

CASE: UE 204  
WITNESS: BROWN

**PUBLIC UTILITY COMMISSION  
OF  
OREGON**

**STAFF EXHIBIT 203**

**Exhibits in Support  
of Reply Testimony**

**REDACTED  
March 18, 2009**

November 19, 2008

TO: Vikie Bailey-Goggins  
Oregon Public Utility Commission

FROM: Randy Dahlgren  
Director, Regulatory Policy & Affairs

**PORTLAND GENERAL ELECTRIC  
UE 204  
PGE Response to OPUC Data Request  
Dated November 7, 2008  
Question No. 014**

**Request:**

**Did PGE perform a cost-benefit analysis (NPV, other) to determine the most cost effective means (hatchery, SWWP fish passage, other) to ensure fish runs were adequate to meet the FERC's relicensing requirements? If so, please provide these studies.**

**Response:**

PGE did not perform a cost-benefit analysis to determine the most cost-effective means to only meet FERC's fish passage requirements. The FERC license required that PGE meet both fish passage and water quality requirements. The SWWP will meet both requirements. The request mentions a hatchery as a possible alternative. However, a hatchery would not meet FERC's fish passage requirements.

PGE is constructing the SWWP as cost-effectively as possible to meet both fish passage and water quality requirements. PGE did perform a cost-benefit analysis to demonstrate that construction of the SWWP and continued plant operation is cheaper for customers than the alternative, which is not building the SWWP and no longer operating our Pelton and Round Butte plants. PGE included this cost-benefit study in its initial testimony in Docket UE 180. Pages 23-25 of PGE Exhibit 300 in that docket summarize the results of the study. Given information known in early 2006, the study concluded that meeting the FERC requirements by constructing the SWWP and continuing operations at Pelton and Round Butte had a net present value benefit to customers of approximately \$540 million.

Attachment 014-A is an Excel file, which contains the analysis. The summary results begin in Cell DI-3 of the "Hydro" tab.

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## II. DEFINITION OF DESIGN-BUILD

Generally, public agencies use three primary methods for procuring services for public improvements. Design-Bid-Build is the most common of the three and the one generally prescribed by law. The other two methods, known as CM/GC and Design-Build, are alternative contracting methods that may be utilized only if an exemption from competitive bidding is in place. These three methods are more fully described below.

### A. DESIGN-BID-BUILD

The Design-Bid-Build process is the traditional approach to delivering public improvement projects. Typically, the agency selects a design professional and works with the design consultant team to develop plans and specifications for constructing the project. While the design professional usually will either employ an independent cost estimator or prepare their own cost estimates, the actual cost of the project is solely determined by contractors during a competitive bidding process. Once the lowest responsive and responsible bidder is established and the agency has determined that sufficient funding exists, the contract is awarded. The contractor then proceeds to construct the Public Improvement according to the plans and specifications.

### B. CONSTRUCTION MANAGER/GENERAL CONTRACTOR

Construction Manager/General Contractor (CM/GC) is an alternative contracting method in which a single firm is selected during the early phases of the design process by a competitive selection process. This selection process involves consideration of other factors in addition to price in determining the successful firm. The selected firm, known as the CM/GC, then has the opportunity to work with the agency and design professional during the design process to provide value engineering, constructability review, scheduling, estimating, and other related services. Once the design has progressed to a suitable extent, contract documents for portions of the project can be prepared and construction can commence before all design services are complete. This process is known as fast-track construction. As a part of the process, the CM/GC typically provides a Guaranteed Maximum Price or GMP for the agency's acceptance. The CM/GC then usually competitively procures from sub-contractors and proceeds with the work. Compensation for CM/GC services is often based on a combination of a fee and a not-to-exceed amount for services to manage and construct the Public Improvement.

### C. DESIGN-BUILD

Design-Build is an alternative contracting method used for delivery of both the design and construction services under one contract. This makes the Design-Builder the single point of responsibility. Many variations of the approach exist, but all have "single point of responsibility" as a common element. Design-Build can be undertaken when a performance specification is developed and the entire package of design and construction services is competitively bid. More commonly, the Design-Builder is selected based on a combination of qualifications, technical approach and price. Occasionally, the selection is made primarily on the basis of a design competition. By combining these services, the opportunity exists to totally integrate the work of the contractor and the design consultant. This allows the selected firm to work with the agency during the design process to provide design, value engineering, constructability review, scheduling, estimating, and other related services. It also means that construction could start before the design is totally completed. Compensation for Design-Build is typically a fixed price or a GMP similar to the CM/GC process, however many variations exist.

**Figure 1 (which follows) briefly summarizes how different project characteristics may fit with these approaches. Note that the most typical variation of each method was utilized in this comparison.**

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**REDACTED  
March 18, 2009**

January 4, 2009

TO: Vikie Bailey-Goggins  
Oregon Public Utility Commission

FROM: Randy Dahlgren  
Director, Regulatory Policy & Affairs

**PORTLAND GENERAL ELECTRIC  
UE 204  
PGE Response to OPUC Data Request  
Dated January 26, 2009  
Question No. 043**

**Request:**

**Does PGE believe that fines would have been imposed if the SWW were not completed by April 2009? If so, please quantify these fines if the SWW were not completed until April 2010, or April 2011. In addition, would PGE have had to take additional steps with FERC and other agencies if the completion date of the SWW were not until April 2010 or April 2011? Please describe these additional steps in detail**

**Response:**

Assuming that PGE acted in good faith, it is unlikely that fines would have been imposed if the SWW was not completed on time. FERC does have the ability to impose civil penalties for license violations; we do not believe that fines would have been imposed in this circumstance.

However, once the completion date was set, the biological components of the reintroduction effort were developed to match the construction schedule. As discussed previously in PGE's Response to CUB Data Request No. 18 (copies of which were provided to the OPUC), there are a number of components to the effort to reintroduce salmon and steelhead into the Middle Deschutes Basin upstream of the Pelton Round Butte Project. Our main involvement is the building of the SWW and Fish Transfer Facility to safely pass the juvenile salmon and steelhead downstream. There are many other fish habitat enhancement and smaller fish passage projects have been completed, are ongoing or have been planned to complement these efforts, to allow the fish larger

areas to access, and to improve the capacity of the stream above our dams to rear these fish. One of the major components of this effort that the State, Tribal, and Federal fisheries agencies are involved in is the reintroduction itself. Hundreds of thousands of steelhead fry have been liberated into streams of the Deschutes and Crooked River basins upstream. Over 200,000 juvenile spring Chinook were liberated into the Metolius Basin streams last February. The timing of these releases was determined based on the completion date required by the license. The migration starts in March, and lasts through June. However, the peak downstream-migration period for these small fish is the last two weeks of April. The April 15th date was chosen because this will allow the majority of these small fish access through the project without substantial delay and increased mortality. Because these fish are only 4 to 8 inches long, substantial delay will create significant mortality and will mean that substantial effort and money has been wasted.

Because the schedule for completion of the SWW is contained in a condition mandated by NMFS and USFWS, it cannot be changed without their agreement. Which is to say, the necessary license amendment cannot be obtained without the approval of NMFS and USFWS. Therefore, in order to ask FERC to further amend the license to change the schedule, PGE would have to negotiate with NMFS, USFWS and other members of the Fish Committee to obtain their agreement. In light of the biological resources that would be damaged as a result of a delay, it is likely that the agencies would negotiate for some additional mitigation in exchange for agreement to a license amendment.

The process for obtaining a license amendment is detailed in volume 18 of the Code of Federal Regulations section 4.200 et seq.

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**STAFF EXHIBIT 208**

**Exhibits in Support  
of Reply Testimony**

**REDACTED  
March 18, 2009**



January 19, 2009

TO: Gordon Feighner  
Citizens' Utility Board

FROM: Randy Dahlgren  
Director, Regulatory Policy & Affairs

**PORTLAND GENERAL ELECTRIC  
UE 204  
PGE Response to CUB Data Request  
Dated January 14, 2009  
Question No. 030**

**Request:**

**PGE accepted the lowest bidder as contractor for this project. How did the process account for the lack of a finished project design?**

**Response:**

At the 25% design stage, it was necessary for PGE to partner with the design team and the contractor to manage costs and design complexities. Beginning work early in the design process with both the design team and the contractor was important to provide innovative construction methods to be incorporated early into the design, that reduced the risk of late changes or field changes; thereby minimizing costs.

Securing a contractor early in the process also assured PGE dedicated fabrication shop space in what was a very competitive construction market. Involving the contractor also improved the overall schedule by allowing for parallel activities such as completing detailed shop fabrication drawings, initial fabrication work, and geological field investigations.

The process and documentation for changes to the contract is detailed in PGE's Response to CUB Data Request No. 31.

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**STAFF EXHIBIT 209**

**Exhibits in Support  
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March 18, 2009**

# Chronology of Juvenile Fish Protection Events and Improvements at the Rocky Reach and Rock Island Hydroelectric Projects

**1978** State and local agencies petition the Federal Energy Regulatory Commission (FERC) to order the three Mid-Columbia PUDs to spill water to aid downstream fish migration.

**1979** Tests show new bulb turbine generating units at Rock Island are significantly less harmful to young fish headed downstream than vertical Kaplan turbines.

**1980** FERC approves an agreement between the Mid-Columbia PUDs and fish agencies which results in a year study of river flows and spill volumes to enhance survival of juvenile fish migrating downstream.

**1985** Chelan County PUD agrees to spills averaging 10 percent of the flow of the Columbia River to the spring intake of young salmon on a prototype deflector fish screen for the intake at the Rocky Reach project. The PUD begins sharing the progress with the downstream juvenile fish bypass system trap at Rock Island.

**1986** Construction begins on the \$11.3 million Eastbank hatchery and satellite facilities to supplement native salmon steelhead in three Columbia River tributaries as called for in Rock Island fish settlement agreement.

**1988** Fish and Wildlife expenditures for mitigation and enhancement total \$7.6 million, up 23 percent from \$6.2 million in 1987. The PUD initiates a study to estimate the mortality of early fall chinook being through one unit of Rocky Reach. Ninety percent of the 20 test fish survive. D, agency and tribal representatives begin negotiations on what will become the HCP for fish section in the Mid-Columbia River.

**1989** Development of a traveling fish screen guiding system at Rocky Reach is abandoned to poor results. A screen deflector is used instead. East-Reach hatchery begins operations.

**1990** Research continues toward developing prototype fish bypass systems. Eastbank hatchery, the heart of the Rock Island fish hatchery complex, commences its first full year of operations.

**1991** A fisheries settlement agreement for the Rocky Reach hydro project is filed with FERC. Chelan PUD intensifies efforts to develop fish guidance device for installation and testing at the Rock Island Powerhouse. A \$273,000 contract is awarded for fabricating and installing a prototype bar screen. A \$680,000 contract is awarded to design a major fish hatchery including a central facility, outplanting facilities and trapping locations to capture returning adult fish for taking eggs. At the Rocky Reach project, testing continues for the third year on an underwater traveling screen, but results continue to be disappointing.

**1992** A large turbine intake guide is installed on the face of the Rocky Reach powerhouse. A consultant is hired to plan a study for 1993 on the impact of normal turbine operations on juvenile fish. The study involves attaching a small deflated balloon and a radio transmitter to young fish, releasing them into the turbine water passageway on the upstream side of the powerhouse, and retrieving the fish on the downstream side after the balloon inflates. At Rock Island, efforts to develop an experimental bar screen for the Second Powerhouse are discontinued; high water velocities made the device ineffective. Studies now focus on developing an intake screen for the First Powerhouse generators. Tags are implanted electronically to track the movement of steelhead and chinook salmon down the Columbia River.

**1993** Fish and Wildlife expenditures for mitigation and enhancement total \$7.6 million, up 23 percent from \$6.2 million in 1992. The PUD initiates a study to estimate the mortality of early fall chinook being through one unit of Rocky Reach. Ninety percent of the 20 test fish survive. D, agency and tribal representatives begin negotiations on what will become the HCP for fish section in the Mid-Columbia River.

**1994** A \$278,340 contract is awarded to manufacture and install an underwater traveling screen for one of three intake bays of Unit C1 at Chelan County PUD's Rocky Reach Hydro Project.

**1995** A new surface deflection system, designed to take advantage of the nature of fish to swim current in the top feet of water, is tested at Rocky Reach. Fish that follow flows into the face collector automatically enter the project's bypass pipe, which moves them safely around the project. At Rock Island, intake screens at the first powerhouse continue to be tested. Chelan PUD begins design work to modify six spillway gates to test the effectiveness of shallow spills in moving juvenile fish safely past the project.

**1996** The surface collection system is tested for the second year at Rocky Reach. Intake screen tests are dropped at Rock Island; continuous shallow spills through six notched gates are used as a better alternative. Pre-acoustic monitoring of fish yields is conducted.

**1997** The prototype surface collector at Rocky Reach is modified, with enhanced results. Notched gates continue to be used at Rock Island. Upper-Columbia steelhead are added on the endangered species list.

**1999** Testing continues on permanent fish bypass system at Rocky Reach. At Rock Island, testing continues on passage through notched spillways. Upper-Columbia spring chinook are listed as an endangered species.

**2000** A deflector is installed beneath spillgates at Rock Island to test reducing total dissolved gases in the water. Significant planning and final design work are undertaken toward constructing a permanent surface collector and fish bypass system at Rocky Reach. Demolition of the prototype fish bypass system is set for 2001, with construction of a permanent system completed by 2002.

**2001** Extreme low water year allows opportunity for benchmark study on total dissolved gas levels in reservoirs and assessment of potential impacts on benthic organisms. Study will be augmented in years when flows approach average conditions. Construction of permanent surface collector and bypass system is delayed while negotiations proceed on final language for the HCP. Prototype remains in use at Rocky Reach.

**2002** Operation of the juvenile fish bypass system begins on April 1, 2003. The system will operate each year during the juvenile fish migration period from April 1 through August 31.

**2003** NOAA Fisheries approves biological opinions and incidental take permits for the Rocky Reach and Rock Island HCPs. President George W. Bush praises Chelan County PUD and Douglas County PUD for their HCPs during a visit to Ice Harbor Lock and Dam near the Tri-Cities on August 22, 2003.

**2002** Final agreement reached in March. Documents circulated for signing. Preliminary stages of construction on permanent bypass surface collector begin in February, with permanent system to be completed prior to downstream migration in April 2003.

**2003** A commemorative declaration marking completion of the proposed Habitat Conservation Plan is signed on the Columbia waterfront in Wenatchee. State and federal fisheries officials, members of Congress, and representatives of environmental groups and tribes attend the June 28 ceremony. The Anadromous Fish Agreements and Habitat Conservation Plan are submitted to the National Marine Fisheries Service for regulatory review. Bull trout are listed as a threatened species under the Endangered Species Act.

**CERTIFICATE OF SERVICE**

**UE 204**

**Replacement of Exhibits 203, 204, 207, 208 & 209**

I certify that I have this day served the foregoing document upon all parties of record in this proceeding by delivering a copy in person or by mailing a copy properly addressed with first class postage prepaid, or by electronic mail pursuant to OAR 860-13-0070, to the following parties or attorneys of parties.

Dated at Salem, Oregon, this 23rd day of March, 2009.

*Kay Barnes*

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Kay Barnes  
Public Utility Commission  
Regulatory Operations  
550 Capitol St NE Ste 215  
Salem, Oregon 97301-2551  
Telephone: (503) 378-5763

Interest Type(s): **Parties**

RANDALL DAHLGREN -- CONFIDENTIAL  
PORTLAND GENERAL ELECTRIC  
121 SW SALMON ST 1WTC 0702  
PORTLAND OR 97204

DOUGLAS C TINGEY -- CONFIDENTIAL  
PORTLAND GENERAL ELECTRIC  
121 SW SALMON 1WTC13  
PORTLAND OR 97204

S BRADLEY VAN CLEVE -- CONFIDENTIAL  
DAVISON VAN CLEVE PC  
333 SW TAYLOR - STE 400  
PORTLAND OR 97204

ROBERT JENKS -- CONFIDENTIAL  
CITIZENS' UTILITY BOARD OF OREGON  
610 SW BROADWAY STE 308  
PORTLAND OR 97205

G. CATRIONA MCCRACKEN -- CONFIDENTIAL  
CITIZEN'S UTILITY BOARD OF OREGON  
610 SW BROADWAY - STE 308  
PORTLAND OR 97205

JASON W JONES -- CONFIDENTIAL  
DEPARTMENT OF JUSTICE  
REGULATED UTILITY & BUSINESS SECTION  
1162 COURT ST NE  
SALEM OR 97301-4096

CARLA OWINGS -- CONFIDENTIAL  
OREGON PUBLIC UTILITY COMMISSION  
PO BOX 2148  
SALEM OR 97308-2148

# Labels: 7