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Baker River Project License Implementation

Aquatic Resource Implementation Group
Final Meeting Notes

May 11, 2010 ~ 9:00 am - 3:00 pm
PSE Snoqualmie, w/ Web-X and Conference Line

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

PRESENT
Cary Feldmann, Kim Lane, Nathanael Overman, Mark Killgore, Jory Oppenheimer, Jacob Venard, and Nick Verretto (PSE); Stan Walsh (SRSC); Lorna Ellestad (Skagit Co.); Phil Hilgert (R2); Jay Smith (TetraTech); Lyn Wiltse and Jamie Riche (PDSA Consulting).

BY PHONE: Brock Applegate (WDFW); Scott Williams and Doug Bruland (PSE); Chuck Ebel (USACE)

DECISIONS
- None today

NEXT ARG MEETING: June 8 with the BRCC at Baker Lodge, including tour of the Upper Baker FSC, new hatchery, and adult fish trap
NEXT FPTWG MEETINGS: July 14 (360 review) and August 24 (60% design submittal) at Sea-Tac

Quotable Quote: *"Your frustration is my frustration. We're in this together."* – Stan Walsh

ACTION ITEMS
- Nathanael Email to the ARG any handouts that weren't emailed in advance, including the TetraTech PPT on the feasibility study methodology on drawdown protocols (Article 107c).
- Cary Coordinate and communicate logistics for the June 8 ARG / BRCC Meeting at Baker Lodge.
- Kim Send Brock an electronic copy of the Article 407 Flow Continuation Study.
- Kim Send information about the Flow Continuation Study to Chuck at the Corps.
- Arnie Celebratory food for June 8 … in honor of record-breaking FSC returns.
- All Ask Nick if you would like a copy of PSE's comments on the LB FSC design (these are visible in the track-changes design distributed 4/28; Nick can send them to you in list form if you prefer).
- All Let Nick know if you want to attend next week's site visit to the Adult Trap and FSC with Montgomery Watson.
- Jed Reconvene teamlet in May to address sockeye release strategies.
- Co-Mgrs Define brood stock allocation protocol and send to Arnie by end of May.

PREVIOUS - STILL RELEVANT - ACTION ITEMS
- All Review the ARG representation list for your organization. This directs where reports are sent for official review.

UPDATE ON ACTION ITEMS

- Lyn reminded folks to make sure the primary and secondary contacts for their organizations are correct in the ARG representation list. It determines who receives license-related documents.

- Mark confirmed that PSE is planning to use the Corps' inflow hydrographs for the Article 107c study. The model inputs are consistent with those being used in the Corps; GI.

BRCC / LICENSING UPDATE

Lyn noted that Arnie forwarded the BRCC's written resource group updates to the ARG along with the agenda and other documents for this meeting. The next BRCC meeting will be held June 8 with the ARG at the Baker Lodge.

BAKER FISH HATCHERY

Nick introduced Scott Williams as the new project manager for the Adult Fish Trap and hatchery. Scott walked the group through a photo review of the UB Hatchery Renovation. He reported PSE is on schedule for substantial completion of the hatchery on June 1 of this year. Attention will then turn to the renovation of Spawning Beach #4. The presentation included photos of the project.

ADULT FISH TRAP UPDATE

Scott reported on last week's testing of the fish lock. On May 4, a piece of steel rotated (likely due to the pressure of about 40 feet of water), blowing the gate out of its rails. The slide gate, vertical crowder, and removable barrier were damaged. A new slide gate is being fabricated while the crowder and removable barrier have been removed for repair, taking into account lessons learned. Nick provided additional details, noting that all other components are currently being tested. The repair should be completed and the trap watered up by no later than June 1. PSE feels that the project will still be completed by June 1.

ARTICLE 407 FLOW CONTINUATION STUDY

Kim Lane reported on the study PSE commissioned per Article 407. The license calls for two 750 units in order to continue to use the old penstocks in the existing powerhouse. Upon further review of cost assumptions, soil conditions and space constraints of the old site, the single 1,500 unit will provide the same flow. The study evaluated whether valves or other measures should be used to provide reasonable assurance of flow continuation during Project outages. April and September inflow scenarios were used as the extremes for purposes of the study. Kim explained that, as a result of the study, a single 1500 cfs unit will be installed. It was determined that all downramping sequences, under any outage condition, can be met with the new flow continuation (independent synchronous bypass) valve. As an added environmental benefit, the valve provides continuous flow during an outage and allows for load balancing without affecting flow. It also provides a "greener" way to balance flow (vs. firing up a combustion turbine).

PSE will also be pursuing a license amendment to allow the powerhouse to be relocated from the original site.

The report is out for the official 30-day review; comments are due to Kim by June 4, 2010 (kim.lane@pse.com).

FISH PASSAGE TECHNICAL WORKING GROUP UPDATE

Nick reported that the Fish Passage Technical Working Group (FPTWG) last met on May 7. Upcoming FPTWG meetings (at SeaTac) are July 14 (Adult fish trap construction/operations and Lower Baker FSC pre-60% review) and August 24 (Upper Baker FSC operation update, 2010 preliminary performance study results, adult fish trap update, 60% Lower Baker FSC design submittal).

FSC Studies: Nick walked the group through the early data from the 2010 FSC Flow Preference Study, emphasizing that it is too soon to draw conclusions from these data. The study started April 19 and goes through June 11 and includes daily (8:00 am) switching between flow conditions: 500cfs inflow for 24 hour periods (returns held in raceways 1 & 2), then switch to 1000cfs for 24 hours (returns held in raceways 3 & 4). We'll get another update at our June 8 meeting.

Article 103: The Preliminary Draft Adult Fish Trap Emergency Response Plan submitted by Nathanael for comment in February has now been submitted to the FERC. A Final ERP will be developed and distributed for another 30-day comment mid-June, prior to the FERC submittal deadline of September 1, 2010.

Article 105: The Downstream Fish Passage Construction and Design specifications for both Upper and Lower Baker developments must be submitted to FERC by October of this year. PSE will request an extension so the plans for Lower Baker can be submitted to FERC next summer, which is consistent with the updated construction and startup schedule.

Electroanesthesia Effects on Salmonids: Nick briefly explained the electroanesthetic selection process and technology. Prior to handling at the adult fish trap sampling station, fish are held in a pre-anesthetic pond, then a small number of fish are crowded into the Electroanesthetic well. The electroanesthesia is delivered in two stages: first at low voltage to calm them down and prevent jumping, then at higher voltage to render them unconscious. NMFS and PSE are sensitive to the potential for injury to the fish or gametes due to the wide range of susceptibility of fish of different size, fat content, or even species, and are taking precautions to safeguard against this harm. Nevertheless, the new technology poses some risks, most of which will have to be mitigated by operational changes based on experience.

A system test was conducted last week by a Smith-Root representative and Baker fisheries staff using brood rainbow trout from the Marblemount hatchery. Everyone was impressed with the electroanesthesia system operation and the design of the sample area. The test fish are being held in circulars for evaluation of delayed impact. The fish will be sacrificed and evaluated sometime in May for evidence of unobservable injury. Nick shared a literature review of known effects of electro shocking. PSE will continue startup testing and share additional information as it becomes available.

Lower Baker FSC Design: At their meeting last week, the FPTWG reviewed the 30% design drawings, and Nick walked the ARG through highlights. The design drawings and design memo (which includes the equipment list and outline of specs) were sent to the ARG on April 28, 2010 for review. PSE has submitted their comments to Montgomery Watson, and conducted a review of MWH responses May 4th. Nick can be contacted if you want to review the matrix documenting these issues, or if you intend to submit comments on the 30% designs. The design includes aspects of the UB FSC design along with site-specific adjustments for the Lower Baker facility. Nick suggested the most meaningful review would be of the design drawings, and walked the ARG through a high-level review. Pier, moorage, and parking lot issues have been deferred for a year due to negotiations with Cal-Portland for use / purchase of that property. In the meantime, a follow-up evaluation of recommendations from a Value Engineering session conducted last week is underway. Nick is setting up a site visit to the Adult Trap and FSC with NMFS and Montgomery Watson for May 25th, and has a design detailing session planned Tuesday May 18 at MWH. Nick will coordinate with Stan regarding each of these and send the 30% design comments matrix to Stan and Brock. Contact Nick if you'd like to attend either meeting.

FISH FACILITY OPERATIONS UPDATES

FSC Update: Doug only barely refrained from a celebratory whoop while dazzling the group with statistics when he gave the FSC operations update. On May 4, they set a new one-day record with 85k fish recovered (84k of which was no-mark Sockeye). Doug noted that they are keeping up with this return even better than last year, when the record was set with two consecutive 60k-plus recovery days. Over six days, they have received 230k.

So far this year, they've recovered a total 265k sockeye! Even if it stopped now, this would be the third-highest run on record and, even if this is an early run, there is probably still about half the run left to come in. For comparison, last year's FSC total was also a record at 335k. Doug noted that, even with these record returns, there has been 100% sampling so far, including documentation of 500cfs and 1000cfs returns for the FSC study.

The numbers at Lower Baker have been more in line with averages, 100-200 fish per day. They are doing hook and line char sampling for DNA.

Fry Production: Beach 4 is getting 4-7k Sockeye each day.

Incubation Worksheet: Doug reported that they have cleared out the last of the incubated sockeye fry (90k today), for a total of 1.6 million fry, which are held and fed at the hatchery for a week before their release into the lake at Old Beach #3 or Blue Tarp.

Baker Fish Inventory: Doug noted that production is at the old hatchery until the new one is commissioned.

- Raceway 1 is holding 173k Sockeye fry. They will hold 65k there and release the rest into Baker Lake.
- Raceway 2 has 219k Coho fry, which are doing well. These will be held until June and all but 65k will be released into Lake Shannon.
- The trout pond has 4,800 fish. The Upper Skagit Tribe will pick up 1,000 for their Trout Derby and the rest will be released into Depression Lake by the end of May.

Salmon and Trout Release Records: 48,000 ad-clipped Coho were released into the Skagit last week, so all the yearling Coho are out.

ARTICLE 107(C) – FLOOD MANAGEMENT

Mark, PSE, introduced Jay Smith of Tetra Tech who walked the group through a PowerPoint on the study of potential operational protocols to drawdown the Baker Project to target elevations consistent with Articles 106 and 107. Key questions that the study has been designed to answer include:

1. Is there a threshold event for which imminent flood drawdown could moderate flood impacts?
2. Which NWS station should be used to monitor for imminent flood (UBDW1 and/or CONW1)?
3. How many hours or days before Skagit River flood stage could imminent drawdown start?
4. Is the threshold event seasonally dependent?

The study will simulate Baker operations antecedent to and during flood events. Jay described the reservoir drawdown model that they will be using, along with associated inputs and outputs. The drawdown model will account for both IPP constraints scenario and Post-IPP constraints scenario (after Lower Baker Unit 4 is operational) and the Project's physical capacity to evacuate water. They will run models under a variety of flow conditions: with and without license constraints under the two aforementioned scenarios. Synthesized hydrographs, developed by the Seattle District USACE for a range of inflows of various return periods (balanced hydrographs) will be used as the basis of the analysis to determine model operations; and the resulting modeling assumptions will then be tested with historical hydrographs.

In summary, the study hopes to determine the feasibility of imminent flood drawdown protocols under the IPP and under the Flow Implementation Plan (Post-IPP). These protocols could define a threshold event that would trigger imminent flood actions, when imminent flood actions would be initiated, and the rate and duration of imminent flood drawdown. These protocols could be seasonally dependent.

The group talked about next steps and the application of this study to the ARG's work. Cary noted that this technical study is intended to inform a dialogue around whether or not it makes sense to request a variance to the constraints (the "cookbook" we follow) under certain event conditions. It would be up to the ARG to decide what it does with the data learned. Jay has agreed to return to this group and keep us updated on initial use of the model, probably at our July ARG meeting. ARG feedback will be continually sought throughout the process.

ARTICLE 505 – AQUATIC RIPARIAN HABITAT PLAN

Jacob reported that the Article 505 Aquatic Riparian Habitat Working Group met last Thursday. They focused on finalizing the 505 plan and developing the process for reviewing and approving 505 project proposals. They are scheduled to meet again the afternoon of the TRIG meeting June 3 at the PSE office in Burlington.

SOCKEYE PRODUCTION CAPACITY REPORT (ARTICLE 101)

Phil (R2) reported that the zooplankton and water quality samples were collected without incident according to the study plan and have been shipped out to the lab. It is too soon to draw conclusions. Phil pointed out that temperatures were slightly warmer in both lakes in 2010 compared with 2009. We are awaiting the lab results (water quality analysis is due in late May; zooplankton sample analysis is due in late July). Since the final report is due October 1, the schedule will be tight. Data analysis will start as soon as the zooplankton results are back (which we hope is sooner than July), and the goal is to get a draft review into PSE's and ARG's hands in September. FYI - This isn't due to FERC until the annual report goes out.

ARTICLE 104 – NATIVE CHAR UPDATE

Nathanael reported on 2010 management protocols for Baker Basin native Char. The main difference *for 2010* is that bull trout *are being PIT-tagged and transported (upon recapture) to locations consistent with their genetic origin*. A new bull trout angling program has been initiated for Lake Shannon. *Angling will focus on PIT-tagging and analyzing tissue samples for as many bull trout as can be obtained. Upon recapture, bull trout of out-of-basin origin will be transported to the Skagit River, Sulphur Creek-origin bull trout will be released back into Lake Shannon, and Upper Baker-origin bull trout will be transported to Baker Lake (Jun-Nov) or to the Skagit River (Dec-May). Angling will continue through mid-November of this year with the exception of October to minimize angling stress on ripe bull trout*

Handouts:

- 5/11/10 Meeting Agenda, 4/13/10 Notes, ARG Schedule and Participation List
- Fish Passage Technical Working Group Meeting Schedule
- Electro-anesthesia effects on Salmonids
- FSC Flow Preference Study
- April Update to BRCC
- Hatchery Update PPT
- Adult Fish Trap Destination Protocol
- Status Report on Sockeye Report Study
- Upper Baker Juvenile Fish Trap Data
- Fry Production Beach #4
- Baker Adult Fish Return Season June 2009 - May 2010
- Baker Adult Fish Trap Protocol, 2009-2010 Final Report
- Sockeye Production Capacity - Status Report

MEETING EVALUATION

What worked well:

- Good agenda, meaty but not packed
- Article 107 presentation

Do differently:

- Try projecting from laptop rather than through PSE's server
- Increase display size (project onto a screen rather than via TV set)
- More attendees
- Need deviled eggs
- Consider Burlington location