BAKER R. FISH PASSAGE FACILITIES DESIGN
FISH PASSAGE TECHNICAL DESIGN TEAM

9:00 a.m. - 5:00 p.m.
March 08, 2004
(at Baker Lodge)

AGENDA

Objective: Continue engineering design development of Upper Baker Guide Net and FSC system.

7:30 - 8:30	Breakfast (provided)
9:00 - 9:10	Review agenda and handouts (Verretto)
9:10 - 9:15	Review minutes & action items (Verretto)

Downstream Passage

9:15 - 10:15	Guide net design review (Verretto)
10:15 - 10:35	Guide net & NTS slide show (Verretto)
10:35 - 10:45	Break
10:45 - 12:45	Guide net & NTS site visit (Verretto)
12:45 - 1:15	Lunch (provided)
1:15 - 1:35	Overall passage system development schedule (Brink)
1:35 - 4:40	FSC design memo review (Dorratcague) • structure • hydraulics • naval architecture • pump station • controls • electrical
4:40 - 4:50	Other Issues (Verretto)
4:50 - 4:55	Evaluate meeting & review assignments (Verretto)
4:55 - 5:00	Long-term schedule, agenda, facilitation (Verretto)
6:00 - 7:00	Dinner (provided)

PSE PUGET SOUND ENERGY

Baker River Project Relicense

Red Lion SeaTac Hotel 206-246-5535

DRAFT MEETING MINUTES
BAKER RIVER FISH PASSAGE FACIILITIES DESIGN
FISH PASSAGE DESIGN TEAM

Mission Statement: To develop an efficient fish passage design for the Baker River Project.

Project: Baker River Project
FERC No. 2150

Written By: Nick Verretto, PSE

Meeting Date: March 08, 2004

Location: Baker Lake Lodge

Attendees:

Arnie Aspelund, PSE	Steve Fransen, NMFS
Kevin Brink, PSE	Frank Hella, PSE
Greg Clark, MWH	Ed Meyer, NMFS
Dennis Dorratcague, MWH	Gary Sprague, WDFW
Ray Eldridge, MWH	Nick Verretto, PSE
Cary Feldmann, PSE	Bill Chrisman, Chelan Co. PUD

Purpose: Continue engineering design development of Upper Baker FSC and guidance net system.

Future Meeting Dates:

Mar 9, 2004	*9-3 passage design mtg at Baker Lodge.*
Apr. 13, 2004	*9-3 passage technical design mtg at Red Lion SeaTac Hotel.*
Apr. 14, 2004	*9-3 passage design mtg at Red Lion SeaTac Hotel.*
June 01, 2004	*9-3 passage technical design mtg at Red Lion SeaTac Hotel.*
June 02, 2004	*9-3 biological evaluation development mtg at Red Lion SeaTac Hotel.*
July 13, 2004	*9-3 passage technical design mtg at Red Lion SeaTac Hotel.*
Aug. 24, 2004	*9-3 passage technical design mtg at Red Lion SeaTac Hotel.*

See handout for additional meeting dates.

New Action Items

All - Comments regarding the FSC design memo are due in 60 days (by May 10) to Nick and Ray.
All - Provide comments to the initial testing plan within two weeks of receipt.
Nick & Ray - Coordinate cfd modeling secondary screens and pumps modeling plans with team members.
Ray - Change schedule to reflect Upper Baker biological evaluation start date of April 2007, and stress-relief ponds installation date from 2011 to 2007.
No other new action items were noted. Design development will continue based on today's discussion.

Technical Memos/Reports Distributed

The items distributed and reviewed at the meeting were: 03/08/04 and 03/09/04 agendas (PSE), long-term planning schedule (PSE), updated team list (PSE), minutes of 01/20/04 and 01/21/04 meetings (PSE), FSC design memo (MWH), updated FSC hydraulic and structural designs (MWH), 02/17/04 guide net and transition structure design memo (MWH), 10/10/03 and 03/04/04 passage development schedule (MWH), milestone dates of the passage development schedule (MWH), USFWS terms and conditions of 01/20/04(PSE), NMFS terms and conditions of 12/22/03(PSE), performance evaluation matrix (PSE), decision matrix flow chart (PSE), Baker

River Draft Proposed Actions, Section 3.2 (Fish Passage Management Implementation Plan) and Appendix (PSE).

Review Agenda, Minutes & Action Items
Verretto distributed handouts and reviewed general content of each.

Guide net design review
Updated guide net and net transition structure (NTS) designs were distributed and reviewed. The NTS has been successfully installed and connected to the gulper, despite some initial design and scheduling challenges. It is intended to control both the entrance geometry and approach hydraulics into the gulper, and incorporates many of the design features identified during the floating surface collector workshop conducted last August. The guide net has been completely redesigned, in an effort to prepare for the 2007 FSC & net system installation and to provide the best barrier possible for the interim period. Problems encountered in past designs have been addressed, and the latest iteration represents the most comprehensive design and testing effort conducted to date. The net will be further modified based on information and experience acquired during fabrication, assembly, deployment and operation. The entire operation has been pivotal in bringing net design and logistic issues to the forefront of system considerations for the 2007 installation.

Guide net & NTS slide show and site visit
An overview of the completed NTS fabrication, assembly & installation, and the ongoing guide net construction & installation project was presented via PowerPoint format. A field visit to view net assembly work and the completed NTS and gulper modifications was performed after the overview. Although slightly behind schedule, the whole system will be operational for the first scheduled marked-group release in April, and well before the run begins. The existing net will be removed after the new net is installed.

Overall passage system development schedule
Brink reviewed the long-term schedule, noting only a couple of minor changes. Rescheduling the Lower Baker FSC installation until 1 March 2009, as discussed and agreed at the December meeting, is the notable modification. Ray also presented a summary schedule of milestone actions & dates. The Upper Baker biological evaluation should be shown as starting April 2007.

FSC Design Memo Review
Dennis distributed the draft design memo (March 2004) for the floating surface collector (FSC) and reviewed it with the group. It contains the following sections: design criteria (biological, hydraulic, floatation, structural, mechanical, electrical), hydraulic analysis (existing data, far-field, wave, 575 cfs and 1000 cfs FSC), FSC design (structural, floatation, mechanical, electrical, instrumentation & controls), construction considerations, operation and maintenance, and FSC implementation schedule.

Comments by all participants regarding the design memo are due in 60 days, or by May 10, to Nick and Ray. Design memos for the net, NTS, stress-relief ponds and intake will be produced while the cfd modeling is being conducted – between now and the end of August.

Structure
The length of the present FSC structure is 262', and the transition structure and additional 75'. Ed recommended bolting the screens into place, which simplifies the seals detail. The seals would therefore be behind the screens and require no setback (which complicates brush tolerances) and potential for gaps that a slot design might entail. The backwash system may need to be modified with moving bars if debris becomes a problem.

Cary noted that bar alignment may be best vertical if no automatic brush screen cleaners are used. Dennis suggested a horizontal alignment to reduce head loss. It was suggested that the screen panels be constructed square to allow testing both bar orientations. Primary panels are 14' x 10', and secondaries 2' x 5'.

Five graving dock options were presented, which is the preferred construction and launch method for the new FSCs. Surveying of all proposed site options by Walker & Associates will occur at the same time, after consultation with and review by the archaeological consultant. The schedule shows a launch date of August-September for the FSCs. The August-September date is dictated by the need for high pool to minimize excavation requirements and consequent cost.

Hydraulics
The computational fluid dynamics (cfd) model is being coordinated with ENSR, and is scheduled to begin within a month, but is contingent on the results of settlement discussions. Nick and Ray will coordinate with the agencies as the development progresses. Comments to the initial testing plan will require a two-week response from participants to prevent delay and further compression of an already difficult development schedule. Participation in and comments and/or modifications to the testing plan will be accepted by the team during further consultation as modeling tests are conducted, and up to 30 days after completion. It is anticipated that modeling results will be received by the end of August. The modeling plan includes the forebay cfd, secondary screens modeling, pumps physical modeling, and pump chamber modeling.

Naval architecture
Detailed discussions will be held at the April design meeting.

Pump station
Four primary pumps of 212 cfs each are planned, with one spare on site (or all critical spare parts to allow a 24- to 48-hr. repair). Each of the four pumps has 3K lbs. of lift and 1,200 lbs. of forward thrust in its present configuration. The discharge configuration will be field-modifiable, as well as be addressed based on results of the cfd modeling. Veins behind the primary screens and extending into the secondary pump area are intended to redirect flow toward the pumps to reduce turbulence and flow distribution across all pumps. The change in pump performance curves over time may recommend building them at larger capacity and fitting them governors or isolating each with weirs. Modeling of the pumps will answer some of these questions.

Other Issues
None identified.

Evaluate Meeting
Did not conduct meeting evaluation.

Long-Term Schedule, Agenda, Facilitation

Mar 9, 2004	*9-3 passage design mtg at Baker Lodge.*
Apr. 13, 2004	*9-3 passage technical design mtg at Red Lion SeaTac Hotel.*
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See handout for additional meeting dates.

Tuesday, Apr. 13, 2004, 9-3 passage technical design mtg at Red Lion SeaTac Hotel.
Review agenda and handouts (Verretto)

Review minutes & action items (Verretto)
Guide net installation review (Verretto)
Overall passage system development schedule (Verretto)
NTS Design (Greg Clark)
Graving Dock (Dorratcague/Eldridge)
Model Studies (Dorratcague)
FSC Naval Architecture (John Springer)

Comments on FSC DM (Dorratcague)
Other Issues (Verretto)
Evaluate meeting & review assignments (Verretto)
Long-term schedule, agenda, facilitation (Verretto)

Facilitation: Will be provided for future passage meetings (not technical design meetings), unless otherwise noted.