PACIFICORP ENERGY
A MIDAMERICAN ENERGY HOLDINGS COMPANY

825 NE Multnomah, Suite 1500
Portland, Oregon 97232

4-15-09 Meeting Summary – *Approved 7-15-09*
RESOURCE COORDINATION COMMITTEE (RCC)
NORTH UMPQUA HYDROELECTRIC PROJECT- FERC #1927-008

RCC Members or Alternates Present
Ariel Hiller (BLM)
Ed Meyer (NMFS)
Dave Harris (ODFW)
Monte Garrett (PacifiCorp Energy)
Bill Gamble (USDA-FS)
Rob Burns (USFWS)
Jim Thrailkill (USFWS)

Also Present
Rich Grost (PacifiCorp Energy)
Beth Bendickson (PacifiCorp Energy)
Stan Vejtasa (Umpqua Valley Audubon Society)

Absent
Chris Stine (ODEQ) – Proxy to Dave Harris
Craig Kohanek (OWRD) – Proxy to Dave Harris
Pam Sichting (USDA-FS)

INTRODUCTIONS, AGENDA, OLD BUSINESS

Member Updates

PacifiCorp – Angie Peace is leaving and PacifiCorp will not back-fill her position; her duties will be accomplished with existing staff members. Mike Ichisaka and Steve Albertelli will be assuming much of this work.

With Tim Hemstreet transitioning out, we're hopeful for a new project manager to take over the Soda Springs fish passage project. The company is pursuing a strategy to appropriately manage this work.

BLM – Max Yager will be on detail, replacing Marci Todd for three or four months.

RCC Action: Review and approve 3/18/09 draft meeting summary. RCC will review newest version (e-mailed on 4/15/09); if Beth Bendickson does not hear otherwise, these notes will be considered approved by 4/24/09.

Public Information Opportunities – *none at this time.*

CURRENT PROJECT UPDATES

April 1 Site Meeting Review

This review of implementation projects was conducted for the purpose of facilitating the USDA-FS clearances and Notices to Proceed. This is the 3rd year this site meeting has been conducted; the consensus by the RCC was that this continues to be a useful annual process.

Fish Creek (Screens and Canal Shutoff & Drainage System)

The in-canal generators have been installed to provide adequate power for the radios. Monte Garrett is hopeful that at the end of 2009, the power issues will be behind us. Software upgrades for the radios are needed, which is expected to address interference with signals within the Fish Creek canyon. The radio manufacturer will make a site visit to help solve the problem. The Operations Manual will be available for review soon.

The hydraulic evaluation report is still in progress, and the biological evaluation is still planned for mid-May and mid-August with R2 Resources assisting. Rich Grost has received the Research Permit from ODFW to allow this study, which is planned for completion to FERC in November 2009.

Clearwater 2 Canal Shut-off & Drainage

PacifiCorp had an internal performance test on April 7. Overall, the facility operated very well and the company is pleased with the test. The headgate didn't close all the way so some small adjustments are being made. An RCC performance test viewing is scheduled for April 30.

RCC Action: **Approve another ramp rate modification identical to that approved for the 4/7/09 test (Attachment 1) to allow this second performance test. (Approved 4/15/09)**

Ariel Hiller asked that when RCC members reply to emailed requests for approval, to please respond to all RCC members when doing so.

Lemolo 2 Canal Shut-off & Drainage

This design is the same as the Clearwater 2 CSD, with five gates and a few more monitoring sites. The final design was approved at a meeting on March 11, 2009. DSL and ACoE permits have been received and the project is being reviewed for a USDA-FS Notice to Proceed. Gate 4 may cause a construction delay as it may be located on a cultural site. This has the potential to delay construction this year. An archaeologist needs to delineate the cultural site. Construction is scheduled to start on June 1.

The CSD is part of a large, expensive outage this year at Lemolo 2. PacifiCorp is trying to coordinate all projects: CSD, forebay dredging, and overhaul.

Lemolo 2 Forebay Dredging

PacifiCorp and the USDA-FS are collaborating to address ESA consultation and timber sale issues. Steve Albertelli has prepared a draft BA, and PacifiCorp and USDA-FS are consulting with USFWS. Presuming ESA Consultation and clearances for other resource issues, the schedule requires getting trees cut in mid-June. The forebay draining will commence on June 1, and dredging is scheduled to begin in late summer.

Stan Vejtasa inquired about the need for the timber sale, referring to similar concerns that Audubon expressed during the Lemolo 2 forebay timber sale. Monte noted that in the relicensing process, the FERC boundary was expanded to include this area for both actions. The least impact options were evaluated in the environmental analysis for the new license. For the Lemolo 2 dredging, a total of 15 acres was provided within the FERC boundary for dredge spoils. However, part of area is a small wetland, so the impact area was reduce to eight acres to protect both wetlands and cultural resources. Some agencies expressed some revegetation concerns.

A fish salvage is scheduled for 5/27 – 6/5 on the Lemolo 2 forebay (using the RCC electrofishing boat) and in Lemolo 2 canal and sag pipe. Rich invited participation from ODFW and other TWG folks to assist with forebay salvages. Rob Burns said BLM or USDA-FS may be able to provide some nets and equipment also.

RCC Action: **Approve use of electrofishing boat for Lemolo 2 forebay fish salvage, as well as assistance from ODFW EBA Technicians (from 19.2 LT/Predator Control fund). (Approved 4/15/09)**

Lemolo 2 Plant Overhaul

The footprint of the Lemolo 2 Reroute project is overlain by a large cultural site. The edge of this cultural site may include the powerhouse and will need a cultural clearance to proceed. The NTP for the crane pad has been received; clearance for other ground disturbance around powerhouse is pending. This overhaul work is scheduled to coincide with the June 1 outage.

Lemolo 1 Forebay

The NPDES permit, FERC approval, and the NTP are pending; project is scheduled to start June 1. The heli-pad will be relocated. Wetland construction is on the west side of the forebay, including 0.5 acre of created PEM and forested wetland. The Lemolo 1 outage will be about six weeks this fall to connect the existing canal to the new forebay. Generator upgrades will be done during that time as well.

Wildlife Crossings

The last of 39 crossings were due to be constructed in 2008. However, due to weather issues, completion of this work was delayed into 2009. Weekly Bros is out working now. Rob inquired about monitoring of wildlife crossings, which Monte described as being primarily by track counts as described in the Terrestrial Connectivity Plan.

Soda Springs Tailrace Barrier

Conversations are ongoing with PacifiCorp's consultant and RCC members Ed Meyer and Dave Harris about the efficacy of a potential test of prototype baffles at the tailrace barrier. Overall, bays on average can meet the velocity criteria, but within each bay we tend to see higher flows coming out at the downstream end. Currently we're attempting to design a cost-effective prototype baffle and test that could lead to baffle design and fabrication to better diffuse flow through the tailrace bays. The test would be best performed during sustained high flows (e.g. 1200-1600 cfs), typically occurring in May and June, but fall or winter high flow periods may also work.

Fish use of the area was raised and Rich indicated that there have been no indications of fish challenging the barrier or injuring themselves (concurred by ODFW), but that there is a substantial amount of gravel in front of the barrier that commonly hosts 10-20 redds during spawning periods for salon and steelhead. The gravel has also once infringed onto the footing and interfered with picket panel seating, so was removed manually by flow adjustments. Ed inquired about witness marks for picket seating and Rich replied that a pole marked to indicate flush seating on the footing is provided for operator use when pickets are moved for cleaning (typically 10-20 times per year).

Soda Springs Fish Passage

All permits are now modified to account for the final design. The minimum instream flow facility will be built in late summer /fall 2009, and the rest of the facility will be built in 2010-2012. Since last RCC meeting, the RCC approved a request (Attachment 2) allowing special flow management during construction to minimize attraction of fish into the bypass reach and construction area during 2010-2011 in-water construction seasons.

Stan inquired as to when the area will be closed to public use. Bill Gamble said that currently the road is open but the Boulder Creek trail is closed due to fire-related hazards. The road will likely be closed to public use during heavy construction periods such as late summer 2009, and most of 2010-2011.

Watson Ridge

The USDA-FS Decision Memorandum was signed and published in the Roseburg News Review on April 9. We're now in the 45-day appeal period. Barring any unforeseen circumstances, construction of this facility is scheduled to commence on June 1.

Slide Creek Diversion Dam – The Obermeyer weir which provides new minimum flow and ramping control is in service after several years of troubleshooting and modification.

TECHNICAL WORKING GROUP UPDATES

Wetland TWG

Wetlands

The wetlands are scheduled to be constructed this year with Lemolo 1 forebay beginning on June 1 and Ranawapiti later in the summer. Monte will check with WSP regarding specific design questions posed by Bill.

Aquatic Connectivity

We have conceptual designs and agree to go to procurement acknowledging that designs for construction may change after meeting with bidding contractors. Upon reconsideration, PacifiCorp thinks it may be wiser to get more detailed engineering on all 50 sites, obtain more site-specific construction plan and get a better idea of costs; rather than focus on completing 12 sites this year with insufficient information. Rob asked if it would mesh with the Settlement Agreement completion schedule. Monte responded that we were on an accelerated schedule to begin with. All aquatic sites will still be completed by 2017.

FHS (Fish Habitat Studies)

The TWG met last week. The main topic was the 19.2 annual report drafted by ODFW and currently under review by the TWG. The TWG hopes to provide a final report to the RCC in June.

The program of work for 2009 will include at least one night of predator sampling each month from July-October, but this work will not interfere with use of the electrofishing boat at Lemolo 2 forebay and Lemolo Reservoir.

Slide Creek Emergency Shutdown Evaluation

Since the last RCC meeting, the RCC has agreed via email (Attachment 3) that consultation on the SA 6.9 study is concluded and that impacts are minor such that no major modification of the Slide Creek powerhouse emergency spill system is warranted (e.g. no bypass valve is needed on the powerhouse). However, several opportunities to cost-effectively reduce the impacts of emergency ramping were identified and will be considered during design of the Slide Creek powerhouse tailrace barrier.

FPD (Fish Passage Design)

Slide Creek Tailrace Barrier Design – The current plan is to have a conceptual design by the end of the year, the final design completed in 2010, and construction in 2011.

Soda Springs Fish Passage Design – Since the last FPD TWG meeting, an agreement was made via email (Attachment 4) regarding final design of the fish return system and outfall being a pipe / concrete ogee configuration rather than the open flume / extended pipe options. Ed acknowledged that

this design was better for juvenile fish, but that the trade-off is the possible false attraction of adults, and the TWG should be prepared to consider this post-construction if it proves to be an issue.

Final designs were filed with FERC/DC on March 24. The TWG agreed while they were approved 100% designs, that it was a fluid document, in that final construction plans for FERC PRO could change. Montgomery Watson Harza will have final construction plans completed by June 8. They'll be sent out to FPD TWG for a 3-week review. The proposal and scope of work would be put together for procurement. It would give July and August for contractor proposal preparation. Bid evaluation process would take 30-45 days; and thus should be ready for contract award by November. It would be contracted as one construction project (ladder, screen, and spillway modification).

F&R (Flows & Ramping) – nothing new to report at this time.

CSD (Canal Shut off & Drainage) - *covered in Current Projects Updates above.*

Lemolo Reservoir

TWG meeting scheduled for April 16. There has been a fair amount of activity since the last meeting. The current reservoir level is 4,131. The 2008 monitoring report from MaxDepth Aquatics went out to the TWG yesterday. It concludes that while other factors such as weather and hydrology may contribute, the large biomass of tui chub appears to be the single largest factor causing the blue-green algae blooms.

Based on those findings, the TWG has several actions planned for 2009. The tui chub removal program has been stepped up with Scott Lamb doing the work using the $44k in Title II funding (out of $71k requested). The work will be under ODFW oversight and contracted via USFS and PUR. The TWG drafted a scope of work which they're hopeful that Scott will work under. The RCC electrofishing boat will also be used to help remove tui chub. The USDA-FS and PacifiCorp are putting together a monitoring program with MaxDepth similar to what was done in 2008 but to begin earlier (mid-May) and include more spatial sampling at different depths and different parts of the reservoir to get a better idea of how fish are impacting water quality.

Activities to increase predation on tui chub include: ODFW may plant Lemolo Reservoir with "Fishwich" rainbow trout thought to be more predacious than the normal type. Also, PacifiCorp plans to transport brown trout salvaged from Lemolo 2 canal and forebay to Lemolo Reservoir.

Finally, the TWG has proposed experimental water management operations for Lemolo Reservoir for 2009 to facilitate all these activities while maintaining reasonable access for boats and recreation. PacifiCorp is willing to operate this way if approved, and Scott Lamb has voiced support also. The proposal (Attachment 5) was emailed to the RCC April 3, 2009 for review, but no comments were received.

RCC Action: **Approve Proposal for Experimental Management of Lemolo Reservoir for 2009 that Rich e-mailed out 4/3/09. (Approved 4/15/09)**

Public Comments – Stan Vejtasa was pleased to hear about the SS Fish Passage project proceeding but urged PacifiCorp to secure a dedicated project manager ASAP to avoid delays and problems.

The next RCC Conference Call is scheduled for May 20, 10:00 AM.

Meeting adjourned.

4-15-09
RCC Meeting
Attachments

Bendickson, Beth

From: Grost, Richard
Sent: Monday, April 20, 2009 3:30 PM
To: Bendickson, Beth
Subject: FW: RCC Request: Ramping modification for Clearwater 2 CSD performance test 4/7/09

RCC notes attachment 1

From: Grost, Richard
Sent: Wednesday, April 08, 2009 12:00 PM
To: Grost, Richard; 'Ariel Hiller'; Bendickson, Beth; 'Chris Stine'; Craig Kohanek (ron.c.kohanek@wrd.state.or.us); Dave Harris; Ed.Meyer@noaa.gov; Garrett, Monte; 'Jim Thrailkill'; Pam Sichting; rob_burns@fws.gov
Cc: Barney, Rich; Croissant, Mark; Owre, Rod; Reynolds, Roger; craig_tuss@fws.gov; cstreet@fs.fed.us; dave.s.williams@wrd.state.or.us; Lightcap Scott (scott_lightcap@or.blm.gov); mejones@fs.fed.us; 'rich grost'; Stephanie.Burchfield@noaa.gov
Subject: RE: RCC Request: Ramping modification for Clearwater 2 CSD performance test 4/7/09

The preliminary test of the Clearwater 2 CSD system was successfully completed yesterday thanks to the allowance to modify ramp rates so that we could test during actual flow change conditions. The system performed well, with some minor opportunities for improvment noted and underway. The test caused two flow changes in the bypass reach, both kept within 108 cfs (total range 65 to 173 cfs) resulting in a total stage change of 0.67 ft, as recorded at the USGS gage. The peak flows were lower than typical winter freshets. Monitoring at the upstream and downstream ends of the bypass reach indicated a moderate increase in turbidity with the initial flow increase (as expected), but no sign of fish stranding or bedload movement.

If you would like to observe another similar live-action test of the CW2 CSD, please respond back and we will plan a date and seek another ramping modification to do so. Thanks,

Richard Grost
Aquatic Scientist
PacifiCorp, NUHP
541-498-2617

From: Grost, Richard
Sent: Wednesday, March 18, 2009 12:37 PM
To: Ariel Hiller; Bendickson, Beth; Chris Stine; Craig Kohanek (ron.c.kohanek@wrd.state.or.us); Dave Harris; Ed.Meyer@noaa.gov; Garrett, Monte; Jim Thrailkill; Pam Sichting; rob_burns@fws.gov
Cc: Barney, Rich; Croissant, Mark; Owre, Rod; Reynolds, Roger; craig_tuss@fws.gov; cstreet@fs.fed.us; dave.s.williams@wrd.state.or.us; Lightcap Scott (scott_lightcap@or.blm.gov); mejones@fs.fed.us; rich grost; Stephanie.Burchfield@noaa.gov
Subject: RCC Request: Ramping modification for Clearwater 2 CSD performance test 4/7/09

RCC -- Please provide a brief email indicating that you support temporary modification of normal flow ramping limits to allow this necessary test, described below.

On 4/7/09 we have planned a preliminary performance test of the Clearwater 2 Canal Shutoff and Drainage system. To replicate emergency conditions, the test will require rapid closure of the canal headgate which will in turn cause flows in the Clearwater No. 2 bypass reach portion of the Clearwater River to increase and decrease faster than normal ramping limits would allow. Depending on ambient flows at the time, stage change is expected to be about 1-2 ft (60 to about 250 cfs), with both changes occuring within one hour. To minimize the duration of impacts we will reduce flows back to pre-test levels immediately after each test gate closure.

This flow change is small compared to natural high flow events and is not expected to cause any bedload movement. Impacts to fish should be small at this time of year, but increased turbidity is expected. As with previous ramping modifications, we will monitor for visual indiciations of turbidity, bedload movement, and fish impacts during the test, cease the test if unexpected

negative impacts are identified, and report our findings immediately following the test. Note that preliminary testing will be followed with an opportunity for the consulting agencies to view CSD performance during a future test.

Thanks,

Richard Grost
Aquatic Scientist
PacifiCorp, NUHP
541-498-2617

Bendickson, Beth

From: Grost, Richard
Sent: Monday, April 20, 2009 3:31 PM
To: Bendickson, Beth
Subject: FW: RCC action: flow management for construction of Soda Springs fish passage

RCC notes attachement 2

From: Grost, Richard
Sent: Wednesday, April 08, 2009 3:04 PM
To: Grost, Richard; 'Ariel Hiller'; 'Pam Sichting'; 'Ed Meyer'; 'Dave Harris'; 'Craig Kohanek'; Garrett, Monte; 'Chris Stine'; 'jim_thrailkill@fws.gov'
Cc: 'cstreet@fs.fed.us'; 'Bill E Gamble'; 'mejones@fs.fed.us'; Bendickson, Beth; 'rob_burns@fws.gov'; Hemstreet, Tim
Subject: RE: RCC action: flow management for construction of Soda Springs fish passage

As of 4/7, all RCC members have responded with approval of the below proposal. We will proceed accordingly with design and planning for construction of the Soda Spring fish passage project. Thanks for the timely responses between normal RCC meetings to help us stay on schedule.

Richard Grost
Aquatic Scientist
PacifiCorp, NUHP
541-498-2617

From: Grost, Richard
Sent: Thursday, March 26, 2009 12:45 PM
To: Ariel Hiller; Pam Sichting; 'Ed Meyer'; 'Dave Harris'; 'Craig Kohanek'; Garrett, Monte; 'Chris Stine'; 'jim_thrailkill@fws.gov'
Cc: 'cstreet@fs.fed.us'; 'Bill E Gamble'; 'mejones@fs.fed.us'; Bendickson, Beth; 'rob_burns@fws.gov'; Hemstreet, Tim
Subject: RCC action: flow management for construction of Soda Springs fish passage

Hello RCC -- The Soda Springs fish passage project is proceeding rapidly and the details of flow management during construction have emerged as a subject for rapid RCC approval, so that we can commence contracting to build our temprorary instream flow system this year. Please review the below proposal, supported by ODFW and OWRD, and reply with your approval this week, or as soon as possible. If helpful, I can set up a special RCC conference call for discussion (if you propose a call, please indicate dates available). Thank you,

Rich Grost
Aquatic Scientist
PacifiCorp Energy
541-498-2617

Proposal for special flow management during in-water construction of Soda Spring fish passage project, May-November 2010 (and possibly May-November 2011 if necessary)

1) Modify minimum flow requirement to Soda Springs bypass reach from 275 to 100 cfs, and daily ramping limit to 0.2 ft/day (note: target flow would be set at about 125 cfs, with expected ramping about 0.1 ft/day).
Rationale:
a) reduce attraction flow to discourage adult salmonids from migrating into and holding in the bypass reach during construction;
b) increase stability of flow in the bypass and Wild and Scenic reaches (less turbulence and fluctuation than with higher flow, about 10 cfs vs. 30 cfs daily, as the reservoir fluctuates);
c) 100 cfs is sufficient flow to protect aquatic habitat and life within the bypass reach and spawning habitat; and
d) reduces the size of the temporary structure, riparian disturbance, and amount of demolition as the temporary structure is modified into the permanent fish bypass return system.

2) Pending further investigation and understanding with OWRD, then If and when necessary to dewater the work area and protect it from flooding during high flow events, allow flow through Soda Springs powerhouse to exceed the 1,600 cfs water right (the plant capacity is about 1,800 cfs).
Rationale:
a) the extra flow capacity helps protect the work area, equipment, people, and structure from potentially devastating inundation by flow spilling at the dam;
b) helps increase the number of days inwater work can safely occur;
c) provides the best control of flows into the Wild and Scenic Reach; and
d) would probably not increase generation but merely allows extra flow to pass through the turbine and/or bypass valve rather than spilling at the dam.

Bendickson, Beth

From: Grost, Richard
Sent: Monday, April 20, 2009 3:32 PM
To: Bendickson, Beth
Subject: FW: RCC request: SA 6.9 Slide Cr powerhouse emergency ramping conclusion

RCC notes attachement 3

From: Grost, Richard
Sent: Wednesday, April 08, 2009 2:58 PM
To: Grost, Richard; 'Ariel Hiller'; Bendickson, Beth; 'Chris Stine'; Craig Kohanek (ron.c.kohanek@wrd.state.or.us); Dave Harris; Ed.Meyer@noaa.gov; Garrett, Monte; 'Jim Thrailkill'; Pam Sichting; rob_burns@fws.gov
Cc: cstreet@fs.fed.us; Lightcap Scott (scott_lightcap@or.blm.gov); 'rich grost'; Samuel Moyers; Stephanie.Burchfield@noaa.gov
Subject: RE: RCC request: SA 6.9 Slide Cr powerhouse emergency ramping conclusion

As of yesterday 4/7/09, all RCC members have responded affirmatively to this request. Thank you for helping document the completion of our SA 6.9 study consultation, and the path forward for addressing the identified issues and opportunities.

Richard Grost
Aquatic Scientist
PacifiCorp, NUHP
541-498-2617

From: Grost, Richard
Sent: Wednesday, March 18, 2009 12:11 PM
To: Ariel Hiller; Bendickson, Beth; Chris Stine; Craig Kohanek (ron.c.kohanek@wrd.state.or.us); Dave Harris; Ed.Meyer@noaa.gov; Garrett, Monte; Jim Thrailkill; Pam Sichting; rob_burns@fws.gov
Cc: cstreet@fs.fed.us; Lightcap Scott (scott_lightcap@or.blm.gov); rich grost; Samuel Moyers; Stephanie.Burchfield@noaa.gov
Subject: RCC request: SA 6.9 Slide Cr powerhouse emergency ramping conclusion

RCC -- please review the email string below and, as described on today's RCC call, provide a brief email response indicating your concurrence that our consultation regarding the SA 6.9 study and report is complete, and that the identified issues and opportunities will be addressed within future consultations for the Slide Cr powerhouse tailrace barrier design. Thanks,

Richard Grost
Aquatic Scientist
PacifiCorp, NUHP
541-498-2617

Rich, the FS concurs with ODFW. Concurrence with PacifiCorp's conclusion and plans is further contingent on future involvement of the agency (per our phone conversation) in discussion/approval (when the time is ripe) of the flow release gate and gravel bar reshaping ideas that you indicated would be incorporated into the Slide Creek Tailrace Barrier project.

CRAIG STREET

Umpqua National Forest
Diamond Lake Ranger District
Phone (541) 498-2531
FAX (541) 498-2515
E-mail cstreet@fs.fed.us

From: Dave Harris [Dave.A.Harris@state.or.us]
Sent: Tuesday, March 03, 2009 12:36 PM
To: Grost, Richard; Pam Sichting; Craig W Street; Samuel Moyers; rob_burns@fws.gov; Edward Meyer ; Garrett, Monte; scott_lightcap@or.blm.gov; STINE Chris
Subject: RE: SA 6.9 Slide powerhouse emergency ramping conlcusion

Rich: ODFW concurs with the summary. ODFW also understands that any gravel bar re-shaping will be discussed in depth as part of the Slide Creek tailrace barrier design.

From: Grost, Richard [mailto:Richard.Grost@PacifiCorp.com]
Sent: Monday, March 02, 2009 5:18 PM
To: Pam Sichting; Craig W Street; HARRIS Dave A; Samuel Moyers; rob_burns@fws.gov; Edward Meyer ; Garrett, Monte; Lightcap Scott (scott_lightcap@or.blm.gov); STINE Chris
Subject: SA 6.9 Slide powerhouse emergency ramping conlcusion

TWG -- As PacifiCorp prepares our scope to initiate design consultations for the Slide Creek Powerhouse tailrace barrier, we want to be sure that the findings from the SA 6.9 Slide Creek Powerhouse emergency ramping study are adequately reflected and addressed. As you recall, a detailed study was done in summer 2006 by Hardin Davis, Inc., concluding that impacts from the existing emergency ramping system are minimal due to the rarity and short duration of emergency shutdowns, presence of very little stranding habitat in affected reaches, and rapid clearing and dissipation of related turbidity pulses. It was also recognized that the only area where fish stranding was observed was likely to be drastically modified during construction of the Slide Creek powerhouse tailrace barrier project. The report was discussed at the FHS TWG meeting 2/1/07 (excerpt below), and during a site visit with Ed Meyer 4/18/07. (Then we all got busy with electrofishing boats, Soda tailrace barrier construction, Lemolo Reservoir, and other pressing projects -- and forgot to conclude this one in writing.) Discussions in 2007 concluded that the addition of a bypass valve or similar emergency release system was not warranted, but that opportunities to reduce stranding should be considered as part of the Slide Creek powerhouse tailrace barreir project. Consequently, PacifiCorp plans to scope the Slide Creek powerhouse tailrace project to include re-shaping of the existing gravel stranding habitat to preclude stranding, and also consider the feasibility of adding an emergency flow release gate in the canal forebay to reduce lag time of flow changes during emergency trips.

Please confirm that this summary accurately captures our SA 6.9 consultation so that we can present this to the RCC to officially conclude said consultation, and also solidify our scope for the new tailrace barrier project. Thanks,

Rich Grost
Aquatic Scientist
PacifiCorp Energy

From 2/1/07 FHS TWG meeting notes:

7) 6.9 Evaluation of Emergency Bypass Ramping at Slide PH
a) The December 2006 Hardin-Davis report of the 6.9 study was reviewed.
b) Emergency shutdowns during the rearing period are rare. The study concluded that very little potential stranding habitat exists, and shutdowns are unlikely to strand more than a few fish. Stranding was observed in only one area, which has several mitigating circumstances associated with it.
c) The potential for stranding will be even less after 2012 when minimum flows in the Slide bypass reach are increased.
d) Concerns related to the amount of turbidity produced when a spill occurs to downstream fish and aquatic insects were discussed.
e) The TWG will complete review and present the report and recommendations to the RCC by June.

Bendickson, Beth

From: Grost, Richard
Sent: Monday, April 20, 2009 3:34 PM
To: Bendickson, Beth
Subject: FW: Soda Springs Fish Passage Project return-outfall design preferences
Attachments: Soda Springs Fish Passage Project Return-Outfall Final Design Details.doc

RCC notes attachment 4 (email below + attached file)

From: Grost, Richard
Sent: Thursday, March 26, 2009 3:47 PM
To: 'Dave Harris'; 'rob_burns@fws.gov'; 'John Johnson (John_Johnson@fws.gov)'; 'Ed Meyer'; Pam Sichting; 'cstreet@fs.fed.us'; Garrett, Monte; Hemstreet, Tim; Jeff Dose
Subject: Soda Springs Fish Passage Project return-outfall design preferences

FPD TWG -- the attached memo summarizes the analysis of the options raised at our 3-11-09 TWG meetig regarding Soda Springs fish return system flume and outfall configurations, and also the temporary instream flow release system that will soon go out to bid for construction this summer. Please review it and respond ASAP that you concur with our resulting preferences and rationale (or send your questions if you are not sure). If helpful, I can arrange a conference call to discuss (propose dates if you want one). Please note this is a seperate document and review from the "water management during construction" request sent earlier today to the RCC. Thanks,

Rich Grost
Aquatic Scientist
PacifiCorp Energy
541-498-2617

Soda Springs Fish Passage Project
Fish Return System and Temporary Instream Flow Design Details
March 26, 2009

To address questions raised at the March 11, 2009 Fish Passage Design TWG meeting, PacifiCorp and MWH further analyzed options for re-configuring the fish return system and the temporary instream flow structure. PacifiCorp seeks FPD TWG agreement on the resulting design preferences described below.

1. Fish Return System

1.1 Evaluation Building to Outfall:

The design presented during the March 11, 2009 consisted of a flume from the evaluation facility to the outfall structure. The flume was designed with an adverse slope to create a hydraulic jump and reduce the velocity in the flume to from approximately 17 feet per second (fps) to 7 fps. MWH and PacifiCorp now believe that the best design option is to eliminate the flume and replace it with a constant slope open channel pipe from the Evaluation Facility to the Outfall. This eliminates the hydraulic jump and slow-velocity "pool" in the flume and increases the velocity in the pipe (about 18 fps) and at the outfall. Related benefits and potential disadvantages include:

Benefits:

- Eliminates the potential for upstream migrant adults to swim up the fish return system and be delayed in migration (especially during moderate to high flows when the outfall is almost fully submerged) since the velocity in the pipe is too fast.
- Eliminates the potential for adults that have passed through the fish screen to hold in the return system and prey on downstream migrating juveniles.
- Eliminates the potential for gravel or debris accumulation (which could increase outages of the fish return system) since there is no longer a slow velocity reach.

Potential disadvantages of the pipe bypass options are as follows (PacifiCorp and MWH consider these acceptable trade-offs for the benefits above):

- Superelevation in the pipe bend immediately upstream of the outfall may create a seiche downstream to the outfall.
- The hydraulic jump at the ogee-type outfall would be stronger and occur further out in the river than it would otherwise with the in-flume hydraulic jump (as shown in the March 11, 2009 drawings).
- The flow velocity entering the river at the outfall will likely be above 25 fps but near or below 30 fps.

1.2 Outfall Preference:

At the close of the March 11, 2009 FPD TWG meeting, there was discussion about whether the ogee-type outfall was preferable to a pipe outfall. PacifiCorp and MWH prefer the ogee-type outfall to a pipe outfall for the following reasons:

- The ogee-type outfall dissipates energy better than a pipe outfall and keeps the return flow and fish nearer the bank.
- Release of fish at the margin of the river through the ogee-type structure allows juveniles to take shelter away from the main channel where adult predators would have an advantage.
- Adults are more likely to jump at the plunge-pipe outfall and experience delay as compared to the ogee-type outfall.
- If problems with the ogee-type outfall are encountered, it is far easier to retrofit from the ogee to a plunge-pipe outfall than vice versa.
- A plunge-pipe could significantly alter river hydraulics in the thalweg where most adults will be passing upstream (plunging flow introduced perpendicular to river flow), possibly causing delay in upstream migration for all fish. The effect of the plunging flow would carry across the full width and depth of the channel whereas the ogee-type outfall would keep the hydraulic disturbance near the surface.
- To adhere to entrance velocity criteria, a plunge-pipe outfall would have to extend out over deep water and be exposed to high flows and debris, resulting in a greater risk and frequency of damage as compared to the ogee-type outfall.

2. Temporary Instream Flow Release System

The temporary instream flow system design has progressed with a goal of keeping this temporary structure sized to serve as the foundation for the long-term ogee-type outfall while still providing relatively normal flow to the bypass reach during fish passage construction (approximately May through October during 2010 and possibly 2011). To meet the fish passage construction schedule, it is essential that this system be constructed during the 2009 in-water work period to ensure that dewatering of the tailwater pool can begin immediately when the 2010 in-water work period begins. The system is currently being designed for an average flow capacity of about 125 cfs with manual flow control, to satisfy the flow and ramping specifications in the construction flow management proposal currently in RCC review (minimum flow 100 cfs, typical daily ramping <0.2 ft).

Bendickson, Beth

RCC notes attachment 5

From: Grost, Richard
Sent: Friday, April 03, 2009 11:21 AM
To: 'Pam Sichting'; 'Craig Kohanek'; 'Chris Stine'; 'Dave Harris'; 'Ed Meyer'; Garrett, Monte; Ariel Hiller; 'Jim_Thrailkill@fws.gov'
Cc: Grost, Richard; Le, Tim; 'Dave Harris'; Garrett, Monte; 'Samuel Moyers'; 'Laura Jackson'; 'BOSWELL Laura E'; 'Mikeal E Jones'; 'Al Johnson'; 'rtwestfa@co.douglas.or.us'; 'Craig Kohanek'; 'Craig W Street'; 'Bill E Gamble'; Donnell, Joe; 'HEBERLING Paul'; 'Chris Stine'; 'CUDE Curtis G'
Subject: Experimental WSE management of Lemolo Reservoir for 2009

RCC -- after much deliberation, the Lemolo Reservoir TWG recommends modifying the water level restrictions for Lemolo Reservoir during 2009. Please review the below proposal and be prepared to support it either by email before, or at the April 15 RCC meeting. Thanks,

Rich Grost
Aquatic Scientist
PacifiCorp Energy

TWG Proposal: Experimental WSE Management of Lemolo Reservoir for 2009

The goal of deviating from normal water surface elevation (WSE, in feet above mean sea level) targets is to maximize the efficiency of trapnetting adult, spawning tui chub, while otherwise minimizing the amount of additional shallow spawning habitat available to tui chub and slowing the development of spring algae blooms, while retaining some flexibility for seasonal storage and power generation. The proposal is to manage for the following WSE targets:

1) April 24-26: 4138+ (opening weekend, fish planting, resort boat ramp fully usable and Poole Cr ramp partially usable)
2) April 27-May 17: no constraints except 0.5 ft/day drawdown limit (as normal)
3) May 18-June 26: 4142 +/- 2 ft (trapnetting begins May 18)
4) June 27-Labor Day: 4143 +/-2 ft (same target and range as in 2008, trapnetting concludes in August)
5) Labor Day through March 2010: 4114 ft min pool (drawdown period, lower limit to compensate for lower summer pool)

Note that part 1 and 2 are similar to what is currently allowed, but the intent is to minimize the WSE while allowing reasonable boat access. Part 3 and 4 are deviations from the normal summer pool limits of 4145-4148.5 ft to achieve the goals during trapnetting. Part 5 is a deviation from the normal minimum pool of 4123.5 ft to compensate for the volume of water (generating capacity) sacrificed by not filling the reservoir during spring snowmelt.