



## **BAKER RIVER PROJECT LICENSE IMPLEMENTATION**

### **Aquatic Resources Group**

**October 13, 2009 (9:00 a.m. - 3:30 p.m.)**

**WDFW Mill Creek Office  
16018 Mill Creek Boulevard  
Mill Creek, Washington 98012-1296  
Telephone (425) 775-1311**

**Conference Call Line:** 1-888-228-0484, ID: 6058, Password: 12345

**Please tell Arnie (425-462-3442 (w) or 206-276-0316 (c)) if you plan to call into meeting**

### **AGENDA**

1. Review Meeting Notes/Agenda/Action Items <ul style="list-style-type: none"><li>• Announcement of Article 107c teamlet meeting (PSE)</li></ul>	9:00 - 9:10
2. BRCC and License Process Update	9:10 - 9:20
3. Required Decision Today: None	
4. Brief Updates Fish Facilities Operations Topics <ul style="list-style-type: none"><li>• Sockeye Loading, Sockeye Spawning Beach and AI Operations (WDFW/PSE)</li><li>• Fish Rearing Inventories &amp; Releases (PSE-Bruland)</li><li>• Adult Trap Protocol Update or Changes</li><li>• Skagit River Fish Update (WDFW)</li></ul>	9:20 – 9:45
5. Fish Passage Technical Work Group Update (PSE-Verretto) <ul style="list-style-type: none"><li>• Upper Baker FSC Biological Evaluation Study</li><li>• Lower Baker FSC Design Development</li><li>• Adult Fish Trap Construction Update</li><li>• Article 104 Connectivity</li></ul>	9:45 – 12:00
6. Hatchery Construction Update (PSE- Jenness)	12:00 – 1:00
<i>Lunch Provided at 12:00</i>	
7. Other License Implementation Updates (PSE-Venard) <ul style="list-style-type: none"><li>• Article 110</li><li>• Article 505</li></ul>	1:00 – 1:15
8. Evaluate meeting, set agenda for next meeting (November 10 <sup>th</sup> , 2009)	1:15 – 1:20
9. Convene an Article 107 (c ) Teamlet (immediately following ARG meeting) (Killgore)	1:30 – 3:30



*Baker River Project License Implementation*

**Aquatics Resource Group Meeting  
Final Meeting Notes**

October 13, 2009 ~ 9 am – 2:00 pm  
**Washington Fish & Wildlife, Mill Creek WA  
Conference Room**

**Team Leader: Arnie Aspelund, PSE,** (arnie.aspelund@pse.com)

**PRESENT:** Arnie Aspelund, Doug Bruland, Nathanael Overman, Cary Feldmann, Mark Killgore, Kathy Kimbell, Dave Jenness, Jory Oppenheimer, Jacob Venard (by phone), and Nick Verretto (PSE); Phil Hilgert (R2); Brock Applegate, Brett Barkdull, and Mark Hunter (WDFW); Lorna Ellestad (Skagit County); Stan Walsh (SRSC); Jon-Paul Shannahan (Upper Skagit Tribes); Arn Thoreen (Skagit Fisheries), Bart Madison by phone (Trout Unlimited), Bob Helton (Citizen); Stan Zyskowski (NPS); Steve Fransen (NOAA); Jamie Riche and Candace Wilson (PDSA Consulting, Inc.).

**NEXT ARG MEETING:** November 10, 9-11 a.m. conference call, and December 8 in person. ARG will continue to hold the 2nd Tuesday of each month in 2010, alternating between conference calls and in person meetings.

**DECISIONS** – None today

**NEW ACTION ITEMS**

- Arnie Attach the August 2009 Adult Trap Protocol to the meeting notes
- Nick Send Bart the disk of LB FSC docs; invite him to next Wed's review with Lou Ellyn
- All Let Nick know if you'd like a copy of the LB FSC disk (notes, studies, technical memos, etc.)

**PREVIOUS, STILL RELEVANT, ACTION ITEMS**

- All Get your preliminary comments on Article 505 Plan to Jacob by October 30
- Cary Check to ensure current ARG meeting notes are posted to Baker Relicense website
- Cary Head up analysis on flows during steelhead spawning season
- Doug Remind Chuck when doing snorkeling surveys. Send snorkeling schedule to co-managers and Chuck
- Marty Update the picture on the Article 505 Plan
- Jed Reconvene a teamlet in April / May 2010 to address sockeye fry release strategies

**REVIEW OF AGENDA, NOTES, HANDOUTS**

The notes were reviewed from the September conference call and accepted with no changes. The agenda was reviewed and "Low Flow Conditions" was added under Fish Operations. Arnie reported that the meeting schedule will continue to be the second Tuesday of each month with face-to-face meetings every other month and conference calls on the alternate months.

**BRICC / License Updates**

Arnie reported that the BRCC met September 23; the meeting included a review of the Baker License including Settlement Agreement articles, item by item. This license review will likely become an annual activity. Resource groups provided updates, largely centered on management plans, which have been finalized and filed. Recreation group working on the resort redevelopment activity, and the TRIG is making progress toward land acquisition.

The fourth Wednesday of each month is being reserved for a BRCC conference call as needed (probably only needed quarterly), and face-to-face meetings will occur at least semi-annually.

## **FISH OPERATIONS**

### **Hatchery / Inventory and AI Operations**

Doug started by noting that construction is well underway. It is starting to look like a hatchery, and that is exciting. They are working around the construction crew, and this is going well.

Construction is creating a tight schedule; once sockeye spawning is complete, they will drain and disinfect the trout pond for the Rainbow. It must be dewatered for construction of the retaining wall, and they will need to hold the trout in the circulars during that time (about 3 weeks).

### **Baker Fish Rearing Inventories & Releases**

As of today, there are 1,500 fish in brood stock for spawning; will crowd / count today. We are unlikely to spawn many as most are still green, but will spawn whatever is ready. We'll move to a weekly spawning regime, mostly on Wednesdays. Then we will switch to a 3-day a week formalin treatment to keep down fungus, as per normal protocol.

Coho: we have 91 brood stock in the trout pond, which is about half of what we will be getting for brood stock. Can't tell yet whether the run is early or normal. Numbers were high, but have been dropping. We hope more Coho will come. Arnie shared that PSE is working to be able to maintain return data on the web (real time update).

### **Adult Trap Protocol**

The protocol was updated August 2009 (the outdated version from 2008 was inadvertently distributed in the meeting). We used to take the Chinook to Marblemount; now we are sacrificing every 5<sup>th</sup> coded wire tag hatchery fish for tag extraction and releasing the rest to the Skagit. Due to low flows, the Hamilton launch doesn't work, so the team is currently releasing them at the mouth of the Baker. We may try releasing them upstream.

### **Adult Fish Return**

The sockeye run was above-average and is now over. We met all loading goals and had surplus. We have over 900 in each beach; they are starting to color up and will be spawning shortly. We have over 1100 in the lake and are doing weekly surveys of spawning activities in Baker Lake, hoping for success with natural spawners from the lake.

### **Skagit River Fish**

Brett (WDFW) reported. The river is full of pink salmon right now. We're just now getting toward the peak of spawning. Looks like our pre-season forecast (1.2M) might be low. Total estimate of Skagit sport fishing is 200 Chinook. (Described in the meeting as "a lotta fishin,' not much catchin'.") Peak spawning timing for Chinook has not been consistent in recent years; it is moving 2-3 weeks later in the year. This makes it harder to count, as their run now overlaps the pink run, which in addition to being heavier than normal, is also coming in earlier.

## **FISH PASSAGE TWG**

Nick Verretto reported on the work of the Fish Passage Technical Working Group in their last two meetings Aug. 18 and Sept. 25. Design work on the LB FSC is in a lull as the final design consultant selection process progresses, so there are no meetings scheduled at this time. It may, however, be worthwhile to have a short meeting or conference call to talk about FSC studies before the next meeting. Expect the next SeaTac design meeting February 2010.

### **Upper Baker FSC Performance Review & Biological Evaluation**

Nick reviewed the Upper Baker Floating Surface Collector 2009 performance evaluation results. This was the 2<sup>nd</sup> year of operation of the new UB FSC, which began operation spring 2008. Lower Baker FSC startup is scheduled March 2013, since a one-year extension was granted.

Last year was a record run of 474,513, which exceeded the previous record of 346,599 (2006) by 37%, or 128,000 fish. Nick reviewed performance criteria: collection is 95%, survival within facilities is 98%. He reviewed performance study limitations, such as inability to determine performance and flow preference concurrently. Only one parameter can be effectively evaluated in one season without a very large and complicated testing protocol due to the inability to isolate causal mechanisms in multiple-variable tests.

Nick reviewed performance data and conditions for 2008 and 2009. The percentage of recovery, when taking into account the adjustment factor, meets expectation for coho and approaches expectation for sockeye. According to earlier fish passage consultation discussions, performance has to exceed a minimum level and subsequent years must demonstrate a level of improvement in recovery rates. There was brief discussion of the difficulty in establishing accurate performance data.

Operating alternatives for Upper Baker for 2010 and beyond:

- modify screen facility and operate at 1,000 cfs
- operate existing facility at 500 cfs
- operate existing at 1,000 cfs (operational expense issues)
- continue testing existing under variable (500 vs 1,000 cfs flow)

Nick's recommendations:

- 2010 repeat flow comparison test without PIT tags of wild & marked fish with gate switching to determine flow preference (Raceways 1 and 2 at 500 and Raceways 3 & 4 at 1,000 cfs)
- 2011 conduct constant 500-cfs performance test
- continue design course for Lower Baker FSC

Determination of the fry injury rate at 1,000 cfs in the present 500-cfs configuration will assist future discussions regarding addition of screens module if 1000-cfs pumping capacity is required. There was some discussion of the effects/benefits of solar radiation on return rates and the use of artificial lighting; the group agreed that studying this would be difficult but will be considered in future.

If you would like to see a copy of the full PowerPoint presentation, please contact Nick Verretto.

### **Lower Baker FSC Design Development**

Phase 1 Scoping, completed mid-September, focused on identifying primary design details and answering significant questions. Phase 2 will complete the design and take the project into fabrication and construction. The consultant selection process is underway, with proposals due next week, and scheduled end of October. The first cost estimate will be available at the 30% design stage.

Facility design has been separated into eight components/packages, each developed individually but coordinating with other packages. These are:

- Package 1 Guide Net / Debris Management – Brock requested 'early and often' consultation re: underwater trees.
- Package 2 Net Transition Structure
- Package 3 FSC Fish Collection System.
- Package 4 Floating Structure Construction
- Package 5 Mechanical / Electrical Controls
- Package 6 FSC Mooring
- Package 7 Fish Transport & Personnel Access
- Package 8 Construction Site

The design philosophy is to duplicate the Upper Baker FSC as much as possible, incorporating modifications for performance improvement, cost savings and to simplify operations. The major differences have to do with mooring, fish transfer / access via a pier and boat system, more complicated net and debris management systems, and the large number of underwater trees. The proposed structure will be seven feet longer and four feet wider than

at Upper Baker, the holding raceways shallower and the sampling area reduced in size. Modifications will be based on lessons learned at Upper Baker.

Nick reviewed the Phase 1 process and document tracking files which identify all significant technical memoranda (TM), meeting notes, design memoranda (DM), criteria and preliminary design information. Major changes to the Lower Baker FSC fish holding and sampling areas design compared to the UB FSC are outlined in Technical Memo 3.3. If anyone would like a disk with all of the information (meeting notes, technical memos, sketches, etc.), please contact Nick (disks distributed to Stan, Jon-Paul, Steve, Lou Ellyn, Brock; will be sent to Bart, Bob, Lorna, Ed, Doug, Phil). Design criteria will be reviewed through the FPTWG and possibly the full ARG before submission of a consolidated errata memo to FERC, to correct several inconsistencies between licensing & prescriptive documents and the as-builts and planned facilities.

A Lower Baker acoustic study, performed between May 5 and July 20, confirmed FPTWG assumptions relative to the migratory path for siting decisions. The study had a 96% detection rate and showed widely variable paths with no evident preference and a tendency for the fish to 'hang out' in the forebay area for quite a while. No difference was identified among species. Results support – or at least don't refute - the FSC siting proposal.

### **Adult Fish Trap Construction Update**

Nick showed a conceptual rendering of the upstream fish trap, describing construction progress. The river-side intake on is complete, and work is progressing on the shore-side intake. Raceway framing and concrete installation is underway. The intake pipe from the powerhouse is complete, and the contractor has finished the holding pond diffuser pipe connections. Work on the superstructure and lock system will begin after the fall fish run. See the construction permitting consultation document for future construction dates.

### **Article 104 Connectivity**

First-year genetic analysis was completed by WDFW last December, and year-two is underway, with results anticipated mid-November. Phil has been coordinated the consultation and article development, and field work is underway. Nathanael will take over the Article 104 responsibility from Nick beginning 2010. Expect to hear more in February, after genetic analysis results and USFWS consultation.

### **HATCHERY CONSTRUCTION**

Dave Jenness gave us an update and photo show on the construction progress for the new hatchery. Walls are up on the administration building, and roofing is underway. The goal is to close in this building by the end of the month, so Kevin Kurras (WDFW) can move office functions and the old building can be demolished. Permanent power is going in this week. The swim up area has some walls. The head tank area is also partly done. The spawning area is similar to the Issaquah hatchery, with sloped floors and a 3 foot wall in the middle. This project is on track to be up and running May 2010, ready for next summer's runs. The spawning beach will be completed in November. Site work / landscaping will continue for a couple of months beyond that.

### **LOW FLOW CONDITIONS**

Arnie invited a discussion about current flow conditions. Skagit is experiencing unusually low flows and inflow to the project is also low. Stan reported that the Sauk River gauge is below 1000 cfs.

The group reviewed license language. Per the Interim Protection Plan (IPP), PSE has been in no-generation mode since mid-September (with the exception of two-hour releases in the early morning hours to attract fish to the adult trap). The Skagit has been approaching low flow criteria. There is a reserve of 41,000 acre-feet in the Baker reservoir storage set aside as a hedge against persisting dry conditions. When released at 3,200 cfs, this reserve would be exhausted after 7 days.

There was discussion of the possible impacts to spawning from changes in flow and the effects of maintaining vs. expending the reserve. Rain is forecast for the next week, which should alleviate the current situation. The group agreed to maintain the reserve for now. There may be a need to reconvene a conversation in 7-10 days (after this rainstorm) to review whether it would be appropriate to generate at that time to protect Chinook redds. Cary noted

that NOAA, in consultation with the co-managers, will ultimately make the decision. If anyone has questions, please call or email Steve Fransen.

## **OTHER LICENSE IMPLEMENTATION UPDATES**

### **Article 110 – Shoreline Erosion**

Jacob reported that the preliminary draft plan went out in August and a few comments have been received. Brock will send Jacob his comments by the end of the month. PSE filed a request for a 1-year extension for submission of this plan. If granted, the new due date will be October 1, 2010.

### **Article 505 Aquatic Riparian Habitat**

A preliminary draft plan was sent out the end of August and comments are due the end of October. Bob Helton gave comments to Arnie at the meeting. Jacob noted that there is still quite a bit of process to be worked through. The ARHWG will meet after the December 3 TRIG meeting to review comments.

### **New Turbines**

That project is moving ahead, and is under study. URS-Washington Division was selected as design contractor.

## **HANDOUTS**

- Agenda, Notes,
- Lower Baker FSC Site Assessment
- Baker Hatchery Fish Inventory October 8, 2009
- Baker Adult Trap Protocol (Sept. 2, 2008)
- Baker River Adult Fish Return

## **MEETING EVALUATION**

### **Worked Well:**

- adequate facilitation
- Nick did great talking for 2 hours straight
- fun to see Hatchery photos
- food :)

### **Do Differently:**

- more applicable analogies
- temperature in the room varied widely, got chilly

## **AGENDA FOR NEXT ARG MEETING - November 10, 2009 Conference call**

Arnie will develop the November 10 agenda. probably centered on 107(c) topics.

---

## **107(C) TEAMLET MEETING NOTES (2:00 pm- 3:30 pm)**

**Teamlet Leader: Mark Killgore, PSE,** (mark.killgore@pse.com)

**Present:** Arnie Aspelund, Cary Feldmann, Mark Killgore, Kathy Kimbell, Jory Oppenheimer, Nathanael Overman (PSE); Phil Hilgert (R2); Brock Applegate (WDFW); Stan Walsh (SRSC); Lorna Ellestad (Skagit County); Bob Helton (Citizen); Jamie Riche and Candace Wilson (PDSA Consulting, Inc.).

### **ACTION ITEMS**

- Kathy Bring post-flood analysis of peak flow reduction due to Baker operations
- Mark Bring talking points related to Kathy's PowerPoint on recent high water events (perhaps in the form of "notes pages" with additional details)
- Lorna Check with diking districts to see if they are on the NWRFC system

This is the formal convening of the ARG's 107(c) Teamlet. *Work products by the teamlet, when finalized, will be available to the ARG.*

Mark walked the group through a review of Article 107(c) and the ARG's February 2009 conversation around flood control. A report on this is due to FERC on October 1, 2011.

Kathy walked the group through an analysis of four recent high flow events, including the pre-existing and unfolding conditions for each, and the operational / regulatory constraints at the project.

- Kathy will look at the 2003 event and perhaps other similarly large events to review what changes we could expect with alternate actions
- Lorna noted that Skagit County is increasing the number of field observers who will be able to record actual peaks at various locations on the Skagit River.
- Bob asked if it would be possible or helpful to figure out the statistics on storms that are likely to exceed the reservoirs' buffers.

Phil (R2) walked us through a presentation on the environmental effects of high water events. He reviewed flow levels and thresholds for impacts to spawning for different species.

Looking to the future, the Teamlet's job is to examine existing and potential protocols to evaluate what could be done to prepare for imminent flood events and then use that analysis to determine what could and should be done in the future, particularly once the IPP is no longer in effect.

- Under what circumstances would we recommend variances from the license prescriptions?
- What considerations should the teamlet address? Some ideas included an evaluation of peak and duration of events, an understanding of pre-existing conditions, and consideration of the forecast (what is it and whether it is consistent and persistent).

### **Next Steps**

- Kathy and Mark will continue to review previous high water events and analyze the possible effects of alternative actions
- Next face-to-face meeting will likely be scheduled to follow the December 8 ARG meeting. Kathy has contact information and will call the Teamlet if an imminent flood event is forecast before then. For the purposes of this Article, the teamlet is assumed to be a representation of the ARG, and if you would like to participate please join the teamlet.

### **Handouts**

- 107 (c) Teamlet Process Diagram
- Draft Process Flow Chart for Imminent Flood Management



**PUGET SOUND ENERGY**  
*The Energy To Do Great Things*

**WebEx Information:**

Hello ,

Arnold Aspelund invites you to attend this online meeting.

Topic: Baker ARG Meeting  
Date: Tuesday, October 13, 2009  
Time: 8:45 am, Pacific Daylight Time (GMT -07:00, San Francisco)  
Meeting Number: 335 192 913  
Meeting Password: 123456

Please click the link below to see more information, or to join the meeting.

-----  
To join the online meeting (Now from iPhones too!)  
-----

1. Go to <https://pseinc.webex.com/pseinc/j.php?ED=114952432&UID=0&PW=f92584471e5e4c5b55>
2. Enter your name and email address.
3. Enter the meeting password: 123456
4. Click "Join Now".

-----  
For assistance  
-----

1. Go to <https://pseinc.webex.com/pseinc/mc>
2. On the left navigation bar, click "Support".

You can contact me at:  
[arnie.aspelund@pse.com](mailto:arnie.aspelund@pse.com)

To add this meeting to your calendar program (for example Microsoft Outlook), click this link:  
<https://pseinc.webex.com/pseinc/j.php?ED=114952432&UID=0&ICS=MI&LD=1&RD=2&ST=1&SHA2=2fzAzjKGLvKQflcNR3DYak/1p6x3cn-kdvlqROaq7Xc=>

The playback of UCF (Universal Communications Format) rich media files requires appropriate players. To view this type of rich media files in the meeting, please check whether you have the players installed on your computer by going to <https://pseinc.webex.com/pseinc/systemdiagnosis.php>

Sign up for a free trial of WebEx  
<http://www.webex.com/go/mcemfreetrial>

<http://www.webex.com>

We've got to start meeting like this(TM)

IMPORTANT NOTICE: This WebEx service includes a feature that allows audio and any documents and other materials exchanged or viewed during the session to be recorded. By joining this session, you automatically consent to such recordings. If you do not consent to the recording, do not join the session.