonradioactive structures and materials beyond that necessary for license termination have been identified separately from radiological decommissioning costs.

Also separately identified are cost projections and funding requirements for the onsite management of irradiated fuel until possession and title of the irradiated fuel is transferred to DOE for ultimate disposal. The description of the spent fuel management costs and associated funding plan provided in this section, together with the description of the spent fuel management program in Section 3.3.1, fulfill the requirements of 10 CFR 50.54(bb).

5.1.1 COST ESTIMATE RESULTS

Summarizing the results of the TNP cost estimate, Table 5.1-1 provides estimates of total decommissioning costs as well as decommissioning costs that remain as of January 1, 1999. As indicated in Table 5.1-1, the costs (in 1997 dollars) for the selected decommissioning alternative are estimated to total approximately \$239,893,000 for radiological decommissioning activities, approximately \$51,138,000 for nonradiological decommissioning activities (site restoration), and approximately \$132,527,000 for dry spent fuel storage. Costs associated with securing and maintaining decommissioning financial assurance and bridging funds are projected to total approximately \$9,566,000. A detailed schedule of TNP's decommissioning and spent fuel management costs, totaling approximately \$433,124,000 of decommissioning trust fund-related expenditures, is provided in Table 5.1-2 and described in Section 5.1.2.

5.1.2 COST ESTIMATE DESCRIPTION

The initial Decommissioning Plan decommissioning cost estimate was based largely on the TNP-specific cost estimate performed for PGE by TLG Services, Inc. in May 1994. The methodology used to develop the cost estimate followed the approach presented in AIF/NESP-036, "Guidelines to Producing Decommissioning Cost Estimates," and the DOE "Decommissioning Handbook." These guidance documents utilize a unit cost factor method for estimating decommissioning activity costs. Unit cost factors incorporate site-specific considerations whenever practicable. Using plant drawings and inventory documents, quantities and volumes of the equipment and material to be removed during decommissioning were estimated. Unit cost factors were applied to the volumes and quantities to estimate the "activity dependent" costs. "Period dependent" costs were determined from a critical path schedule based on the removal activity duration.

At the end of each year, PGE updates the decommissioning cost estimate based on actual decommissioning progress and with an estimate of remaining costs based on the best available information about the remaining scope of the decommissioning effort. The update generally results in changes to the timing of fund expenditures, and may reflect changes to the scope of major projects. The cost estimate reflects updated staffing requirements, remaining scheduled decommissioning equipment removal efforts, adjustments for current radioactive waste disposal volumes and costs, and an update of the estimate to disposition non-radiological hazards.

The results of PGE's decommissioning cost estimate have been incorporated into Table 5.1-2, which provides a comprehensive expenditure schedule for the decommissioning of TNP. This table incorporates an annual breakdown of projected costs associated with radiological and nonradiological decommissioning, spent fuel management, and decommissioning expenditure financing activities. The decommissioning cost estimate expenditure schedule contained in Table 5.1-2 is described in the remainder of this section.

5.1.2.1 Radiological Decommissioning Costs

The cost schedule for radiological decommissioning activities is incorporated into Table 5.1-2, which reflects the results of the decommissioning cost estimate for TNP. Consistent with current NRC policy, the TNP decommissioning cost estimate considers radiological decommissioning costs to be only those costs associated with normal decommissioning activities necessary for termination of the Part 50 license and release of the site for unrestricted use. The decommissioning cost estimate does not include in radiological decommissioning costs those costs associated with spent fuel management or the disposal of nonradioactive structures and materials beyond that necessary to terminate TNP's Part 50 license.

Radiological decommissioning activity costs are separately identified in Table 5.1-2 as "DECON/License Termination." Burial costs were derived from PGE modeling and analysis of low-level radioactive waste disposal costs as updated in early 1999, which more conservatively reflect projected burial rates. Contingencies were applied to each area of the cost estimate (i.e., decontamination and dismantlement, waste disposal, final survey, etc.) at appropriate rates. No credit was taken for equipment salvage value.

Standard ongoing financial controls have been established and executed to ensure funds are expended consistent with the provisions of 10 CFR 50.82(a)(8). Throughout the budgetary process and budget year, costs associated with new projects or activities are evaluated to determine their correct cost classification, i.e., fuel management, radiological, nonradiological decommissioning, etc. As a result, only costs which meet the intent of the TNP Decommissioning Plan and TNP License Termination Plan, upon approval, are submitted for reimbursement from the decommissioning trust. Periodically, variances between the estimate and actual costs will be reviewed as they relate to the total cost estimate to provide assurance that the cost estimate continues to be reasonable. This complies with 10 CFR 50.82(a)(8)(i)(A). In addition, PGE corporate finance personnel review the TNP co-owners' trust fund activity and balance periodically. Any significant activity which is inconsistent with the Decommissioning Plan and License Termination Plan, upon approval, would be brought to the attention of TNP management.

The decommissioning cost estimate reflects costs in 1997 dollars, and has been updated to account for work performed through 1998 where TNP expended funds for decommissioning activities. The decommissioning cost estimate reflects updated staffing requirements, remaining scheduled decommissioning equipment removal efforts, and adjustments for radioactive waste disposal volumes and costs to reflect the latest burial cost projections.

Costs required to maintain spent fuel in a safe storage condition are not funded by the trust fund while the spent fuel remains in wet storage. Once the spent fuel is transferred to dry storage, there are sufficient trust fund annual contributions to cover annual costs. This is described in Sections 5.2 and 5.3.2 and Table 5.1-2. This complies with 10 CFR 50.82(a)(8)(i)(B).

In accordance with 10 CFR 50.82(a)(8)(i)(C) and 10 CFR 50.75(e), the TNP co-owners periodically assess the financial assurance amount required to complete radiological decommissioning. The established financial assurance mechanisms (i.e., letter of credit) are adjusted as necessary to ensure that the sum of trust fund balances and letter of credit amounts equals the amount needed to complete radiological decommissioning. "Bridge" funds are described in Section 5.3.

5.1.2.2 Nonradiological Decommissioning Costs

Although not required by NRC regulations, the decommissioning cost estimate for TNP incorporates nonradiological decommissioning costs, as indicated in Table 5.1-2. The TNP decommissioning cost estimate considers nonradiological decommissioning costs to be those costs associated with site remediation and demolition and removal of uncontaminated structures. The decommissioning cost estimate does not include in nonradiological decommissioning costs those costs associated with spent fuel management or radiological decommissioning activities.

5.1.2.3 Spent Fuel Management Costs

Implementation costs associated with spent fuel management are reflected in the projected cost schedule for the onsite management of irradiated fuel detailed in Table 5.1-2. Spent fuel management costs begin with ongoing spent fuel pool operation, surveillance, and maintenance activity costs, and continue through ISFSI planning, construction, and operation until possession and title of the irradiated fuel is transferred to the DOE for ultimate disposal (assumed in this estimate to be completed in 2018). As indicated in Table 5.1-2, spent fuel pool operation expenditures are projected to end in early 2000 as a result of the transfer of the spent fuel pool contents to the ISFSI. Costs associated with onsite management of the spent fuel will then involve ISFSI operation, maintenance, and surveillance expenditures. Finally, upon transfer of the ISFSI contents to an offsite repository, spent fuel management costs end in 2018 with final expenditures necessary for ISFSI decommissioning activities.

PGE has analyzed spent fuel operations and maintenance costs related to storage in both the spent fuel pool and the ISFSI. The methodology used in this analysis considered plant-specific values, as applicable, for labor, material, and outside professional services requirements as well as for other distributed items such as overheads, property and liability insurance, regulatory fees, fire protection activities, and power usage. The results of this analysis were then incorporated into the decommissioning cost study.

5.1.2.4 Financial Activity Costs

Additional costs may be incurred by each TNP co-owner as necessary during decommissioning to secure and maintain assurance that adequate funds will be available to complete radiological decommissioning of the TNP site, and to secure loans or other "bridging" mechanisms to augment existing funds to cover near-term decommissioning costs. The financial assurance costs (e.g., letter of credit and loan interest fees) indicated in Table 5.1-2 are based on the basis points and projected amount of required financial assurance appropriate for each co-owner as described in Section 5.3, "Decommissioning Funding Plan." The loan costs in Table 5.1-2 are based on the interest rate and loan amount appropriate for each TNP co-owner requiring

financial bridging as described in Section 5.3. The method which each co-owner will use to provide the required financial assurance mechanism, and bridging funds is described in detail in Section 5.3.

5.2 SPENT FUEL MANAGEMENT FUNDING PLAN

Spent fuel management costs are segregated in Table 5.1-2 into spent fuel pool operation costs and dry storage (ISFSI) costs. Ongoing costs associated with the storage of spent fuel and other high-level radioactive waste in the spent fuel pool are currently incorporated into the TNP O&M budget, and are expected to continue to be funded in this manner until the contents of the spent fuel pool are transferred to the ISFSI. Costs associated with dry storage activities, including ISFSI planning, construction, O&M, and decommissioning, as reflected under the column heading "Dry Storage" in Table 5.1-2, will be funded with decommissioning trust funds collected for that purpose. Additional details on the decommissioning trust fund collections for each TNP co-owner are provided in Section 5.3.

5.3 DECOMMISSIONING FUNDING PLAN

5.3.1 CURRENT DECOMMISSIONING FUNDING CAPABILITIES

Each of the TNP co-owners separately collect and maintain funds for the decommissioning of TNP. These funds are collected through rates and deposited to external trust funds in accordance with 10 CFR 50.75. Because the TNP was shutdown prematurely, the external trust funds established by the TNP co-owners currently contain only a portion of the total amount needed for site radiological decommissioning. Table 5.3-1 summarizes the status of the TNP co-owners' decommissioning trust funds as of December 31, 1998.

The NRC's general policy requires, prior to the start of the Decontamination and Dismantlement Period, either funds needed for decommissioning (as the term "decommission" is defined in 10 CFR 50.2, "Definitions") to be available or an appropriate financial vehicle to be secured and maintained that will assure the availability of adequate funds for completion of radiological decommissioning. As indicated above, the trusts established by the TNP co-owners for decommissioning will not contain the funds necessary for completion of radiological decommissioning prior to the start of the Decontamination and Dismantlement Period. Thus prior to commencing this period, each TNP co-owner is required to secure a financial assurance mechanism allowed by 10 CFR 50.75(e). This financial assurance must be maintained until termination of TNP's Part 50 license. Furthermore, during the Decontamination and Dismantlement Period, a co-owner's decommissioning trust fund balance may be reduced to a point where it will be necessary in certain instances to borrow or otherwise provide "bridging" funds to complete decontamination activities and allow scheduled collections to restore the decommissioning trust fund balance.

5.3.2 TNP CO-OWNERS' DECOMMISSIONING FUNDING PLANS

Each of the TNP co-owners has established a program in conjunction with specified goals for the collection of funds for the decommissioning of TNP. Each TNP co-owner maintains a decommissioning fund collection schedule which ensures that each co-owner's portion of the decommissioning activity expenditures will be fully funded. These trust fund contribution schedules are based on funding requirements for both radiological and nonradiological decommissioning costs, as well as financing costs and specific spent fuel management costs including planning, design, construction, O&M, and decommissioning of an ISFSI. These collection schedules do not include funding for spent fuel pool O&M costs since these costs are being paid with O&M budget funds rather than decommissioning trust funds. The decommissioning trust fund cash flow for each of the TNP co-owners, based on the expenditure schedule in Table 5.1-2 and the co-owner contribution schedules, is described below.

5.3.2.1 PGE Funding

Table 5.3-2 provides PGE's decommissioning trust fund cash flow in nominal dollars (2.37% escalation) during decommissioning. The trust fund expenditures described in this table are PGE's share (67.5%) of the expenditures described in Table 5.1-2, with the exception of spent fuel pool O&M costs since these costs are being paid with O&M budget funds rather than decommissioning trust funds. The trust fund contributions listed in Table 5.3-2 are based upon PGE's decommissioning trust fund contribution schedule which ensures that PGE's portion of the decommissioning activity expenditures will be fully funded.

Projected requirements for bridging funds have been incorporated into PGE's decommissioning trust fund cash flow. As previously discussed, PGE's external trust fund currently contains only a portion of the total amount needed for PGE's share of site radiological decommissioning costs. Based on the decommissioning trust fund cash flow analysis presented in Table 5.3-2, bridging funds are anticipated to be required in the year 2000 to complete decontamination activities and allow scheduled collections to restore the decommissioning trust fund balance. Projected interest on bridging funds has been incorporated into PGE's trust fund cash flow as indicated in Table 5.3-2.

In addition, because the trusts established by the TNP co-owners for decommissioning will not contain the funds necessary for completion of radiological decommissioning prior to the start of the Decontamination and Dismantlement Period, each TNP co-owner must secure a financial assurance mechanism allowed by 10 CFR 50.75, and maintain this assurance until termination of TNP's Part 50 license. PGE's financial assurance mechanism will consist of the decommissioning trust fund balance together with a letter of credit. Because financial assurance will be maintained only for radiological decommissioning activities, the methodology used to determine the size of the letter of credit ensures that if a given amount of

the decommissioning trust fund is used for purposes other than radiological decommissioning activities during a current year, the portion of the financial assurance provided by the letter of credit must be increased by the same amount. This methodology can be summarized as follows:

$$L_{fa} = T_1 - T_2 + T_3 \quad \text{where}$$

L_{fa} = Letter of Credit Portion of Financial Assurance Needed for Current Year

T_1 = Total costs of remaining radiological decommissioning activities

T_2 = Current decommissioning trust fund balance

T_3 = Portion of trust balance planned for non-radiological costs during current year

Financial assurance for remaining radiological decommissioning activities will be calculated at the beginning of each year and will be periodically reviewed during each year to ensure that an adequate level of financial assurance is maintained.

5.3.2.2 EWEB/BPA Funding

BPA is obligated through Net Billing Agreements to pay costs associated with EWEB's share of TNP, including decommissioning and spent fuel management costs. BPA will fulfill the decommissioning funding obligations of EWEB, including providing financial assurance for EWEB's portion of decommissioning costs in a manner stipulated in 10 CFR 50.75(e)(1)(iv) for Federal government licensees. Table 5.3-3 provides BPA/EWEB's decommissioning trust fund cash flow in nominal dollars (2.37% escalation) during decommissioning. The trust fund expenditures described in this table are BPA/EWEB's share (30%) of the expenditures described in Table 5.1-2, with the exception of spent fuel pool O&M costs since these costs are being paid with O&M budget funds rather than decommissioning trust funds. The trust fund contributions listed in Table 5.3-3 are based upon BPA/EWEB's decommissioning trust fund contribution schedule which ensures that BPA/EWEB's portion of the decommissioning activity expenditures will be fully funded.

Projected requirements for bridging funds have been incorporated into BPA/EWEB's decommissioning trust fund cash flow. As previously discussed, BPA/EWEB's external trust fund currently contains only a portion of the total amount needed for BPA/EWEB's share of site radiological decommissioning costs. Based on the decommissioning trust fund cash flow analysis presented in Table 5.3-3, bridging funds will be required to complete decontamination activities and allow scheduled collections to restore the decommissioning trust fund balance. These bridging funds are not expected to incur interest costs since BPA, as a government entity, will provide the additional decommissioning funding when necessary according to the schedule listed in Table 5.3-3.

As allowed by 10 CFR 50.75(e)(1)(iv), BPA, as a Federal government entity fulfilling the decommissioning funding obligations of EWEB, a licensee, will provide financial assurance in the form of a statement of intent. The statement of intent will contain a reference to the TNP decommissioning cost estimate described in Section 5.1, indicating that funds for radiological decommissioning will be obtained when necessary.

5.3.2.3 PP&L Funding

Table 5.3-4 provides PP&L's decommissioning trust fund cash flow in nominal dollars (2.37% escalation) during decommissioning. The trust fund expenditures described in this table are PP&L's share (2.5%) of the expenditures described in Table 5.1-2, with the exception of spent fuel pool O&M costs since these costs are being paid with O&M budget funds rather than decommissioning trust funds. The trust fund contributions listed in Table 5.3-4 are based upon PP&L's decommissioning trust fund contribution schedule which ensures that PP&L's portion of the decommissioning activity expenditures will be fully funded.

Based on the decommissioning trust fund cash flow analysis presented in Table 5.3-4, PP&L's decommissioning trust balance will remain adequately funded during decommissioning such that bridging funds will not be required. However, because the trusts established by the TNP co-owners for decommissioning will not contain the funds necessary for completion of radiological decommissioning prior to the start of the Decontamination and Dismantlement Period, PP&L must secure a financial assurance mechanism allowed by 10 CFR 50.75, and maintain this assurance until termination of TNP's Part 50 license. PP&L's financial assurance mechanism will consist of the decommissioning trust fund balance together with a letter of credit. The methodology for determining the size of the letter of credit is as described in Section 5.3.2.1, "PGE Funding."

Table 5.1-1

Estimate of "Trust Fund" Decommissioning Costs
(1997 dollars)

	Total (Start-to-Finish) Costs	Total Costs Remaining as of January 1, 1999	
Radiological (NRC) Decommissioning Costs			
Reactor Vessel and Internals Removal and Disposal	25,898,000	14,386,000	
Dismantlement, Decontamination, and Remediation	157,200,000	97,853,000	
Waste Disposal	38,233,000	23,888,000	
Final Survey	18,562,000	17,802,000	
Total	239,893,000	153,929,000	
Nonradiological Decommissioning Costs			
Site Restoration	51,138,000	50,517,000	
Total	51,138,000	50,517,000	
Dry Spent Fuel Management Costs			
ISFSI Construction and Decommissioning	62,925,000	41,109,000	
ISFSI Operation and Maintenance	69,602,000	69,496,000	
Total	132,527,000	110,605,000	
Financing Costs			
Financial Assurance	461,000	461,000	
Decommissioning Bridge Loans	9,105,000	9,105,000	
Total	9,566,000	9,566,000	
Total Trust Fund Expenditures	\$433,124,000	\$324,617,000	

Table 5.1-2
Decommissioning Cost Estimate
Itemized Decommissioning Ex
(1997 \$ x 100)

Total Trust Expenditures						Radiological Decommissioning
Year	Total Radiological Decommissioning Expenditures	Total Nonradiological Decommissioning Expenditures	Total Spent Fuel Management Expenditures	Total Financing Activity Expenditures	Total Combined Trust Expenditures	DECON / License Termination
1993	0	0	0	0	0	
1994	7,992	0	0	0	7,992	7,992
1995	15,837	0	1,102	0	16,939	15,837
1996	8,529	492	3,144	0	12,165	8,529
1997	19,309	45	7,974	0	27,328	19,309
1998	34,297	86	9,703	0	44,086	34,297
1999	55,029	8,286	26,354	0	89,669	55,029
2000	43,324	5,059	12,272	637	61,292	43,324
2001	39,168	3,083	3,739	1,462	47,452	39,168
2002	14,672	1,719	3,736	1,930	22,057	14,672
2003	1,736	335	3,729	1,977	7,777	1,736
2004	0	304	3,718	1,569	5,591	
2005	0	304	3,703	1,114	5,121	
2006	0	305	3,681	660	4,646	
2007	0	304	3,655	205	4,164	
2008	0	304	3,621	11	3,936	
2009	0	305	3,580	1	3,886	
2010	0	304	3,533	0	3,837	
2011	0	304	3,476	0	3,780	
2012	0	304	3,476	0	3,780	
2013	0	304	3,476	0	3,780	
2014	0	304	3,476	0	3,780	
2015	0	304	3,476	0	3,780	
2016	0	304	3,476	0	3,780	
2017	0	304	3,476	0	3,780	
2018	0	10,933	10,951	0	21,884	
2019	0	14,105	0	0	14,105	
2020	0	304	0	0	304	
2021	0	304	0	0	304	
2022	0	304	0	0	304	
2023	0	1,825	0	0	1,825	
Total	238,893	51,138	132,527	9,566	433,124	239,893

for Trojan Nuclear Plant
Expenditure Schedule
(D)

**APERTURE
CARD**

Also Available on
Aperture Card

Nonradiological Decommissioning	Spent Fuel Management			Financing Activities	
	SFP	Dry Storage			
Remediation Activities / Site Restoration	Spent Fuel Pool O & M	ISFSI Construction & Decommissioning	ISFSI O & M	Costs for Maintaining Financial Assurance	Costs of Loans
0		0	0		
0		1,102	0		
492		3,144	0		
45		7,974	0		
86		9,596	107		
8,286	10,279	24,644	1,710		
5,059	7,709	8,612	3,660	238	399
3,083		0	3,739	153	1,309
1,719		0	3,736	55	1,875
335		0	3,729	15	1,962
304		0	3,718		1,569
304		0	3,703		1,114
305		0	3,681		660
304		0	3,655		205
304		0	3,621		11
305		0	3,580		1
304		0	3,533		
304		0	3,476		
304		0	3,476		
304		0	3,476		
304		0	3,476		
304		0	3,476		
304		0	3,476		
304		0	3,476		
10,933		7,853	3,098		
14,105					
304					
304					
304					
1,825					
51,138	17,988	62,925	69,602	461	9,105

Table 5.3-1

**Status of Decommissioning Trust Funds
as of December 31, 1998**

Trojan Co-Owner	Fund Balance as of 12/31/98 ¹	
<hr/>		
Portland General Electric (PGE)	\$62,858,000	
Eugene Water & Electric (EWEB)/ Bonneville Power Administration (BPA)	\$14,207,000	
Pacific Power & Light (PP&L)	\$3,387,000	
<hr/>		
Total	\$80,452,000	

¹The 1998 end-of-year trust fund balances include an adjustment for trust expenditures incurred in November and December 1998 that were not paid out of the trust in 1998.

Table 5.3-2
Portland General Electric
Decommissioning Trust Fund Cash Flow As Of 12/31/98
(Nominal \$ x 1000)

Year	PGE Trust Fund Expenditures A	PGE Trust Fund Contributions B	PGE Trust Fund Net Earnings C	PGE Trust Fund EOY Balance D	Bridge Loan Funding and Interest Payment E	Bridge Loan Interest Accrual F	Letter of Credit G	Letter of Credit Fee H
1996								
1997								
1998								
1999	(62,953)	14,041	546	62,858				
2000	(43,593)	14,041	0	14,492				
2001	(33,836)	14,041	0	0	15,306	(425)	70,306	(246)
2002	(15,158)	14,041	0	0	19,957	(1,427)	46,224	(162)
2003	(4,471)	14,041	0	0	1,175	(2,092)	16,497	(58)
2004	(3,175)	14,041	0	0	(9,554)	(2,241)	4,472	(16)
2005	(3,237)	14,041	0	0	(10,866)	(1,835)		
2006	(3,297)	14,041	0	0	(10,804)	(1,334)		
2007	(3,352)	14,041	0	0	(10,744)	(809)		
2008	(3,403)	14,041	236	6,291	(4,633)	(257)		
2009	(3,447)	14,041	644	17,317	(257)	(14)		
2010	(3,486)	14,041	1,078	28,975	(14)	(1)		
2011	(3,515)	14,041	1,527	41,056	(1)			
2012	(3,599)	628	1,992	53,574				
2013	(3,684)		1,958	52,561				
2014	(3,771)		1,896	50,773				
2015	(3,861)		1,828	48,830				
2016	(3,952)		1,754	46,723				
2017	(4,046)		1,673	44,444				
2018	(23,976)		1,583	41,981				
2019	(15,820)		710	18,715				
2020	(349)		120	3,015				
2021	(358)		111	2,778				
2022	(366)		102	2,522				
2023	(2,248)		92	2,248				
			0	0				
Total	(252,953)	183,161	17,850		(10,435)	(10,435)		(482)

NOTE 1: Positive numbers indicate cash flow into trust fund; negative numbers indicate cash flow out of trust fund.
NOTE 2: Current EOY balance = previous year EOY balance + current year A + B + C + E + H.

Table 5.3-3
EWEB / BPA
Decommissioning Trust Fund Cash Flow As Of 12/31/98
(Nominal \$ x 1000)

Year	EWEB / BPA Trust Fund Expenditures A	EWEB / BPA Trust Fund Contributions B	EWEB / BPA Trust Fund Net Earnings C	EWEB / BPA Trust Fund EOY Balance D	Bridge Loan Funding and Interest Payment E	Bridge Loan Interest Accrual F	Letter of Credit G	Letter of Credit Fee H
1996								
1997								
1998								
1999	(27,979)	2,618	710	14,207				
2000	(19,374)	2,749	0	0	10,444			
2001	(15,038)	650	31	0	16,625			
2002	(6,737)	650	67	681	15,038			
2003	(1,987)	650	102	1,398	8,737			
2004	(1,411)	650	140	2,150	1,987			
2005	(1,439)	650	179	2,940	1,411			
2006	(1,465)	650	221	3,769	1,439			
2007	(1,490)	650	265	4,640	1,465			
2008	(1,512)	650	310	5,555	1,490			
2009	(1,532)	650	358	6,515	1,512			
2010	(1,549)	650	409	7,523	1,532			
2011	(1,562)	650	462	8,582	1,549			
2012	(1,599)	650	517	9,694	1,562			
2013	(1,637)	650	576	10,861	1,599			
2014	(1,676)	650	637	12,086	1,637			
2015	(1,716)	650	701	13,373	1,676			
2016	(1,756)	650	769	14,724	1,716			
2017	(1,798)	650	840	16,143	1,756			
2018	(10,656)	0	882	17,633	1,798			
2019	(7,031)	0	393	7,858	0			
2020	(155)	0	61	1,220	0			
2021	(159)	0	56	1,126	0			
2022	(163)	0	51	1,024	0			
2023	(999)	0	0	912	0			
Total	(112,420)	16,417	8,736		73,060			

NOTE 1: Positive numbers indicate cash flow into trust fund; negative numbers indicate cash flow out of trust fund.
 NOTE 2: Current EOY balance = previous year EOY balance + current year A + B + C + E + H.
 NOTE 3: BPA will provide bridging funds as necessary from their operating budget, and thus will incur no loan costs.
 Financial assurance will be provided by a statement of intent as allowed by 10 CFR 50.75.

Table 5.3-4
Pacific Power & Light
Decommissioning Trust Fund Cash Flow As Of 12/31/98
(Nominal \$ x 1000)

Year	PP & L Trust Fund Expenditures A	PP & L Trust Fund Contributions B	PP & L Trust Fund Net Earnings C	PP & L Trust Fund EOY Balance D	Bridge Loan Funding and Interest Payment E	Bridge Loan Interest Accrual F	Letter of Credit G	Letter of Credit Fee H
1996								
1997								
1998								
1999	(2,332)	565	100	3,387				
2000	(1,615)	565	41	1,720				
2001	(1,253)	565	3	704			1,346	(7)
2002	(561)	565	0	14			961	(5)
2003	(166)	307	0	15			578	(3)
2004	(118)	307	4	155			160	(1)
2005	(120)	307	13	348				
2006	(122)	307	22	548				
2007	(124)	307	31	755				
2008	(126)	307	41	969				
2009	(128)	307	51	1,191				
2010	(129)	307	61	1,421				
2011	(130)	305	72	1,660				
2012	(133)	0	83	1,907				
2013	(136)	0	81	1,857				
2014	(140)		78	1,802				
2015	(143)	0	75	1,740				
2016	(146)	0	72	1,672				
2017	(150)	0	69	1,598				
2018	(888)	0	48	1,517				
2019	(586)	0	17	677				
2020	(13)	0	5	108				
2021	(13)	0	4	100				
2022	(14)	0	4	91				
2023	(83)	0	2	81				
Total	(9,369)	5,021	977					(16)

NOTE 1 : Positive numbers indicate cash flow into trust fund; negative numbers indicate cash flow out of trust fund.
NOTE 2 : Current EOY balance = previous year EOY balance + current year A + B + C + E + H.