FINAL - Meeting Summary Notes
Lewis River License Implementation
Engineering Subgroup
November 5, 2009
Fish Passage Meeting Notes

Subgroup Participants Present: (13)

Arnold Adams, PacifiCorp
Will Shallenberger, PacifiCorp
Frank Shrier, PacifiCorp
Bryan Nordlund, NOAA Fisheries (NMFS)
Eric Kinne, WDFW
George Lee, Yakama Nation
Monty Nigus, Black & Veatch
Brian Friesz, Black & Veatch
Dennis Anderson, Black & Veatch
Ken Bates, Kozmo
Dana Postlewait, R2 Resource Consultants
Peter Christensen, R2 Resource Consultants
Suzanne Picard, R2 Resource Consultants

ADMINISTRATIVE
Welcomed attendees and reviewed agenda.

General Meeting Handouts:
Distributed via email on 10/28 /09 by Kim McCune:

- Meeting agenda for 11/05/2009 subgroup meeting
- Copies of the draft 9/29 /2009 subgroup meeting notes

Distributed at meeting 11/05/2009 (paper copies):

- Meeting agenda for 11/05/2009 subgroup meeting
- Copies of the draft 9/29/2009 subgroup meeting notes

FUTURE MEETING DATES
Future meeting dates were presented to the group for review, as follows:

- December 17, 2009 (Date confirmed, meeting may be done by conference call. If a face-to-face meeting is required, it will be held at the Vancouver office of WDFW. Eric Kinne will confirm if their conference room is available.)

OTHER ADMINISTRATIVE ITEMS

- No other general administrative items.

o MERWIN TRAP PROJECT

Handouts

- Merwin Upstream Passage Project Schedules, including shortened schedule.
- Merwin Upstream Passage Lighting Plan, with calculated lighting levels.

Presentations

- No PowerPoint presentations.

Review of Previous Meetings' Merwin Action Items: See status summary table below.

No.	SUMMARY OF PENDING MERWIN ACTION ITEMS (remaining from previous Meetings)	STATUS
M134	NMFS (Nordlund) Verify quoted injury numbers for electro-anesthesia and MS-222.	Done via email on 9/30/2009.
M139	Team provide feedback on list of possible equipment failures handed out by Arnold Adams. Look for possible omissions in the list and consider solutions to each that would minimize trap outages.	Done – PacifiCorp to send updated draft via email prior to final report.
M141	Team provide feedback on list of adjustments proposed for the project handed out by Arnold Adams. Feedback should consider if the listed adjustments are relevant and if any additional adjustments should be considered.	Addressed today, PacifiCorp to send updated draft via email prior to final report.
M142	PacifiCorp (Adams/Shrier) Research the Settlement Agreement commitments concerning the Merwin Trap operation and review the feasibility of options for meeting them, including the WDFW request for staged construction of the new facility to provide for early construction of trap features to allow early operation. Schedule a follow-up meeting within a few days of this meeting.	Done. Phone conference took place on Oct 1, 2009.
M143	R2/PacifiCorp (Postlewait/Adams/Shrier) Schedule a meeting for deciding the procedure for counting fish passed through the tubes at the sorting facility and data management/report options.	Done. Covered today.

Additional Comments on Last Meeting's Merwin Notes:

There are no additional comments on the August notes. The August notes can be finalized.

Bryan Nordlund provided the following comments on the September Meeting's notes:

- Page 7, AWS Pump Station Air Burst Cleaner – Questions about the progress of the air burst system design arose during the discussion of the September Meeting's notes. Answers and clarifications to those questions are as follows:
    - The air burst system constructed as part of the Phase I work will have the air array piping and nozzles within the AWS pump station intake trashrack, air piping from the AWS pump station intake trashrack arrays to a new receiver, and a new receiver. Provisions will be included to enable connecting the new receiver to the existing plant's low pressure air system. This will allow the system to function (burst) on a manual cycle based on the available recharge time of the new receiver unit. The existing pneumatic system will have sufficient capacity to run the air burst system. Dedicated burst compressors will not be added for Phase 1.
    - If it is determined that routine cleaning of the AWS pump station intake trashrack is required based on monitored differential water levels across the trashrack and overall system performance, then dedicated air burst system compressors will be procured and installed to complete the air burst system for the AWS pump station intake trashrack. While the additional air compressors are being procured and installed, the air burst system, using the existing plant's low pressure air system as described in the bulleted item above, will be utilized to clean the intake trashrack.
    - Language will need to be included in the facility's O&M Manual addressing this process, how it will work, and what will trigger an adjustment for the addition of a dedicated compressor.
    - No clarification is necessary for the September Meeting notes.
- Page 9, Bryan Nordlund's name is misspelled in the second paragraph.

MERWIN TRAP AGENDA TOPICS

Fish Counting System

- Fish Counting System – R2 and Black & Veatch have been working with Image Labs International to develop drawings and technical specifications for the Merwin fish counters. This work is nearly complete, and on schedule. It has been very helpful to have Image Labs assistance with this effort.
  - As discussed previously, two automatic counters are needed for the Phase I facility improvements: one in Slot 1-4, and the other at the end of the conveyance flume at the Presort Pond. The two systems are distinctly different.
    - The counter at Pool 1-4 will be installed at the pier noses of the vertical slot (Slot 1-4), and fish will swim through it as they enter Pool 1-4. The sensor plates will form the side walls of the slot. There will be no horizontal members required for this system, as previously shown with the Vaki Riverwatcher system, so the system can accommodate previous comments from the ES.
    - The counter at the conveyance flume dewatering exit will include a high speed video camera looking down over a translucent light box. This counter will require a sunshield to keep direct sunlight from interfering with the camera.
  - R2 and Image Labs met last week at the Lewis River Hatchery (i.e. Pond 15) to observe fish entering and exiting the sorting flumes. (Note: Thanks to Eric Kinne for arranging a crew and working up the fish.) The team worked through several technical details and developed mounting sketches for the counters.
  - Specific details discussed regarding the counters included:
    - Image Labs is confident of a 95% accuracy rate for both automatic counters. The counter at the exit of the conveyance flume will likely exceed this accuracy.
    - The 12” slot width should work well for the Slot 1-4 counter, even if sediment is present. Infrared LED sensors will be used, and will be compatible with the LED fishway lighting selected.
    - The conveyance flume dewatering will be expanded at the terminus of the dewatering section, to allow overlapping fish to spread out for better counting accuracy. Dana showed a sketch of the latest dewatering box design to accommodate the fish counter.
    - Both fish counters will give a +1, -1 signal, indicating that “yes, it’s a fish”, and “it’s entering (+1) or exiting (-1) the fishway”. The control logic and counting into the data system will be through the programmable logic controller (PLC).
    - The control logic to “reset” the count between the Slot 1-4 counter, and the conveyance flume counter will also be handled by the PLC design.

- Image recognition is a possible feature of both counters; however, R2 has advised Image Labs that we don't need that feature for this system. The group agreed that this feature is not needed.
- Dana noted that Image Labs has asked whether it would be advantageous to allow remote access to the fish counters. Remote access would allow Image Labs to troubleshoot and repair the system from their headquarters should the need arise. Security is an issue for PacifiCorp, and the design team will coordinate with PacifiCorp for network access constraints. If remote access is not provided, technicians can access the same troubleshooting data by visiting the site, so this does not limit the system capabilities.
- Dana noted that Vaki has recently shown interest in providing a competing counter to meet the performance specifications needed for the Slot 1-4 counter. R2 will write the final fish counter specifications around the Image Labs counters, but will include an "Owner Approved Equal" clause to accommodate consideration of other vendors should competing technology be available at the time of construction.

- The position of the main lift hopper and the Presort Pond lateral crowder will be coordinated to prevent fish from exiting the flume when the crowder is adjacent to the exit of the conveyance flume. Limit switches with lock outs will be provided to prevent accidental use of the hopper when the crowder is immediately adjacent to the conveyance flume exit.
- The counters on the sorting system will be connected to alarms designed to prevent over-crowding in the Presort Pond. If the Presort Pond capacity is exceeded, operators could turn off the Attraction Water System to prevent attracting more fish into the ladder, close the entrance to the ladder using pickets, or simply not run the hopper. During unattended times, it is expected that dispatchers at HCC would call a designated hatchery representative of such alarm conditions.

- In addition to the automated counters, fish will also get counted manually at the sorting table using capacitive buttons similar to those provided at Pond 15. It has been decided (with input from F. Shrier and E. Kinne) that there will be 8 buttons on each of the larger tanks and 4 on each of the smaller tanks (as compared to the 4/2 buttons used at Pond 15). An operator will press a button corresponding with the species, gender and destination of each fish as they are sent down the flume.
  - There will also be redundant LED counters in the flume to each large tank, which will help prevent over-crowding of the holding tanks if operators forget to manually press the buttons.
  - The manual fish counts will be used to calibrate the automated counters with each batch of fish, reducing systematic errors in the counts.

Sorting Table

- Eric Kinne noted recent concern that the hand wand metal detectors at Pond 15 are picking up signals from the sorting table. The theory is some ferrous metal may have

been used in the table construction. Eric noted this is a new concern as of yesterday, and they need to look into this situation further. His point was to be sure the table specification expressly states that only non-ferrous metals be used in its construction. The group leaned toward stainless steel, but agreed to write the specifications to allow for fiberglass or stainless steel at the contractor's option.

Construction Schedule

- Possible Construction Schedule Acceleration. Monty Nigus handed out an updated version of the previous construction schedule and an accelerated version of the schedule. Highlights of the schedule discussion are as follows:
  - The primary goal of researching opportunities for an accelerated schedule was to address the request made at the last ES meeting, and discussed with PacifiCorp and agency representatives in a subsequent conference call, to accommodate a June 2010 start timeframe to the project's construction.
  - Both schedules presented show a 1-month outage in 2011 and a 6-month outage in 2012. These outages occur during the previously discussed 6-month preferred trap closure window from June 1 through December 31. The shorter outage in 2011 will be required to switch over the water supply from the existing fish pump in Pool 1-3 to the permanent Ladder Water Supply pumps in Pump Bay No. 1. These interim trapping measures will allow the contractor to work on the fishway demo and excavation work, while the trap remains in operation.
  - Based on the estimated bid and procurement schedule for the general contractor, it will not be possible to implement a June 2010 start date (i.e. start one year earlier) to avoid the full season shutdown in 2012 (July through December). It is also likely that the contractor may need a few short outages in addition to the 1-month outage in 2011 to accommodate his work plan. It is anticipated that these short outages will be on order of a few days.
  - The estimated schedule is a guide for construction planning. The bid documents will require a detailed schedule from the general contractor, which will be more accurate than these projections and tailored to his work plan. A requirement to minimize the trap outage period and to identify any shorter outages will be included among the specified scheduling requirements. The ES can be updated on schedule progress on a regular basis during construction.
  - Current scheduling allows 90 days following submission of the final plans and specs for FERC review. The 90 days is typical for FERC's dam safety review based in Portland. PacifiCorp has been communicating with FERC, and will confirm with the license compliance group in Washington DC whether or not 90 days will be sufficient, or identify an updated review period.
  - Frank Shrier will notify the ACC of the updated schedule, and will organize a second conference call with agency representatives to discuss specifics.

Operations Manual and Maintenance Plan

- A draft of the Operations Manual and Maintenance Plan is planned to be submitted to Arnold Adams at PacifiCorp on November 16th. The design team will issue a draft to the ES members prior to the final design submittal so concerns can be addressed at or prior to the last ES meeting scheduled for December 17th.

Pump Station Design Update

- The design is progressing on the pump station and water delivery pipe.
- Manually cleaned strainers are provided in the supply piping to the water turbine pump drives.
- The air burst system design update discussed at the beginning of the meeting is documented in the notes above.

Fishways Design Update

- Lighting Plan. Black & Veatch handed out a final proposed lighting plan for the fish ladder. Lights are divided into two zones, both of which are dimmable and can be turned on/off independently of each other. Zone 1 provides bright lighting just upstream of every slot entrance. Zone 2 lights are further upstream in the pools and can be turned on/off or dimmed independently from Zone 1 lights.
  - Given the importance of light fixture location in the fishway, it was decided that dimensions needed to be added to the lighting plan that will constrain each fixture location to within 6-inches of where it is shown on the drawing.

Lift and Conveyance Design Update

- Dana Postlewait presented updated drawings of the fish hopper to the group. The design is being done in AutoCAD Inventor and has been rendered using 3-dimensional solids modeling to assist in the design and to identify physical interferences.
- Black & Veatch has done an economic analysis of the conveyance pipe materials comparing the different life cycle costs and implications of using stainless steel compared to coated carbon steel pipe. Stainless steel pipe has a higher initial cost, but its lower maintenance requirements over the life of the pipe make it comparable with the coated carbon steel pipe. Since there is no appreciable difference in cost and since there are fewer risks associated with the stainless steel pipe (i.e. no risk of rough spots or corrosion due to coating deterioration), the team agreed that stainless steel pipe was the logical choice for the conveyance flume.
  - Because stainless will be specified, no access ports will be needed for the initial construction, as their purpose was to allow inspection of the lining.
  - If inspection ports are believed to be necessary in the future, they could be retrofitted at a later time.

- The bends in the conveyance pipe will be made of schedule 40 stainless steel pipe while the straight sections will be made of lighter schedule 10. Consequently, the inside diameters of the straight sections will have a slightly larger inside diameter than the bends. The difference will be about ¼" inside diameter. To smooth out this difference in diameter, the seams will be beveled to provide a 5:1 transition. The ES agreed with this approach.

Sorting Facility Design Update

- Dana presented updated drawings showing the lateral and vertical crowders in the pre-sort pond. The ES agreed that the comments provided at the last meeting have been addressed, and the crowder layout is acceptable.
- Dana noted that the false weir at the end of the Presort Pond is expected to successfully attract fish into the flumes leading to the anesthesia baskets. It is anticipated that the vertical crowder at the end of the Presort Pond will only be necessary to move the few remaining fish that were not attracted by the false weir.
- Access will be provided for personnel to help guide any remaining fish into one or both of the false weirs. Eric noted that both weirs could be run simultaneously to move the last few fish out of the pond.
- Dana presented a design layout to accommodate the direct truck loading which is to be provided to accommodate extreme large fish runs in lieu of providing a 5th large tank. A new direct tube is proposed in the sorting table that leads to truck parked in the storage area of the sorting facility. This location avoids the need to block the truck loading route, which would have occurred if the future 5th tank location was used.
    - A spiral flume (like provided at Pond 15), is proposed to more gently deliver fish to the truck, as opposed to dropping them from above or using a steep flume. Dana, Frank Shrier, and Eric Kinne reported that the spiral flumes at Pond 15 are working very well, and are believed to be acceptable for use with anesthetized fish.
    - It was decided that the discussion and the ensuing decisions would be facilitated by a field trip and a quick field demonstration after the ES Meeting. Eric Kinne arranged with hatchery staff to work up several fish for a post-meeting hatchery visit. The group traveled to the Lewis River Hatchery after the meeting and observed use of the spiral flumes with anesthetized fish.
    - Based on observations at the hatchery, it was agreed on-site that the spiral flume would be adequate for the direct truck loading at the sorting facility as presented in the meeting. The design team will proceed with this layout and design.
    - It was decided in the meeting that the flume from the sorting table used for the direct truck loading would be equipped with 8 buttons. If a 5th tank is added in the future, the 8 button panel can be moved to the 5th tank, and a 4 button counter (Subsquently decided to go ahead with 8 buttons) provided at the direct truck loading flume.
- Monty presented up-to-date versions of the Sorting Facility Drain line layout spilling from the bridge. The design as presented was acceptable to the group.

Adjustments

- Bryan Nordlund presented his comments to the proposed adjustments list from the last meeting. Bryan suggested the team update the list to separate biological performance items from basic project performance standards. The team agreed with this approach and will update the list. This will also be documented in the Operations Manual and Maintenance Plan.

	SUMMARY OF PENDING MERWIN ACTION ITEMS (remaining from previous Meetings)	**STATUS**
No.	**SUMMARY OF NEW MERWIN ACTION ITEMS (from November 5th, 2009 Meeting)**	**STATUS**
M144	Kozmo (Bates). During the September 29th ES Meeting, Ken cited a study performed by the Corp of Engineers at Bonneville that showed that fish were significantly more attracted to a lighted orifice. Bryan asked Ken to provide the exact citation to the team.	Pending
M145	Black & Veatch (Nigus, Anderson) Include language describing air burst pneumatic system upgrade plans in the O&M Manual, include description of available system recharge and pulse times expected with use of existing air system.	Pending
M146	PacifiCorp (Olson) Contact FERC regarding the upcoming 100% Submittal to help expedite and better quantify the FERC review process and likely time necessary.	Pending
M147	PacifiCorp (Shrier) Add discussion of updated trap outage and construction schedule to the Agenda for the next ACC meeting, and inform the ACC.	Pending
M148	PacifiCorp/NMFS/WDFW/Yakama Nation (Leigh/Kinne/Day/Nordlund/Shrier/Olson/Adams/Lee) Hold conference call to discuss specifics of the updated construction schedule.	Pending
M149	Design Team (Adams, with assistance as required) Generate updated list of project adjustments organized based on biological performance as discussed, and send them to ES for review. The goal is to separate biological adjustments vs. general project performance requirements.	Pending
M150	PacifiCorp (Adams). Update and distribute list of potential failure modes, to also be included in the O&M Manual. (No feedback was received from the ES at the November 5th meeting.)	Pending

o SWIFT DOWNSTREAM PASSAGE PROJECT

Handouts

- Swift Downstream Project – Primary Screen Changes and Updated Hydraulic Profiles.

Presentations

- PowerPoint presentation highlighting exclusion net material options and revision to the primary screens.

Review of Previous Meetings' Swift Action Items: See status summary table below.

No.	SUMMARY OF PENDING SWIFT ACTION ITEMS (remaining from previous Meetings)	STATUS
S68	PacifiCorp (Shrier) Share ACC feedback on adult release concepts at the next subgroup meeting in written form.	Done. No written document-tation necessary as this is an ongoing topic.
S74	NMFS (Nordlund) Find the California study done on smolt rejection at different trash rack spacings and share it with the subgroup.	Done
S75	R2 (Christensen) Investigate alternative fine-mesh Spectra net material and report back to the subgroup.	Done today
S76	B&V (Friesz) Develop a revised Eagle Cliffs adult release pipe layout for review at the next meeting.	Done today
S77	WDFW (Kinne/Leigh) Provide written comments on Swift 90% submittal.	Done via email to Kim on 10/8/09.

Additional Comments on Last Meeting's Swift Notes:

Comments from Bryan Nordlund:

Page 11 of 16 – In Note 1, under the Action Item Summary Table; replace the words "a backup" in the fourth sentence with the words "an alternative". The sentence should read: "PacifiCorp said that they cannot count on a third party ever constructing a new ramp, and they do not feel it is necessary for them to propose building it simply as *an alternative* for three otherwise acceptable sites."

Page 12 of 16 – In the second sentence of the second bullet under Fine-Mesh Nets; replace the word "passage" to "entrainment". The end of the sentence should read "…to prevent fry *entrainment*."

Page 13 of 16 – In the second sentence of the first bullet under Trashrack Spacing; insert the words "greater than" so that the sentence reads "Therefore, he said that he would be comfortable with *greater than* 4-inch spacing."

Page 15 of 16 – In the last sentence under the topic FERC Submittal Process; insert the words "the status of" so the sentence reads "Bryan advised that a letter denoting *the status of* NMFS's approval of the design can…".

SWIFT DOWNSTREAM AGENDA TOPICS

Final Review Schedule

- There is some confusion surrounding the language in the Settlement Agreement dealing with Agency approval of the design. It would likely not be possible for NMFS to approve the 100% design submittal on the same day it is submitted to FERC. A conditional approval is possible, but it is unclear if that is the intent of the Settlement Agreement. More discussion will be needed offline to determine the best course of action. PacifiCorp will contact FERC and provide an update to the ES.

Net Update

- Peter presented physical samples of 1/4-inch mesh and fine-mesh net alternatives. Highlights of the discussion were as follows:
  - The sample of coated Dyneema 1/16-inch mesh net was a small portion of a specialty net made for a scientific study in Japan. It is unclear whether such a net would be readily available for this project, or if a slightly larger 3/32-inch mesh (fry criteria) could be specified.
  - Another option described was to extend the 1/4-inch mesh to the top of the net for strength, and overlay the upper 15 feet (between 15 and 30 feet deep) with finer-mesh nylon net.
  - Finally, it would be possible to sew the 1/4-inch Dyneema net in such a way as to partially collapse its weave, creating smaller openings.
  - Bryan Nordlund said that he was comfortable with either of the first two options, but discarded the option involving partially collapsing the 1/4-inch mesh net.
  - It was decided that in order to achieve both the desired mesh size and durability in the upper portion of the exclusion nets, it would be best to double up and use the stronger 1/4-inch woven Dyneema mesh net (for strength, downstream side) in addition to a 3/32-inch nylon net (for fry exclusion, upstream side). Peter noted that this option offers the advantage that if the finer-mesh net is found to drive flow and smolts deeper such that some smolts are not finding the NTS entrance the overlay could be removed as an adjustment.
  - A blue 1/4-inch mesh Dyneema net with thinner single strand threads was presented as a possible alternative to the white woven Dyneema net presented at the last meeting. Although the sample was not easily torn, and appeared strong enough, the

white, 1/4-inch woven Dyneema net inspired more confidence and the group felt that fish would be more likely to see it and avoid it.

- A question was raised as to whether the net material needs to be treated. Frank Shrier noted that the new Dyneema nets installed at Yale were not treated. They have been in service for about a month. Over the course of that month, there has been a lot of leaf litter seen at Yale Reservoir. The nets are due for inspection next week. Results of this inspection will be shared with the group.

Screen Channel Update

- Peter reviewed how the primary screens have been shortened by 2 feet to provide sufficient space to attach the NTS to the FSC. He has re-evaluated and finalized the FSC screen hydraulics to reflect this new geometry. The original design was sufficiently conservative that the resulting hydraulic analysis shows that the screens will still operate within criteria as before. Peter provided drawings of the hydraulic profiles associated with five operating conditions with final screen design. The design will proceed with this final hydraulic design.

Trashrack

- Brian Friesz presented new design details for the trashrack at the entrance to the FSC. The rack will be located at the entrance to the NTS. The bars will be vertical and made of HDPE. The top 3 feet will be removable impervious plate to exclude floating debris. The 3-foot impervious area represents the still water elevation ± 1.5 feet of wave action. Bar spacing will be 10 inches on-center. Should it be deemed necessary to decrease the spacing of the trashrack bars in the future, this can be done be disassembling the rack, adding additional bars, replacing the bar spacers with smaller spacers, and reassembling the rack.
- Brian then presented a potential adjustment involving adding a vee-shaped floating barrier extending from the corners of the NTS entrance to a center point upstream. The barrier would extend approximately 1.5 feet below the water and should deflect floating debris toward the sides. A walkway would be included over the length of the structure for access and maintenance. Traveling screens could be installed at the ends of the vee to remove the debris that accumulates there. The adjustment would be added if it was found that debris tended to accumulate on the initial impervious section across the face of the trashrack and ultimately get pulled down below it and through the trashrack into the FSC.
    - Dana noted that this proposed adjustment is consistent with what has been successfully tested at the Cowlitz Facility during this summer's prototype tests. Tacoma added a smaller vee-shape floating boom upstream of the surface collection system at the Cowlitz Falls Facility this summer. Their study data shows that the vee-shape worked well to guide debris to each side of the collection system. The study data also shows that a 1-foot deep impervious barrier successfully excluded a vast majority of the debris, and allowed for reliable operation of the fish separator that the Swift design is based on. This study supports the Swift Team's decision to include an impervious section of similar depth.

- It should be noted that the Cowlitz study data also showed fish holding beneath the mats of floating debris. It is expected that similar behavior might be seen at the Swift FSC, making frequent removal of floating debris a necessity. This study is not yet public.

Adult Release at Eagle Cliffs

- Adult Release Concepts – The team looked at photos provided by Curt Leigh of an existing installation and discussed options for adult release at the Eagle Cliffs site. Photos of a hinged outfall pipe at River Mill Dam were also presented. After much discussion, it was decided to return to an earlier option, or an adaptation of it, showing a release pipe hinged at the existing bridge pier that can be manually lowered from the bridge. Bryan requested that the upstream end be lowered as much as is practical to minimize the slope of the pipe.
  - The pipe would be stored in its retracted position above the level of the bottom flange of the bridge girder to protect it from flood flows.
  - A performance assessment will be necessary to show that fish are not being harmed by the release process.
  - B&V will develop drawings, calculations, and language describing the installation's performance assessment for distribution to the engineering subgroup.

No.	**SUMMARY OF PENDING SWIFT ACTION ITEMS (remaining from previous Meetings)**	**STATUS**
	None.	
No.	**SUMMARY OF NEW SWIFT ACTION ITEMS (from November 5, 2009 Meeting)**	**STATUS**
S78	PacifiCorp/NMFS (Shallenberger/Olson/Shrier/Nordlund) Conference call to discuss the Settlement Agreement language dealing with Agency approval of the 100% Design Package.	Pending.
S79	R2 (Christensen) Look into net coatings and if they would be necessary on the nets at Swift.	Pending.
S80	PacifiCorp (Shallenberger/Shrier) Share the results of next week's Yale net inspection with the engineering subgroup.	Pending.
S81	B&V (Friesz) Develop drawings, calculations, and language describing the performance assessment of the adult release concept at the Eagle Cliffs site. Distribute these to the engineering subgroup.	Pending.

Adjourned office portion of meeting and traveled to the new facilities at Pond 15 of the Lewis River Hatchery to observe the passage of anesthetized adult fish down the new spiral chutes. Adjourned from Pond 15 at 4:00 PM.