



**Portland General Electric Company**

Trojan Nuclear Plant  
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March 27, 2003

VPN-021-2003

Trojan Nuclear Plant  
Docket 50-344  
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 in Accordance with 10 CFR 50.75(f)(1)

In accordance with 10 CFR 50.75(f)(1), this letter transmits the Trojan Nuclear Plant co-owners' annual report of the status of decommissioning funding for Calendar Year 2002. The report, which is provided in Enclosure I to this letter, is based on the most recent analysis of the Trojan Nuclear Plant decommissioning cost estimate and funding plan as incorporated into Revision 16 of PGE-1061, "Trojan Nuclear Plant Decommissioning Plan and License Termination Plan (PGE-1078)."

For convenience, a copy of Section 5, "Update of Site-Specific Decommissioning Costs," of PGE-1061, Revision 16, is provided in Enclosure II to this letter. The decommissioning cost estimate and funding plan is updated to reflect actual expenditures and fund balances through December 31, 2002. The cost estimate revision also incorporates the actual inflation rate for 2002, which had been estimated in the previous cost estimate revision, and reflects current projections associated with staffing, radiological waste burial volumes, work schedules, and the schedule for transfer of the spent nuclear fuel to the dry storage facility.

If you have any questions regarding this correspondence, please contact Mr. Lansing G. Dusek of my staff at (503) 556-7409.

Sincerely,

  
Lansing G. Dusek for  
Stephen M. Quennoz  
Vice President  
Power Supply/Generation

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UMSS01

VPN-021-2003

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Enclosures

c:    **S. W. Brown, NRC, NMSS**  
      **Director, NRC Region IV, DNMS**  
      **D. Stewart-Smith, OOE**  
      **A. Bless, OOE**

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

As required by 10 CFR 50.75(f)(1), this report constitutes the TNP co-owners' annual report of the status of decommissioning funding for the TNP for Calendar Year 2002. 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 and License Termination Plan (PGE-1078)," Revision 16. For convenience, a copy of Section 5, "Update of Site-Specific Decommissioning Costs," of PGE-1061, Revision 16, is provided in Enclosure II to VPN-021-2003 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...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:*

*the amount of decommissioning funds estimated to be required pursuant to 10 CFR 50.75(b) and (c);*

*the amount accumulated to the end of the calendar year preceding the date of the report;*

*a schedule of the annual amounts remaining to be collected;*

*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;*

*any contracts upon which the licensee is relying pursuant to paragraph (e)(1)(v) of this section;*

*any modifications occurring to a licensee's current method of providing financial assurance since the last submitted report; and*

*any material changes to trust agreements.*

...

*Any licensee for a plant that...has already closed (before the end of its licensed life), or for plants involved in mergers or acquisitions shall submit this report annually.*

This report addresses the requirements of 10 CFR 50.75(f)(1) for the TNP for Calendar Year 2002 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 Portland General Electric Company (PGE). As indicated in PGE-1061, Section 5.1 and Table 5-1, the total costs in 1997 dollars are estimated to be approximately \$238,957,000 for radiological decommissioning activities, approximately \$42,263,000 for nonradiological decommissioning activities (site restoration), and approximately \$146,985,000 for dry spent fuel storage. Costs associated with securing and maintaining decommissioning financial assurance and bridging funds are projected to total approximately \$1,514,000. A detailed schedule of the decommissioning and spent fuel management costs, totaling approximately \$429,719,000 of decommissioning trust fund-related expenditures, is provided in Section 5.1 and Table 5-2 of PGE-1061.

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

The following table reflects the amount of decommissioning funds accumulated by the TNP co-owners through December 31, 2002. Each of the co-owners separately collect, through rates, the funds for decommissioning. Two of the three TNP co-owners (PGE and Pacific Power and Light [PP&L]) deposit these funds in external trust funds in accordance with 10 CFR 50.75(e)(1)(ii). As a federal government agency fulfilling the decommissioning funding obligations of the Eugene Water and Electric Board (EWEB), the third TNP co-owner and licensee, the Bonneville Power Administration (BPA) has provided a statement of intent, as allowed by 10 CFR 50.75(e)(1)(iv), that states that decommissioning funding will be provided as such funds are needed. Thus, BPA is not required to accumulate funds in an external trust.<sup>1</sup> Additional details of the TNP decommissioning funding plans and schedules for each of the co-owners are provided in Section 5.3 of PGE-1061.

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<sup>1</sup> A copy of the BPA's Statement of Intent, dated March 21, 2001, was forwarded to the NRC on March 29, 2001, as Enclosure III to PGE letter VPN-016-2001.

**Status of Decommissioning Trust Funds  
As of December 31, 2002**

TNP Co-Owner	Fund Balance as of 12/31/2002
Portland General Electric Company	\$27,941,000 <sup>a</sup>
Eugene Water & Electric Board/ Bonneville Power Administration	N/A <sup>b</sup>
Pacific Power & Light	\$1,734,000 <sup>a</sup>
<b>Total</b>	<b>\$29,675,000</b>

<sup>a</sup> The 2002 end-of-year trust fund balance includes an adjustment for trust expenditures incurred in November and December 2002 that were not paid out of the trust in 2002.

<sup>b</sup> BPA provides decommissioning funding from its operating budget as such funds are needed. Financial assurance is provided by a Statement of Intent dated March 21, 2001. Therefore, no external trust fund is required.

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

The decommissioning funding cash flow for each of the TNP co-owners is described in Section 5.3 and quantified in Tables 5-4 through 5-6 of PGE-1061. As detailed in Section 5.3.2 of PGE-1061, each of the co-owners maintains a collection schedule that ensures that each co-owner's portion of the total decommissioning activity expenditures will be fully funded. These funding 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 decommissioning cost and funding schedules as reflected in Section 5 of PGE-1061.

**Assumptions Regarding  
 Escalation, Earnings, and Interest Rates**

TNP Co-Owner	Escalation Factor <sup>a</sup> (%)	Trust Fund Earnings Rate <sup>b</sup> (%)	Bridge Loan Interest Rate <sup>c</sup> (%)	Line of Credit Fees <sup>d</sup> (%)
PGE	2.79	<sup>e</sup> 5.18 <sup>f</sup> 4.66	<sup>g</sup> 7.05	0.55
BPA/EWEB	2.79	<sup>h</sup> N/A	N/A	N/A
PP&L	2.79	3.0	N/A	1.0

<sup>a</sup> The escalation rate assumption of 2.79 percent represents the average of WEFA projected inflation rates for 2003 through 2019.

<sup>b</sup> 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.

<sup>c</sup> Bridge loans for BPA and PP&L are not projected to be necessary.

<sup>d</sup> BPA will continue to use a Statement of Intent, rather than secure a line of credit, to provide financial assurance in accordance with 10 CFR 50.75(e)(1)(iv).

<sup>e</sup> This rate is applied to the qualified portion of PGE's trust fund.

<sup>f</sup> This rate is applied to the non-qualified portion of PGE's trust fund.

<sup>g</sup> The yield spread portion of this value is the average of the WEFA forecasted 5-year note for 2004 and 2005 less projected inflation.

<sup>h</sup> BPA provides decommissioning funding from its operating budget as such funds are needed. Financial assurance is provided by a Statement of Intent dated March 21, 2001. Therefore, no external trust fund is required.

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).

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

Since the last submitted report, no modifications have been made to the TNP co-owners' current methods of providing financial assurance that adequate funds will be available to complete radiological decommissioning of the TNP site. Specifically, both PGE and PP&L continue to maintain financial assurance in the form of an external trust fund in accordance with 10 CFR 50.75(e)(1)(ii), and BPA continues to maintain financial assurance in the form of a letter of credit in accordance with 10 CFR 50.75(e)(1)(iv).

7. *Any material changes to trust agreements.*

PGE and PP&L have not made any material changes to the decommissioning trust agreements since the last funding plan submittal. As stated previously, BPA provides financial assurance in the form of a statement of intent, and thus is not required to maintain trust agreements to provide financial assurance for TNP decommissioning.

**Enclosure II to VPN-021-2003**

**Section 5, "Update of Site-Specific Decommissioning Costs," of  
PGE-1061, "Trojan Nuclear Plant Decommissioning Plan and License  
Termination Plan (PGE-1078)," Revision 16**

## 5. UPDATE OF SITE-SPECIFIC DECOMMISSIONING COSTS

In accordance with Paragraphs (a)(4) and (a)(9)(ii)(F) of 10 CFR 50.82 (Reference 5-1), and consistent with the guidance of Regulatory Guide 1.179 (Reference 5-2), the TNP-specific cost estimate and funding plan as incorporated into this section provides:

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 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 provides estimates of total decommissioning costs as well as decommissioning costs that remain as of January 1, 2003. As indicated in Table 5-1, the costs (in 1997 dollars) for the selected decommissioning alternative are estimated to total approximately \$238,957,000 for radiological decommissioning activities, approximately \$42,263,000 for nonradiological decommissioning activities (site restoration), and approximately \$146,985,000 for dry spent fuel storage. Costs associated with securing and maintaining decommissioning financial assurance and bridging funds are projected to total approximately \$1,514,000. A detailed schedule of TNP's decommissioning and spent fuel management costs, totaling approximately \$429,719,000 of decommissioning fund-related expenditures, is provided in Table 5-2 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" (Reference 5-3) and the DOE "Decommissioning Handbook" (Reference 5-4). 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 and work/activity schedules, 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 5-2, 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 5-2 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 5-2, 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 5-2 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, capital, etc. As a result, only costs which meet the intent of this TNP

Decommissioning Plan and License Termination Plan 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, as applicable. Any significant activity which is inconsistent with this Decommissioning Plan and License Termination Plan 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 2002 where TNP expended funds for decommissioning activities. The decommissioning cost estimate reflects updated staffing requirements and work/activity schedules, remaining scheduled decommissioning equipment removal efforts, and adjustments for radioactive waste disposal volumes and costs.

Costs required to maintain spent fuel in a safe storage condition are funded by Operation and Maintenance (O&M) funds rather than by decommissioning funds while the spent fuel remains in wet storage. Once the spent fuel is transferred to dry storage, there are sufficient decommissioning fund annual contributions to cover annual costs. This is described in Sections 5.2 and 5.3.2 and Table 5-2. 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) (Reference 5-5), the TNP co-owners periodically assess the financial assurance amount required to complete radiological decommissioning. The established financial assurance mechanisms (e.g., external trust fund and/or letter of credit) are adjusted as necessary to ensure the completion of radiological decommissioning. Financial assurance is described in Section 5.3. "Bridge" funds are also 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 5-2. 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 5-2. 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 5-2, spent fuel pool operation expenditures are projected to end upon 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) indicated in Table 5-2 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 5-2 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 that 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 5-2 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 5-2, 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 through rates the funds for the decommissioning of TNP and the Trojan ISFSI. PGE and PP&L deposit these funds in external trust funds in accordance with 10 CFR 50.75(e), while the BPA provides EWEB's portion of TNP and Trojan ISFSI decommissioning funds as necessary as described in Section 5.3.2.2. Because the TNP was shut down prematurely, the external trust funds established by PGE and PP&L currently contain only a portion of the total amount needed for site radiological decommissioning. Table 5-3 summarizes the status of PGE's and PP&L's decommissioning trust funds as of December 31, 2002.

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 PGE and PP&L 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, PGE and PP&L are required to secure an additional 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 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 funding 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 funds. The decommissioning funding cash flow for each of the TNP co-owners, based on the expenditure schedule in Table 5-2 and the co-owner contribution schedules, is described below.

##### 5.3.2.1 PGE Funding

Table 5-4 provides PGE's decommissioning funding cash flow in nominal dollars (2.79% escalation) during decommissioning. Funded from an external trust fund, the expenditures described in this table are PGE's share (67.5%) of the expenditures described in Table 5-2, with the exception of spent fuel pool O&M costs since these costs are being paid with

O&M budget funds rather than decommissioning funds. The funding schedule described in Table 5-4 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 funding 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 fund cash flow analysis presented in Table 5-4, bridging funds are anticipated to be required in the year 2004 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 decommissioning funding cash flow as indicated in Table 5-4.

In addition, because the trust established for decommissioning will not contain the funds necessary for completion of radiological decommissioning prior to the start of the Decontamination and Dismantlement Period, PGE must secure an additional financial assurance mechanism allowed by 10 CFR 50.75, and maintain this assurance until termination of TNP's Part 50 license. Therefore, upon commencement of the Decontamination and Dismantlement Period, 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 fulfills 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 as detailed further below. Table 5-5 provides BPA/EWEB's decommissioning funding cash flow in nominal dollars (2.79% escalation) during decommissioning. The expenditures described in this table are BPA/EWEB's share (30%) of the expenditures described in Table 5-2, with the exception of spent fuel pool O&M costs since these costs are being paid with O&M budget funds rather than decommissioning funds. The funding

schedule described in Table 5-5 ensures that BPA/EWEB's portion of the decommissioning activity expenditures will be fully funded.

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, provides financial assurance in the form of a statement of intent. The statement of intent contains a reference to the TNP decommissioning cost estimate described in Section 5.1, indicating that funds for radiological decommissioning of the TNP and Trojan ISFSI will be obtained when necessary.

### 5.3.2.3 PP&L Funding

Table 5-6 provides PP&L's decommissioning funding cash flow in nominal dollars (2.79% escalation) during decommissioning. Funded from an external trust fund, the expenditures described in this table are PP&L's share (2.5%) of the expenditures described in Table 5-2, with the exception of spent fuel pool O&M costs since these costs are being paid with O&M budget funds rather than decommissioning funds. The funding schedule described in Table 5-6 ensures that PP&L's portion of the decommissioning activity expenditures will be fully funded.

Based on the decommissioning funding cash flow analysis presented in Table 5-6, PP&L's decommissioning trust balance will remain adequately funded during decommissioning such that bridging funds will not be required. However, because the trust established 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 an additional financial assurance mechanism allowed by 10 CFR 50.75, and maintain this assurance until termination of TNP's Part 50 license. Therefore, upon commencement of the Decontamination and Dismantlement Period, 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

**Estimate of Decommissioning Costs  
(1997 dollars)**

	<b>Total (Start-to-Finish) Costs</b>	<b>Total Costs Remaining As of January 1, 2003</b>
<b>Radiological (NRC) Decommissioning Costs</b>		
Reactor Vessel and Internals Removal and Disposal	21,495,000	0
Dismantlement, Decontamination, and Remediation	162,828,000	46,837,000
Waste Disposal	41,878,000	9,059,000
Final Survey	12,756,000	8,784,000
Total	238,957,000	64,680,000
<b>Nonradiological Decommissioning Costs</b>		
Site Restoration	42,263,000	39,253,000
Total	42,263,000	39,253,000
<b>Dry Spent Fuel Management Costs</b>		
ISFSI Construction and Decommissioning	86,683,000	23,407,000
ISFSI Operation and Maintenance	60,302,000	58,170,000
Total	146,985,000	81,577,000
<b>Financing Costs</b>		
Financial Assurance	209,000	209,000
Decommissioning Bridge Loans	1,305,000	1,305,000
Total	1,514,000	1,514,000
<b>Total Decommissioning Expenditures</b>	<b>\$ 429,719,000</b>	<b>\$ 187,024,000</b>

Table 5-2  
Decommissioning Cost Estimate for Trojan Nuclear Plant  
Itemized Decommissioning Expenditure Schedule  
(1997 \$ x 1000)

Total Decommissioning Expenditures						Radiological Decommissioning	Nonradiological Decommissioning	Spent Fuel Management			Financing Activities	
Year	Total Radiological Decommissioning Expenditures	Total Nonradiological Decommissioning Expenditures	Total Spent Fuel Management Expenditures	Total Financing Activity Expenditures	Total Combined Decommissioning Expenditures			DECON / License Termination	Remediation Activities / Site Restoration	SFP Spent Fuel Pool O & M	ISFSI Construction & Decommissioning	ISFSI O & M
1993	2,673	0	0	0	2,673	2,673	0		0	0		
1994	5,320	68	0	0	5,388	5,320	68		0	0		
1995	15,896	45	1,100	0	17,041	15,896	45		1,100	0		
1996	9,087	243	3,144	0	12,474	9,087	243		3,144	0		
1997	19,238	350	7,974	0	27,562	19,238	350		7,974	0		
1998	34,321	62	9,703	0	44,086	34,321	62		9,596	107		
1999	37,970	1,313	17,979	0	57,262	37,970	1,313		17,255	724		
2000	33,180	777	3,354	0	37,311	33,180	777		3,040	314		
2001	8,363	198	6,725	0	15,286	8,363	198		6,274	451		
2002	8,230	(46)	15,429	0	23,613	8,230	(46)		14,893	536		
2003	20,211	1,213	19,516	0	40,940	20,211	1,213	11,524	15,554	3,962		
2004	33,442	4,270	3,919	417	42,048	33,442	4,270			3,919	152	265
2005	11,026	216	3,894	592	15,728	11,026	216			3,894	57	535
2006	0	0	3,872	471	4,343		0			3,872		471
2007	0	0	3,846	32	3,878		0			3,846		32
2008	0	0	3,670	2	3,672		0			3,670		2
2009	0	0	3,621	0	3,621		0			3,621		
2010	0	0	3,573	0	3,573		0			3,573		
2011	0	0	3,516	0	3,516		0			3,516		
2012	0	0	3,525	0	3,525		0			3,525		
2013	0	0	3,516	0	3,516		0			3,516		
2014	0	0	3,516	0	3,516		0			3,516		
2015	0	0	3,516	0	3,516		0			3,516		
2016	0	0	3,491	0	3,491		0			3,491		
2017	0	0	3,516	0	3,516		0			3,516		
2018	0	17,258	11,070	0	28,328		17,258		7,853	3,217		
2019	0	16,296	0	0	16,296		16,296					
2020	0	0	0	0	0							
2021	0	0	0	0	0							
2022	0	0	0	0	0							
2023	0	0	0	0	0							
<b>Total</b>	<b>238,957</b>	<b>42,263</b>	<b>146,985</b>	<b>1,514</b>	<b>429,719</b>	<b>238,957</b>	<b>42,263</b>		<b>86,683</b>	<b>60,302</b>	<b>209</b>	<b>1,305</b>

Table 5-3

**Status of Decommissioning Trust Funds  
as of December 31, 2002**

<b>Trojan Co-Owner</b>	<b>Fund Balance as of 12/31/02</b>
Portland General Electric (PGE)	\$27,941,000 <sup>a</sup>
Eugene Water & Electric (EWEB)/ Bonneville Power Administration (BPA)	N/A <sup>b</sup>
Pacific Power & Light (PP&L)	\$1,734,000 <sup>a</sup>
<b>Total</b>	<b>\$29,675,000</b>

<sup>a</sup> The 2002 end-of-year trust fund balance includes an adjustment for trust expenditures incurred in November and December 2002 that were not paid out of the trust in 2002.

<sup>b</sup> BPA provides decommissioning funding from its operating budget as such funds are needed. Financial assurance is provided by a Statement of Intent, dated March 21, 2001. Therefore, no external trust fund is required.

**Table 5-4  
Portland General Electric  
Decommissioning Funding Cash Flow  
(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 Funds E	Bridge Funds Interest F	Letter of Credit G	Letter of Credit Fee H
1996								
1997								
1998								
1999								
2000								
2001								
2002				27,941				
2003	(31,853)	14,041	387	10,516				
2004	(33,295)	14,041	0	0	8,913	314	31,844	(175)
2005	(12,443)	14,041	0	0	(1,530)	651	12,443	(68)
2006	(3,273)	14,041	93	2,513	(8,348)	589		
2007	(3,340)	14,041	487	13,112	(589)	41		
2008	(3,277)	14,041	923	24,758	(41)	3		
2009	(3,323)	14,041	1,375	36,848	(3)			
2010	(3,371)	14,041	1,844	49,362				
2011	(3,409)	13,924	2,324	62,201				
2012	(3,513)		2,265	60,953				
2013	(3,602)		2,200	59,551				
2014	(3,703)		2,135	57,983				
2015	(3,806)		2,071	56,248				
2016	(3,884)		2,002	54,366				
2017	(4,021)		1,925	52,270				
2018	(33,303)		725	19,692				
2019	(19,692)			0				
2020								
2021								
2022								
2023								
<b>Total</b>	<b>(173,108)</b>	<b>126,252</b>	<b>20,756</b>		<b>(1,598)</b>	<b>1,598</b>		<b>(243)</b>

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 5-5  
EWEB / BPA  
Decommissioning Funding Annual Cash Obligations  
(Nominal \$ x 1000)**

Year	Eugene Water and Electric Board / Bonneville Power Administration Decommissioning Obligations
1996	
1997	
1998	
1999	
2000	
2001	
2002	
2003	14,157
2004	14,798
2005	5,530
2006	1,454
2007	1,485
2008	1,456
2009	1,477
2010	1,498
2011	1,515
2012	1,562
2013	1,601
2014	1,646
2015	1,691
2016	1,727
2017	1,787
2018	14,801
2019	8,752
2020	
2021	
2022	
2023	
<b>Total</b>	<b>76,937</b>

NOTE 1 :

BPA provides decommissioning funding from its operating budget as such funds are needed. Financial assurance is provided by a Statement of Intent, dated March 21, 2001. Therefore, no external trust fund is required.

**Table 5-6  
Pacific Power & Light  
Decommissioning Funding Cash Flow  
(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 Funds E	Bridge Funds Interest F	Letter of Credit G	Letter of Credit Fee H
1996								
1997								
1998								
1999								
2000								
2001								
2002				1,734				
2003	(1,179)	438	41	1,034				
2004	(1,232)	438	19	254			535	(5)
2005	(462)	438	7	235			209	(2)
2006	(121)	438	12	564				
2007	(124)	438	22	900				
2008	(121)	438	32	1,249				
2009	(123)	438	42	1,606				
2010	(125)	438	53	1,972				
2011	(126)	437	64	2,347				
2012	(130)		68	2,285				
2013	(134)		67	2,218				
2014	(137)		64	2,145				
2015	(141)		62	2,066				
2016	(144)		60	1,982				
2017	(149)		57	1,890				
2018	(1,234)		38	694				
2019	(704)		10	0				
2020								
2021								
2022								
2023								
Total	(6,386)	3,941	718					(7)

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.