

III. Hydro Relicensing

A. Introduction

1 **Q. Why are you addressing hydro relicensing in this filing?**

2 A. The 2007 test year is the first to include costs related to this effort, which PGE began in
3 1995. This test year includes some O&M associated with new licensing requirements, as
4 well as some capital expenditures, including those associated with obtaining new licenses
5 for Pelton, Round Butte, and Sullivan. Our new licenses will require capital expenditures of
6 approximately \$370 million. Although we have already incurred some of these costs, most
7 are for activities that will occur between now and 2020. O&M expenses will also increase.
8 Using a collaborative process, however, we preserved the cost-effective status of these
9 resources and avoided any significant decrease in their performance. The latter is important
10 because, at zero variable fuel cost, production capability is the key to the value of these
11 resources.

12 **Q. How is this section organized?**

13 A. Part B summarizes the hydro projects PGE decided to relicense and the related costs, test
14 year revenue requirement, and measures of cost effectiveness. Part C describes the approach
15 to relicensing that PGE took under the Federal Energy Regulatory Commission's (FERC)
16 general licensing procedures.

B. Relicensing and Related Revenue Requirement

1 **Q. Which hydro projects has PGE recently relicensed or is PGE in the process of**
2 **relicensing?**

3 A. On June 21, 2005, PGE and the Confederated Tribes of the Warm Springs Reservation of
4 Oregon (Tribes) jointly received a new 50-year FERC license for the Pelton Round Butte
5 Project, which consists of three developments located on the Deschutes River. PGE has
6 majority ownership shares in two of these developments, Pelton and Round Butte. The third
7 facility, the re-regulation dam (and associated powerhouse), is completely owned and
8 operated by the Tribes. On December 8, 2005, PGE received a new 30-year FERC license
9 for the Willamette Falls Project, which includes our Sullivan facility, located on the
10 Willamette River. PGE is currently in the process of obtaining a new long-term license for
11 the Clackamas River Hydroelectric Project, which is also under FERC jurisdiction. This
12 Project consists of four developments – Oak Grove, North Fork, Faraday, and River Mill –
13 all owned by PGE.

14 **Q. Overall, what relicensing costs has PGE incurred and does PGE expect to incur in the**
15 **future?**

16 A. These costs fall into three primary categories: capital additions, relicensing process costs,
17 and O&M. First, we expect to invest approximately \$301 million for fish ladders, a water
18 intake structure, and other capital additions. Second, we will capitalize approximately \$70
19 million in relicensing process and studies costs. Third, protection, mitigation, and
20 enhancement (PME) measures required by the licenses will increase O&M costs for the
21 projects. The new licenses and related settlements require several measures. For Pelton
22 Round Butte, these include road maintenance and improvements to recreation sites. For

1 Willamette Falls, PME measures include the responsibility for fish ladder maintenance. Our
2 Clackamas Project will likely require similar PME measures. We project total
3 relicensing-related O&M costs to be approximately \$3 million in 2007 increasing to
4 approximately \$7 million in 2009, then decreasing to approximately \$3 million in 2015, and
5 generally increasing at 2.5% per year thereafter.

6 **Q. Have you prepared a summary table of costs – both actually incurred and projected –**
7 **by year and by project?**

8 A. Yes. PGE Exhibit 303 provides this information. Pages 1 and 2 of that Exhibit cover capital
9 and O&M costs respectively.

10 **Q. How do these costs affect the test year revenue requirement?**

11 A. The test year net rate base includes approximately \$41.7 million related to relicensing.
12 Given the pre-tax cost of capital of slightly less than 13%, the return requirement is
13 approximately \$5.4 million. The test year revenue requirement also includes
14 relicensing-related depreciation and O&M expenses of approximately \$1.0 million and \$2.9
15 million respectively, resulting in a total hydro relicensing-related revenue requirement of
16 approximately \$9.3 million.

17 **Q. Has PGE decided not to relicense any of its hydro projects?**

18 A. Yes. We decided not to seek a new long-term license for Bull Run, our 22 MW hydro
19 facility located on the Bull Run River, just upstream from its confluence with the Sandy
20 River. We determined that the costs associated with measures necessary to obtain a new
21 long-term license would likely exceed the value of the associated power output.

22 **Q. Have you calculated "per MWh" costs for power to be produced by the relicensed**
23 **plants?**

1 A. Yes. Our calculations reflect the amounts and timing of all costs – both relicensing and
2 other – related to running the hydro facilities covered by the Pelton Round Butte, Clackamas
3 River, and Willamette Falls Projects through the end of the new license terms. We know
4 that the new Pelton Round Butte and Willamette Falls licenses end in 2055 and 2035
5 respectively. We assume that the new Clackamas River license will run through 2052.

6 Using "average water," as explained in PGE Exhibit 400, and on a real levelized 2006
7 dollar basis, these costs are:

- 8 • Pelton \$21.83/MWh
- 9 • Round Butte \$22.66
- 10 • Clackamas Project \$41.90
- 11 • Sullivan \$45.26

12 These are substantially lower than comparable levelized market prices of more than
13 \$53/MWh.

14 **Q. What net present values result from your calculations?**

15 A. We expect relicensing to provide customers with the following net present value benefits
16 (\$2006 Million):

- 17 • Pelton \$165
- 18 • Round Butte \$375
- 19 • Clackamas Project \$143
- 20 • Sullivan \$ 14
- 21 • Total \$697

22 **Q. How does the cost of relicensing hydro resources compare to the cost of other resource**
23 **alternatives?**

1 A. It compares very favorably. The average cost of the resources that are part of PGE's most
2 recent Commission-acknowledged Final Action Plan is more than \$40/MWh, even assuming
3 the gas forward curves used to evaluate the RFP bids and the Port Westward alternative.
4 This average would be substantially greater using current forward curves. We base the net
5 present value calculations on an expected long-term 2006 real levelized market power price
6 of more than \$53/MWh.

C. Hydro Relicensing Process

7 **Q. Please describe the new long-term licenses that PGE has obtained or is pursuing.**

8 A. FERC issues licenses for hydro facilities with terms ranging from 30 to 50 years.

9 Our two Deschutes River developments, Pelton and Round Butte, operated under one
10 long-term license for the Pelton Round Butte Project, which expired at the end of 2001.
11 After expiration of the long-term license, the project operated under "annual licenses." On
12 June 21, 2005, FERC issued a new long-term (50-year) license.

13 For FERC licensing purposes, PGE's Sullivan facility was designated as the Willamette
14 Falls Project. This project, whose long-term license expired on December 31, 2004, was
15 operating under an "annual license" until December 8, 2005, when FERC issued a new long
16 term (30-year) license.

17 With respect to the Clackamas River, we plan to renew the long-term license for our
18 Oak Grove, North Fork, Faraday, and River Mill developments. These facilities were
19 originally covered by two licenses, one for the Oak Grove Project, the other for the North
20 Fork Project which includes our North Fork, Faraday, and River Mill plants. The two
21 licenses were recently combined and designated as the Clackamas River Project. The

1 current license expires on August 31, 2006, and we have requested a 45-year license. It is
2 impossible to predict when FERC will act on our pending Clackamas application.

3 **Q. What is the relicensing process like in general?**

4 A. The FERC relicensing process is complex and time consuming (usually a minimum of five
5 years). In making relicensing decisions, FERC must consider fish and wildlife, recreational,
6 land use, cultural, and aesthetics issues equally with energy production. Certain federal and
7 state resource agencies, known as "mandatory conditioning agencies," have specific
8 authority to include requirements in FERC issued licenses. These requirements are often
9 expensive, and can limit hydro plants' operational flexibility. Examples are mandatory
10 measures for fish passage and minimum in-stream flows. Often there is insufficient
11 scientific knowledge to objectively determine the environmental effectiveness of some
12 proposed mandatory conditions. Moreover, the FERC relicensing process can become
13 extremely contentious and political. Given this environment, PGE used a collaborative
14 approach to reduce costs and uncertainties wherever possible.

15 **Q. Please describe the relicensing process for the Pelton Round Butte Project.**

16 A. PGE began the relicensing process for the Pelton Round Butte Project in 1995. Following
17 several years of relicensing discussion, PGE and the Tribes filed their Final Joint
18 Application Amendment in June 2001. On August 11, 2002, FERC issued the Ready for
19 Environmental Analysis Notice. This is essentially a determination that FERC has sufficient
20 information to analyze the environmental impacts of relicensing the project. To resolve
21 remaining issues, PGE and the Tribes began a multiparty, facilitated negotiation process in
22 January 2003. Negotiations concerning fish passage, minimum flows below the plants, and
23 associated operational issues, were complex and time consuming. In addition, discussions

1 of the plants' water rights related to future municipal and other water use demands involved
2 many parties. Reaching consensus required a lot of time.

3 On August 29, 2003, FERC issued its Draft Environmental Impact Statement. In
4 December 2003, PGE and the Tribes filed a description of the Proposed Preferred
5 Alternative with FERC. FERC issued its Final Environmental Impact Statement in June
6 2004. Parties signed the Settlement Agreement on July 13, 2004, and PGE filed the
7 agreement with FERC on July 30, 2004. FERC issued a new long term license for the
8 project on June 21, 2005.

9 **Q. What were the advantages of PGE's decision to use a multi-party, facilitated**
10 **negotiation process to relicense the Pelton Round Butte Project?**

11 A. Thirteen agencies claimed some form of mandatory conditioning authority in the relicensing
12 of the Pelton Round Butte Project. A collaborative settlement process provided the best
13 opportunity to reconcile potentially inconsistent demands from these agencies and to
14 maintain the economic benefits of the project for customers. The negotiated settlement
15 involving all parties also greatly reduced the risk of litigation. Litigation over licenses
16 increases costs to customers and raises uncertainty. Moreover, PGE believes that facilitated
17 settlement processes involving all parties create the best opportunity for creative problem
18 solving. We also expect the negotiated settlement to reduce controversy during the
19 implementation of license terms, resulting in more efficient and lower cost implementation
20 of programs.

21 **Q. What must PGE do to meet the conditions of the Settlement Agreement that was part**
22 **of the Pelton Round Butte Project relicensing process?**

1 A. The Settlement Agreement and the new license, which largely adopts the terms of the
2 agreement, have numerous requirements. The license terms address both project operations
3 and measures to address all resource categories impacted by the project. These categories
4 include wildlife and botanical resources, fisheries, water quality, recreation, culture, road
5 maintenance, and other land uses.

6 Of particular significance, the new license contains an aggressive fish passage plan,
7 which aims to reintroduce salmon and steelhead above the Round Butte Dam through
8 construction of a new intake tower at the dam.

9 **Q. How will the new intake tower at Round Butte work?**

10 A. The new intake tower, also designated as the Selective Water Withdrawal Tower (Tower),
11 will have two functions. First, by allowing water to be withdrawn from the Round Butte
12 reservoir at a variety of depths, the Tower will create more distinct currents through the
13 reservoir. These currents will guide downstream migrating juvenile salmonids to new fish
14 collection facilities. Second, the Tower will improve water quality, both in the project
15 reservoirs and downstream of the project.

16 **Q. Will the changes made to meet the conditions of the Settlement Agreement alter the**
17 **output and availability characteristics of Pelton and Round Butte?**

18 A. No. Although the project will operate under a clearer and somewhat more restrictive set of
19 target flows and reservoir levels, the key components of project operations, average energy,
20 and peaking capability, remain intact.

21 **Q. Will the changes made to meet the conditions of the Settlement Agreement change the**
22 **O&M costs of Pelton and Round Butte?**

1 A. Yes. Many of the requirements of the Settlement Agreement will increase O&M costs. In
2 particular, PGE will pay various entities for road maintenance and law enforcement costs.
3 Also, we will increase the biological staff dedicated to the project and to license
4 implementation. Finally, annual charges paid to the State of Oregon and FERC will
5 increase. Pelton and Round Butte PME-related O&M costs are approximately \$2.3 million
6 for the 2007 test year.

7 **Q. Are all hydro relicensing costs directly related to license articles?**

8 A. No. Although it is in all parties' interest to agree on the PME measures that FERC will
9 enforce, there are instances in which the relatively narrow nature of FERC's jurisdiction over
10 licensees does not cover all measures requested by the different parties. In these instances,
11 PGE's negotiating team calculates the cost of these measures and compares those costs to the
12 costs that PGE could incur if we did not achieve settlement.

13 **Q. What are the primary settlement-related costs for Pelton Round Butte that do not**
14 **directly relate to license articles?**

15 A. In its order issuing a new license for Pelton Round Butte, FERC omitted two elements to
16 which the settling parties had agreed:

17 1. Support for improvements of Forest Service facilities at Haystack Reservoir. This
18 portion of the agreement requires PGE to pay \$10,000 to the Forest Service in the
19 fifth year of the new license. Additional payments of \$15,000 each follow in
20 years 20 and 40 of the new license.

21 2. Improvements to recreation sites on the lower Deschutes. This group of measures
22 requires PGE to support a variety of upgrades to heavily used camp sites along the

1 Deschutes River below the project. The agreed upon level of support is \$87,000
2 in the fifth year of the license and an additional \$49,500 in the seventh year.

3 **Q. What risks did PGE avoid by reaching settlement with all parties?**

4 A. Had we not reached an agreement with all parties, federal and state agencies would have
5 been free, within the limits of their statutory authorities, to mandate mitigation measures that
6 FERC would have been obliged to include in the license. At that point, PGE's only practical
7 recourse would have been to appeal issuance of the license to the federal Court of Appeals.
8 It was PGE's judgment that the outcome of such litigation would have been a license which
9 was, on its face, more expensive for customers than the settlement alternative, and could
10 have involved significant litigation costs as well.

11 **Q. Please describe the process PGE used to relicense the Willamette Falls Project.**

12 A. In relicensing the Willamette Falls Project, we used a variant of FERC's Alternative
13 Licensing Process, under which PGE prepares the environmental assessment on FERC's
14 behalf. Participants in the relicensing process worked in a collaborative fashion, tackling
15 issues incrementally in small technical work groups. This process was successful and
16 resulted in the filing of a Settlement Agreement with FERC in January 2004. All parties
17 have signed this agreement.

18 The most prominent issue at Willamette Falls was downstream passage of salmonids.
19 Concerns also arose about safe passage of lamprey, a species of cultural significance to the
20 Grand Ronde, Siletz, and Warm Springs Tribes. Petitions were submitted for listing
21 lamprey under the Endangered Species Act. There were also issues regarding traditional
22 tribal uses in the area of the falls. Finally, some parties requested increased public access to
23 the falls through the project and adjacent paper mills. PGE could not meet these requests

1 because of project and paper mill safety concerns and FERC's recent increased emphasis on
2 project security.

3 PGE filed the Final License Application in December 2002. FERC issued its Draft
4 Environmental Assessment in January 2004, the same month in which PGE filed the
5 Settlement Agreement with FERC. FERC issued its Final Environmental Assessment in
6 October 2004 and a new 30-year license in December 2005.

7 **Q. What must PGE do to meet the conditions of the Willamette Falls relicensing-related**
8 **Settlement Agreement?**

9 A. PGE must operate the project in accordance with a more restrictive set of license articles. In
10 addition, PGE will upgrade the turbines at Sullivan to improve the units' operating
11 efficiencies and to make them more "fish-friendly." The Settlement Agreement also
12 requires the decommissioning of a small powerhouse previously owned by Blue Heron
13 Paper Company. Finally, the Agreement requires a phased program of improvements to the
14 fish passage facilities at Sullivan and at Willamette Falls themselves.

15 **Q. Will the changes made to meet the conditions of the Settlement Agreement alter**
16 **Sullivan's output and availability characteristics?**

17 A. No. The Settlement Agreement conditions will leave availability characteristics virtually
18 unchanged.

19 **Q. Will the changes made to meet the conditions of the Settlement Agreement change**
20 **Sullivan's O&M costs?**

21 A. Yes. The O&M costs at Sullivan will increase, largely for PGE responsibility for
22 maintenance of the Oregon Department of Fish and Wildlife fish ladder located at the site.
23 Sullivan PME-related O&M costs are approximately \$200,000 for the 2007 test year.

1 **Q. What process has PGE used to relicense the Clackamas River Hydroelectric Project?**

2 A. For the Clackamas River Project we are using a variant of FERC's Alternative Licensing
3 Process. Under this process, FERC's National Environmental Policy Act (NEPA)
4 contractor, the firm that will eventually write the Environmental Impact Statement for
5 FERC, participates in the process from the beginning, working with the applicant and
6 relevant agencies. Relicensing participants work in a collaborative fashion, tackling issues
7 incrementally in small technical work groups.

8 Much of the Oak Grove portion of the project is on Forest Service lands, which gives
9 the Forest Service broad authority to mandate license conditions. Flow below the Harriet
10 Lake diversion dam is a significant issue. Proximity to the Portland metropolitan area
11 makes recreational use of the Clackamas Basin a major factor. Finally, most portions of the
12 project have some form of up- and down-stream fish passage. The efficiency and
13 appropriateness of the fish passage system is a major concern.

14 Relicensing participants completed scoping, the first phase of the collaborative process,
15 and PGE issued a revised Scoping Document in April 2003. Concurrent with relicensing,
16 PGE asked for a license amendment as part of its Endangered Species Act (ESA)
17 compliance strategy. In June 2003, FERC granted this amendment, which included several
18 fishery conservation measures and authorized new turbine runners at North Fork and
19 Faraday #6. PGE issued the initial draft of its Preliminary Draft Environmental Impact
20 Statement at the end of September 2003 and filed its Final License Application and
21 associated Preliminary Draft Environmental Impact Statement in August 2004. With the
22 completion of the Final License Application, PGE convened a settlement group, whose goal
23 was to resolve the licensing issues via a collaborative settlement.

1 **Q. Was the settlement group successful?**

2 A. Yes. The group reached consensus on the outstanding issues. This resulted in an
3 Agreement in Principle, which was filed with FERC on June 30, 2005.

4 **Q. What must PGE do to meet the conditions of the Agreement in Principle?**

5 A. As with the Pelton Round Butte Project, the Agreement for relicensing the Clackamas River
6 Project contains significant measures to improve the survival of salmon and steelhead
7 passing through the project. Of greatest significance, the agreement contains minimum
8 flows in the Oak Grove Fork of the Clackamas River below Harriet Dam and requires new
9 fish passage facilities to be constructed at PGE's North Fork and River Mill facilities. The
10 agreement also contains measures to improve recreation in the project area, and to protect
11 wildlife habitat and species, cultural and historical resources, and water quality.

12 **Q. Will the changes made to meet the conditions of the Agreement in Principle alter the**
13 **output and availability characteristics of PGE's Clackamas River hydro facilities?**

14 A. The availability characteristics of the four facilities included in the Clackamas River
15 Hydroelectric Project will remain largely unchanged. The combined energy output of these
16 three plants will fall by approximately seven MWa because of increased minimum flow
17 requirements at Oak Grove and Faraday, and head loss at North Fork.

18 **Q. Will the changes made to meet the conditions of the Agreement in Principle change the**
19 **O&M costs of PGE's Clackamas River facilities?**

20 A. Yes. Staffing requirements to fulfill license obligations, increased operational requirements
21 for campgrounds, and payments for road maintenance and law enforcement will increase
22 O&M. Clackamas PME-related O&M costs are approximately \$400,000 for the 2007 test
23 year.

1 **Q. Why did PGE decide to use a collaborative variant of FERC's Alternative Licensing**
2 **Process for its Clackamas River and Willamette Falls Projects?**

3 A. This choice provided the best chance of creating firm information bases and preliminary
4 agreements, which could then serve as the foundations for comprehensive settlements. The
5 collaborative process resulted in negotiated settlements, which will likely reduce both the
6 controversy during license term implementation and the possibility of litigation. This
7 reduction of conflict is likely to reduce costs and uncertainties for customers.