Lewis River Hydroelectric Projects Settlement Agreement
Aquatic Coordination Committee (ACC)
Meeting Agenda

Date & Time: **Thursday, December 12, 2013**
9:00 a.m. – 12:00 p.m.

Place: **Merwin Hydro Control Center**
105 Merwin Village Court
Ariel, WA 98603

Contacts: **Frank Shrier: (503) 320-7423**
Lore Boles (Merwin Desk): (360) 225-4412

Time	Discussion Item
9:00 a.m.	Welcome ➢ Review Agenda & 11/14/13 Meeting Notes ➢ Comment & accept Agenda & 11/14/13 Meeting Notes
9:15 a.m.	➢ 2013/2014 Aquatic Fund Pre-Proposal Selection (DECISION MAKING MEETING)
10:30 a.m.	**Break**
10:45 a.m.	2013/2014 Aquatic Fund Pre-Proposal Selection - (cont'd)
11:15 a.m.	Eulachon Consultation Status
11:30 a.m.	Study/Work Product Updates o Woodland Release Ponds - Status o Hatchery Upgrades - Status o Hatchery and Supplementation Plan – Status o Crab Creek Acclimation Pond Screen - Status o Clear Cr. and Muddy R. Acclimation Pond Construction – Status o Merwin Upstream Construction - Status o Swift Downstream Collector - Status o Future Fish Passage Facilities New Information – Status
11:45 a.m.	➢ Next Meeting's Agenda ➢ Public Comment Opportunity Note: all meeting notes and the meeting schedule can be located at: http://www.pacificorp.com/es/hydro.html
12:00 p.m.	***Adjourn***

Join by Phone
+1 (503) 813-5252 [Portland, Ore.]
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Conference ID: 1814916

FINAL Meeting Notes
Lewis River License Implementation
Aquatic Coordination Committee (ACC) Meeting
December 12, 2013
Ariel, WA

ACC Participants Present (12)

Kimberly McCune, PacifiCorp Energy (via conference)
Frank Shrier, PacifiCorp Energy
Erik Lesko, PacifiCorp Energy
Chris Karchesky, PacifiCorp Energy
Mark Ferraiolo, PacifiCorp Energy
Peggy Miller, WDFW (via conference)
Aaron Roberts, WDFW
Eric Kinne, WDFW
Pat Frazier, LCFRB
Shannon Wills, Cowlitz Indian Tribe (via conference)
Adam Haspiel, USDA Forest Service (via conference)
Diana Gritten-MacDonald, Cowlitz PUD

Calendar:

January 9, 2014	ACC Meeting	Merwin Hydro
February 13, 2014	ACC Meeting	Merwin Hydro

Assignments from December 12, 2013 meeting	
McCune: Email pictures of Muddy River tributary near Hoo Hoo bridge project to the ACC.	**Complete – 12/12/13**
McCune: Review full proposals and any close-out reports completed for monitoring efforts and advise the ACC. • 2010 - Eagle Island Habitat Enhancement (Site A) – Cowlitz Indian Tribe • 2009 - North Fork Lewis River RM 13.5 Habitat Enhancement - LCFEG	**Complete – 1/6/13**

Assignments from November 14, 2013 meeting	
Shrier: Send Crab Creek design drawings to the USFS.	**Complete 12/13/13**
Shrier: Discuss with ACC putting the adult trap efficiency test evaluation off until March 2015 (late winter steelhead) to allow for the trap to be in its best operating condition (all tweaks and adjustments complete).	**Complete – 1/9/14**

Opening, Review of Agenda and Meeting Notes
Frank Shrier (PacifiCorp) called the meeting to order at 9:05 a.m. All attendees identified themselves for the benefit of those on the conference call. The ACC reviewed the agenda and no additional topics were added.

The November 14, 2013 meeting notes were reviewed and approved without change at 9:15 a.m. Kimberly McCune (PacifiCorp) will finalize the November 14, 2013 meeting notes for posting to the Lewis River website.

2013/2014 Aquatic Fund Pre-Proposal Selection
McCune provided a copy of the Lewis River Aquatic Fund – ACC and Utilities Evaluation Matrix, dated December 9, 2013 (**Attachment A**) for ACC review and discussion. The attached Evaluation includes certain comments received via email and comments/decisions provided during this meeting.

In response to ACC evaluation discussion and the fund objectives/priorities McCune read the following from the *Lewis River Aquatics Fund – Individual Project Evaluation Sheet*:

Consistency with Fund Objectives and Priorities (Meets or Does not meet):
1. Benefit fish recovery throughout the North Fork Lewis River, priority to federal ESA-listed species (Bull Trout, Chinook, Steelhead, and Chum)

2. Support the re-introduction of anadromous fish throughout the Basin (Spring Chinook, Winter Steelhead, Coho, and Sea-run Cutthroat)

3. Enhance fish habitat in the Lewis River Basin, with priority given to the North Fork Lewis River.

The following list represents the ACC decision for each project:

1. *Cowlitz Tribe – Eagle Island 2014 Knotweed Expedition*

Not selected for further consideration.

2. *USDA Forest Service – Muddy River Tributary near Hoo Hoo Bridge*

Yes, proceed to full proposal.

3. *USDA Forest Service – Lewis River Alcove near 90480 Road*

Yes, proceed to full proposal.

4. *Lower Columbia Fish Enhancement Group – Eagle Island North Channel Restoration*

Yes, proceed to full proposal.

5. *Lower Columbia Fish Enhancement Group – Haapa Habitat Enhancement*

Yes, proceed to full proposal.

Several ACC representatives were not present today so McCune will provide an additional 7-day comment period with comments/decisions expected no later than close of business, December 19, 2013. If no objections, each project applicant will be notified of the above ACC final decisions.

The ACC would also like each project applicant to acknowledge or provide written affirmation in its full proposal that they have contacted landowner(s) associated with project access and the landowner(s) are aware of required access agreements/approvals.

Additional discussion took place regarding monitoring efforts (if any) for the following projects:

2010 - Eagle Island Habitat Enhancement (Site A) – Cowlitz Indian Tribe

2009 - North Fork Lewis River RM 13.5 Habitat Enhancement – LCFEG

McCune will review the full proposals and any close out reports completed and advise the ACC.

<Break 10:10am>
<Reconvene 10:20am>

Eulachon Consultation Status
Shrier informed the ACC that the Eulachon consultation matter affects the construction schedules for the Lower Lewis River Intake and Woodland Release Pond projects. PacifiCorp met with Michelle Day and Bryan Nordlund (NMFS) twice and spoke with Shannon Wills , Nathan Reynolds, and Taylor Aalvik (Cowlitz Indian Tribe) to help NMFS get the Biological Opinion (BiOp) done by year end. NMFS informed PacifiCorp that a draft was to be completed two weeks ago but PacifiCorp has not seen the draft as of today's date. Cowlitz Tribe expressed that they are hopeful (with their assistance) that NMFS will get the BiOp done by the end of 2013.

Both the Lower Lewis River Intake and Woodland Release Pond projects will be delayed until 2015 if the BiOp is not complete by 12/31/13.

Study/Project Updates

Hatchery and Supplementation (H&S) Program
Comments have been received on the draft 2014 Annual Operating Plan. Due to the number of questions and feedback received, PacifiCorp will schedule another meeting after an updated version is distributed reflecting comments received. This meeting will be scheduled for early January 2014 and will involve going through the draft plan and resolving outstanding issues.

PacifiCorp is working on data analysis for the 2013 H&S report. These data include projects such as the wild winter steelhead program, screw trap operations and coho monitoring activities.

Hatchery Upgrades
Three projects remain as part of Schedule 8.7 of the Settlement Agreement.
Lewis River Hatchery Downstream intake repair: This project is scheduled for completion in 2014 pending completion of the NMFS BiOP for Eulachon by December 31, 2013. If not received by this date, the project will be delayed until 2015.

Speelyai Hatchery Intake Modifications: This project is scheduled for completion in 2014.

Merwin Hatchery Ozone Upgrades: This project started in the summer of 2013. The ozone destruct unit has been replaced and upgrades to the residual monitors will be completed this year. Replacement of the PLC will be completed by November 30, 2014.

Acclimation Pond/Crab Creek Screen
Drawings are ready to be sent in draft form to USFS for the NEPA process; working on all requirements for the Forest Service special use permit. Working toward getting the Crab Creek pond built in Summer 2014; instream bottom screen was adopted as the best approach to maintain flow and still allow fish passage.

Acclimation Pond/Muddy River and Clear Creek Update
Construction is complete; projects buttoned up for the winter; waiting on Final Operating Plan from PacifiCorp's consultant (McMillen). PacifiCorp is reviewing how best to feed the fish; for the first year likely the pond sites will be visited every day to address feeding, cleaning screens, vandalism, etc. PacifiCorp fishery staff will address the monitoring and maintenance.

Merwin Upstream Construction Status
Working diligently to begin operation by end of December 2013; project is on schedule.

Swift Downstream Collector Status
The floating surface collector (FSC) is back up and operational; cold weather presented some issues but nothing major; majority of fish are Chinook (see **Attachment B**, Fish Facility Report – November 2013).

Swift Downstream Collector – Exclusion Net Repair Plan
Shrier provided an email to the ACC on November 27, 2013 and December 4, 2013 titled, Swift FSC Net Repair Work Plan & Conference Call, which outlined a work plan for the float sleeves, air hoses, north and south side nets, main net top and end treatment, snag prevention measures and protection of the main net sections; see **Attachment C** for further detail.

Underwater divers are currently on-site to inspect the net, review how much of the north & south side nets are still intact and address failures discovered along the main net floats. PacifiCorp reviewed illustrations (**Attachment D**) of both the North Net Turning Point Plan and the South Net Turning Point that illustrates detail of woody debris and rip-rap locations, proposed bottom matting placement and panel sizes.

Shrier informed the ACC attendees that the bottom matting is intended to buffer the exclusion net from snagging on the bottom with an approximate install date of January 2014. The old side net material will be removed and replaced with a new nylon net material (20' x 40' panels woven together). Installation of new side nets is scheduled to be completed in March 2014.

Repairing the main net float line includes dragging 100' at a time onto a barge to repair. There will be periods of time when there is a gap at the bottom of the net; repair is planned for July & August 2014.

Per the previous discussion and meetings with NMFS and USFWS, PacifiCorp plans to lower the main net on December 20, 2013 to protect it from further damage due harsh winter weather and wave action until it is repaired. The main net will be raised back into position when the new side panels are install in March 2014.

WDFW is in agreement with PacifiCorp's proposed plan. NMFS and USFWS are also in agreement but PacifiCorp wants formal concurrence from both Services. The proposed matting is on critical habitat so PacifiCorp requested informal consultation with the USFWS in a December 11, 2013 letter.

Development of New Information to Inform Fish Passage
Data collection for 2013 is complete.

Other Topics
Water Quality Management Plan – temperature and dissolved oxygen (DO) modeling is underway to model project effects. In addition, a study in Yale tailrace and Merwin Canyon will be conducted to determine temperature fluctuations on species that reside there; beginning February 2014.

<11:15 a.m. meeting adjourned >

Agenda items for January 9, 2014

- Review December 12, 2013 Meeting Notes
- 2013 Year-end Financial Reporting
- Study/Work Product Updates

Public Comment
None

Next Scheduled Meetings

January 9, 2014	February 13, 2014
Merwin Hydro Control Center	Merwin Hydro Control Center
Ariel, WA	Ariel, WA
9:00 a.m. –11:00am	9:00 a.m. – 3:00pm

Meeting Handouts & Attachments

- Notes from 11/14/13
- Agenda from 12/12/13
- **Attachment A** – the Lewis River Aquatic Fund – ACC and Utilities Evaluation Matrix, dated December 9, 2013
- **Attachment B** - Fish Facility Report – November 2013
- **Attachment C** - FSC Net Repair Work Plan & Conference Call email, dated November 27, 2013 and December 4, 2013
- **Attachment D** - North Net Turning Point Plan and the South Buoy Turning Point illustrations

2013/2014 LR Aquatics Fund Evaluation Matrix

ACC Decision for full proposal		Applicant	Project Title	WDFW	Fish First	LCFRB	Yakama Nation	USFS	Cowlitz Indian Tribe	USFWS	Utilities	NMFS	Next Step
	1	Cowlitz Indian Tribe	Eagle Island 2014 Knotweed Expedition	Further discussion needs to occur within ACC regarding using Aquatics funds for weed control. Important effort but not seeing where it meets ACC priorities. WDFW is in favor of removing invasive plants from Eagle Island. Concerned about it only be a one year project and the long term benifit.		Project occurs in a Tier 1 reach, which indicates a very high priority reach for habitat improvement. Project provides short term benefit; however, long term benefit is questionable. Proposal needs to include annual maintenance program with continued treatments to ensure infestation does not return, inluding entity that will fund and conduct annual maintanence. We are concerned that this project is starting in the wrong location in the basin. Knotweed distributes downstream so eradication efforts should start at the top of the basin and work downstream. Also have concerns that this is not a comprehensive systematic approach to address larger problem for the basin. Knotweed is prevelant in the Lewis River Basin so this would be a better project if it was part of a larger program to address Knotweed investation throughout the basin, which are the kinds of projects that have been funded by SFRB in recent years (e.g. Skamokawa Basin).		The Gifford Pinchot National Forest has reviewed the five Aquatic Fund Pre-proposals and at this time we concur with the Utilities' comments.					
	2	USDA Forest Service	Muddy River Tributary near Hoo Hoo Bridge	Further discussion needs to occur on the benefits of this project. WDFW is in favor of this project going to full proposal.		Project occurs in an unrated reach, which indicates a low priority for habitat improvement. Biggest question for this proposal: is it benefiting habiatat that is limiting production? Proposal says it will improve rearing habitat but should be expanded to demonstrate how much rearing habitat will be provided as a result of this project. Also need to document that rearing habitat is a limiting factor. Propoosal would benefit from providing additional useage data, especially since this is and unrated tier that currently has a low restoration value. Current useage data is annecdotal in nature and a more systematic survey that would document both adult and juvenile usage would provide data to better assess value of this project. It appears that a similar project was recently completed downstream in the same location. Is there any data regarding useage or habitat benefits observed from that project. If this project is building on previous projects funded by the Aquatic Fund this proposal should include that information, especially any useage data collected since that project was completed. Also, should identify that habitat being improved is upstream of a location where a passage barrier was recently addressed (Culvert Replacement). Project as described is a good project at a very good cost, but is it in the best location? This may be a timing issue where some useage data is collected and provided to support this project next year.		The Gifford Pinchot National Forest has reviewed the five Aquatic Fund Pre-proposals and at this time we concur with the Utilities' comments.					
	3	USDA Forest Service	Lewis River Alcove near 90480 Road	WDFW is in favor of this project going to full proposal.		Project occurs in Tier 2 reach, which indicates a high priority for habitat improvement. The proposal says it will address two life stages: overwintering and rearing. For overwintering: will alcove be protected from high flows? For rearing: are there any temperature or low flow issues that need to be addressed? Are overwintering and rearing life stages limiting production at this time? Will juveniles have access in and out of alcove at all river flow conditions? The proposal should provide information regarding the current habitat status and how much will the habitat in this location be improved as a result of this project. A similar question from the previous project applies here in terms of is this the best place to invest Aquatic Fund dollars. This project appears to be situated in a location where other work is already occuring so it appears that the project is well located, but proposal should justify why a project should be implemented at this location. Additionally, we suggest that the proposal would benefit from incorporating the side channel also. This appears to be a good project very good price, but is this the best location?		The Gifford Pinchot National Forest has reviewed the five Aquatic Fund Pre-proposals and at this time we concur with the Utilities' comments.					
	4	Lower Columbia Fish Enhancement Group	Eagle Island - North Channel Restoration	WDFW is in favor of this project and requests that collaboration continue through development of the design. • • Where are the disposal sites on Eagle Island? What are the proposals to mitigate for the impacts of moving 10,000 yards of material onto Eagle Island out of the floodplain? This material would more than likely become colonized rather quickly by scotch broom. What weed control measures would be in place to lessen the likelihood of this happening?		Project occurs in a Tier 1 reach, which indicates very high priority for habitat improvement. Proposal should include total cost of project. It was good of the sponsor to attach the report, but key portions of that report should be included in the proposal. For instance the proposal should make clear what habitat is being protected by this action and why this is the best action to protect that habitat. Additionally, the proposal should clearly state what habitat improvements will result from this action: 1) is the increase in habiat biologically meaningful? 2 Will this benefit enough habitat to make a difference? 3) does it address key limiting factor(s)? The proposal should clearly describe what negetive habitat inpact is being prevented by this action and what positive habitat benefit is being provided by this action. The proposal should show why this is the best solution to address this problem and how this solution is consistent with the SRFB priority of restoring natural processes. The project to develop a design has been vetted through the the LCFRB review process, but the resulting design included in the attached report has not. It needs to be noted that this same work is being considered favorably through a General Investigation for Ecosystem Restoratation being conducted the wth USACE. This General Investigation would also fund design and build activities for the entire Eagle Island complex.		The Gifford Pinchot National Forest has reviewed the five Aquatic Fund Pre-proposals and at this time we concur with the Utilities' comments.					
	5	Lower Columbia Fish Enhancement Group	Haapa Habitat Enhancement	Would this project address any invasive weed issues that may be on site? Are landowner agreements in place? WDFW is in favor of this project going to full proposal.		Project occurs in a Tier 1 reach, which indicates very high priority for habiat improvement. Project should include total cost. Difficult to evaluate this project due to lack of true project designs. Information included in proposal are conceptual drawnings rather than engineering designs. Inclusion of professional grade designs would assist in understanding of this project and potentially support for funding request. Project design has not been vetted through LCFRB review process. Overall project shows good potential, but it is difficult to fully evaluate with only conceptual designs available.		The Gifford Pinchot National Forest has reviewed the five Aquatic Fund Pre-proposals and at this time we concur with the Utilities' comments.					

Fish Facility Report

Swift Floating Surface Collector

November 2013

	Coho		Chinook		Steelhead			Cutthroat			Bull Trout			Planted
Day	fry	smolt	fry	smolt	fry	smolt	kelt	fry	< 13 in	> 13 in	fry	< 13 in	> 13 in	Rainbow
01	0	5	0	4	0	0	0	0	0	0	0	0	0	0
02	0	1	0	0	0	0	0	0	1	0	0	0	0	0
03	0	5	0	5	0	0	0	0	1	0	0	0	0	0
04	0	2	0	7	0	0	0	0	0	0	0	0	0	0
05	0	4	0	1	0	1	0	0	0	0	0	0	0	0
06	0	3	0	11	0	0	0	0	0	0	0	0	0	0
07	0	1	0	4	0	0	0	0	0	0	0	0	0	0
08	0	3	0	10	0	0	0	0	0	0	0	0	0	0
09	0	1	0	12	0	0	0	0	1	0	0	0	0	0
10	0	4	0	7	0	0	0	0	0	0	0	0	0	0
11	0	2	0	7	0	0	0	0	0	0	0	0	0	0
12	0	1	0	2	0	0	0	0	0	0	0	0	0	1
13	0	2	0	5	0	0	0	0	1	0	0	0	0	0
14	0	2	0	5	0	0	0	0	0	0	0	0	0	1
15	0	2	0	2	0	0	0	0	0	0	0	0	0	0
16	0	0	0	8	0	0	0	0	0	0	0	0	0	0
17	0	1	0	2	0	0	0	0	0	0	0	0	0	0
18	0	0	0	2	0	0	0	0	0	0	0	0	0	0
19	0	0	0	5	0	0	0	0	0	0	0	0	0	0
20	0	0	0	12	0	0	0	0	0	0	0	0	0	0
21	0	2	0	24	0	0	0	0	0	0	0	0	0	0
22	0	0	0	12	0	0	0	0	1	0	0	0	0	1
23	0	3	0	7	0	0	0	0	0	0	0	0	0	0
24	0	0	0	8	0	0	0	0	0	0	0	0	0	1
25	0	1	0	10	0	0	0	0	1	0	0	0	0	0
26	0	4	0	10	0	0	0	0	1	0	0	0	0	0
27	0	18	0	6	0	0	0	0	0	0	0	0	0	0
28	0	3	0	16	0	0	0	0	0	0	0	0	0	0
29	0	5	0	19	0	0	0	0	0	0	0	0	0	0
30	0	0	0	16	0	0	0	0	0	0	0	0	0	0
Monthly	0	75	0	239	0	1	0	0	7	0	0	0	0	4
Annual	0	15063	0	1266	0	165	9	48	543	6	0	8	2	819

Deballasting concluded on 10/7 and normal FSC operations resumed thereafter.

No adult steelhead (kelts) were collected.

All coho, Chinook and steelhead smolts and cutthroat were transported downstream.

All fry, bull trout, and planted rainbow were returned to Swift Reservior.

PACIFICORP ENERGY

Monday, December 2nd, 2013

McCune, Kimberly

From: Shrier, Frank
Sent: Wednesday, December 04, 2013 11:06 AM
To: McCune, Kimberly; HML LRN (Roberts, Aaron); (michael_hudson@fws.gov); (Timothy_Whitesel@fws.gov); Adam Haspiel (ahaspiel@fs.fed.us); HML LRN (Stepp, Bart); Bob Rose (rosb@yakamafish-nsn.gov); Bryan Nordlund; Diana MacDonald; Doyle, Jeremiah; Eli Asher (easher@cowlitz.org); HML LRN (Kinne, Eric); Ferraiolo, Mark; Fish First (j.malinowski@ieee.org); gghalseth@gmail.com; James H Malinowski (jim.malinowski@icloud.com); 'Jeff Breckel'; Karchesky, Chris; Karen Adams; Kathryn Miller (kmiller@tu.org); Lesko, Erik; LouEllyn Jones; Mariah Stoll-Smith Reese (M.Reese@tds.net); Maynard, Chris (ECY); Melody Tereski; Michelle Day; Olson, Todd; Pam Johnson (johnson@co.skamania.wa.us); Patrick Frazier (pfrazier@lcfrb.gen.wa.us); Patrick Lee; Peggy Miller; HML LRN (Morgan, Rhidian); Ruth Tracy; Samagaio, James; Shannon Wills; Taylor Aalvik (taalvik@cowlitz.org)
Cc: Weatherly, Briana
Subject: Swift FSC Net Repair Work Plan & Conference Call

Hello Everyone:
This email serves as a follow-up to the conference call today regarding the Swift FSC Net repair (see below for detailed repair plan).
The discussion began at 10:05 am. Those in attendance included, myself, Briana Weatherly, Chris Karchesky and Todd Olson from PacifiCorp, Diana MacDonald from Cowlitz PUD, LouEllyn Jones-USFWS, Michelle Day and Bryan Nordlund-NOAA Fisheries, and Adam Haspiel- USFS.
I opened with a brief iteration of the detailed work plan below and opened up discussion from the group. There were a few questions of clarification from Bryan, and Diana. Chris and I addressed detailed questions from Bryan although Chris needs to provide some follow-up information on the air hose component. All-in-all the group agreed with the approach. PacifiCorp will follow up with letters to the Services seeking their written concurrence with the repair plan. PacifiCorp will still need to consult on bull trout critical habitat with the USFWS. I noted that WDFW and LCFRB were not present and that I would try to contact them for input on the subject. I also plan on raising the subject repair again during the next ACC meeting on Dec. 12th.

From: McCune, Kimberly
Sent: Wednesday, November 27, 2013 8:37 AM
To: HML LRN (Roberts, Aaron); (michael_hudson@fws.gov); (Timothy_Whitesel@fws.gov); Adam Haspiel (ahaspiel@fs.fed.us); HML LRN (Stepp, Bart); Bob Rose (rosb@yakamafish-nsn.gov); Bryan Nordlund; Diana MacDonald; Doyle, Jeremiah; Eli Asher (easher@cowlitz.org); HML LRN (Kinne, Eric); Ferraiolo, Mark; Fish First (j.malinowski@ieee.org); gghalseth@gmail.com; James H Malinowski (jim.malinowski@icloud.com); 'Jeff Breckel'; Karchesky, Chris; Karen Adams; Kathryn Miller (kmiller@tu.org); Lesko, Erik; LouEllyn Jones; Mariah Stoll-Smith Reese (M.Reese@tds.net); Maynard, Chris (ECY); Melody Tereski; Michelle Day; Olson, Todd; Pam Johnson (johnson@co.skamania.wa.us); Patrick Frazier (pfrazier@lcfrb.gen.wa.us); Patrick Lee; Peggy Miller; HML LRN (Morgan, Rhidian); Ruth Tracy; Samagaio, James; Shannon Wills; Shrier, Frank; Taylor Aalvik (taalvik@cowlitz.org)
Subject: ACTION REQUESTED: Swift FSC Net Repair Work Plan & Conference Call
Importance: High

Attn: ACC Participants

Please review the following information about the Swift FSC net. This work plan has just been approved so I am sending this to you to keep you informed and to set up some time to answer questions and get your input. This work will be starting the week of the December ACC meeting so having your input ahead of time would be most helpful. As a follow-up to this email I would like to schedule a short **ACC conference call next Wednesday (12/4/13) at 10:00 am** to take your questions and to discuss the net repair process.

During the winter of 2012/2013 the Swift Floating Surface Collector exclusion nets experienced damage in three areas. A moderate storm occurred early in January 2013 and sections of the float sleeves supporting the net tore away from the floats, most notably in the areas around the north and south turning points. Also during this storm, a portion of the north wing of the net was exposed on the surface of the dam as a result of the lowering reservoir level. The wind caused this exposed section of impermeable tarp material to flap against the rocks resulting in tearing and shredding of portions of it. The third issue occurred on the south wing of the net over the course of a large drawdown during the winter of 2012/2013 (approximately 80 feet, to Elevation 920). When the reservoir was raised in the spring of 2013, portions of the south wing of the net appear to have gotten caught on unknown objects (likely root wads or rocks) on the bottom of the reservoir and large tears occurred in the south wing tarp material as the floats tried to rise with the reservoir surface and likely experienced dynamic loading with waves in this condition. The following are steps that will be taken to make the necessary repairs.

Float Sleeves

The existing float sleeves are 18-ounce PVC coated polyester tarp material. The float sleeves experienced some damage during installation of the net, requiring patching and field repairs at the time. The sleeves then experienced significant damage during the wind event at the beginning of January 2013. The most extensive damage was in the area around the turning points, although some small isolated damage occurred along the north shoreline closure section.

PacifiCorp will change the float sleeve material from the exiting polyester tarp material to Dyneema netting material (SK-75 fiber manufactured by DSM, netting manufactured by Baddinotti SA) with a 1/4-inch square mesh construction. Individual threads of the netting shall have a minimum tension breaking strength of 160 pounds. Although much of the main net sleeve withstood the January wind storm, we will upgrade the entire sleeve including the shoreline closure sections to the Dyneema net material sleeves. This will result in a sleeve with significantly greater strength. It will also allow for ease of inspection of the float tubes and associated hardware, as project personnel will be able to see through the netting easily from the downstream side.

Air Hoses

The existing 1-inch-diameter air hoses have elongated significantly since installation. PacifiCorp will remove and replace these hoses with 1-inch-diameter Pacific Echo Spiralite 090 or Goodyear Spiraflex Aggie PVC hose. This same new hose material will be used to replace the 2-foot-long Gates Longhorn hoses currently installed between the submersible float attachments and the quick disconnects.

North and South Main Net Top and End Treatment

A remotely operated vehicle (ROV) survey of the main net is scheduled next week. However, at this time, the north and south main nets appear to have remained intact from the seam where they attach to the float sleeves, down to the bottom of the reservoir; although they have separated from the adjacent side barrier tarp material. This separation was actually by design as the intentional point of failure in the event the tension line fuse ever broke. The existing main net material will likely be reused with the following modifications.

Along the top of the existing nets, at the main seam where the existing float sleeves are sewn to the net, the existing float sleeves will be cut away. A new section of 1/8-inch mesh Dyneema net (SK-75 fiber manufactured by DSM, netting manufactured by Baddinotti SA) approximately 12- inches high, and continuous over the length of the net, will be sewn onto the top of the main seam. This new net section will have a continuous Dyneema rope (SK-75 Samson Amsteel Blue) sewn into the top of it to be used for tying the new float sleeves onto the existing net. At the turning point ends of the nets, where they have partially separated from the tarp material associated with the shoreline closure sections, the ends of the nets shall be pulled all the way up to the surface. After completing the separation from the tarp material all the way to the bottom, a

vertical rope will be tied along the entire exposed edge of the net material to be used later as part of the ultimate attachment to the new shoreline closure section. This work will be completed in December 2013.

North and South Shoreline Closure Sections

The existing damaged north and south shoreline closure sections shall be removed from the reservoir. Removal of the side nets will take place in January 2014 and the new side nets will be installed by end of March 2014.

The new shoreline closure sections will be fabricated from 1/8-inch mesh nylon (black knotless netting manufactured by Baddinotti SA) net to provide for fry exclusion in these areas. The netting will be square panels approximately 50 by 50 feet. The lowest panels will need to be trapezoidal to match the sloping bottom. The perimeter of each panel will be a nylon rope (Samson PTS-12 Braided) forming a rip-stop and providing for the ability to hand tie the panels together into a large contiguous net. This design shall allow for future in-place replacement of individual square panels in the event of damage.

Snag Prevention Measures

The modifications to the two shoreline closure sections described above depend upon the shoreline areas and reservoir floor where these sections are located being smoothed out. Protruding features that the net could get snagged on need to be covered, providing a relatively smooth surface for the net to lie down on during reservoir drawdowns.

Prior to installation of the new end barrier panels, PacifiCorp plans to place matting on the reservoir floor along the barrier alignment to prevent snagging on protrusions from the ground surface. The material may consist of galvanized cable or wire fabricated in a grid configuration with openings about 6-inch by 6-inch. A geosynthetic fabric or rubber-type material will be attached to the top side of the matting to provide a smooth non-snagging surface. This system will prevent the net from entangling in the gaps between the riprap and tree stumps when reservoir levels are lowered. The matting will be placed along the entire length of the end barrier and will be anchored around the perimeter at specified locations and secured with weights, or existing riprap, as in the case of the north barrier. The anti-snagging measures will range in width from 20-feet at elevation 1,000 (full pool) to 100-feet wide near the turning points.

Protection of the Main Net Sections

PacifiCorp does not desire the north and south main net sections to remain fully floating through the winter in their current condition due to risk of further damage prior to repair and reattachment to the side nets. PacifiCorp is proposing to sink the upper main net in December 2013, and leave submerged until the new north and south closure sections are installed in spring of 2014. This action is to prevent any damage to the main net sections until the side nets are ready for reattachment.

With the current large tears in the nets, the fish collector itself has proven to be an attractive nuisance where the pump water plumes occur around the collector. PacifiCorp prefers to shut the fish collector down while the nets are submerged, a period of approximately three months, to remove the attractive nuisance and allow the fish to disperse from the area before the nets are returned to service. We believe the fish assemblage at the time nets are put back in place, will be similar to the time when the nets were first put into service (i.e. minimal levels). We think this action will be better over-all for the fish population until the net repair is complete and the collector is once again operational.

This net repair project is a significant endeavor for us especially since the damage to the net occurred during the first year of operation. As such we appreciate your attention to this issue.

3 (NORMAL
/ATER)

NORTH BUOY
TURNING POINT
N: 276,932.08
E: 1,269,842.80
STA: 21+57.6

NORTH NET TURNING
POINT PLAN
1
457

NORTH BARRIER
ANCHOR
A
115079 650

● = LOOSE WOODY DEBRIS

WOODY DEBRIS
TO BE REMOVED

400'±

BOTTOM MATTING

20'x40'
PANELS

200'±

NORTH BANK
IMPERMEABLE
BARRIER 465 FEET

EL. 920'

RIPRAP ENDS
ON FACE OF DAM

ANCHOR CHAIN BUOY
(SIZES VARY)

ANCHOR CHAIN

60'

TENSION LINE/NORTH

ANCHOR CHAIN BUOY
(SIZES VARY)

30' TALL TREE

SOUTH BUOY
TURNING POINT
N: 269,641.17
E: 1,210,980.34
STA: 4+05

STUMP

STUMP

ANCHOR CHAIN

SOUTH BANK
IMPERMEABLE
BARRIER 405 FEET

EL 1060 (NORMAL
HIGH WATER)

ANCHOR S-A

= STUMP, LOG, DEBRIS ACCUMULATION AREAS

SOUTH BARRIER
ANCHOR

8
116079.650

PROPOSED MATTING (20'x40' PANELS)