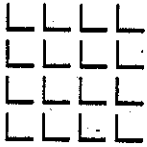


Attachment G
Meeting notes from January 30, 2003



ENTRIX

Environmental Consultants

January 30, 2003
MEETING MINUTES

KILARC-COW CREEK PROJECT (FERC No. 606)

Meeting between NOAA National Marine Fisheries Service (NMFS), State Water Resources Control Board (SWRCB), United States Fish and Wildlife Service (USFWS), California Department of Fish and Game (CDFG), ENTRIX, and Pacific Gas and Electric (PG&E).

Location: The meeting was located at the offices of NMFS
650 Capitol Mall, Sacramento, California.

Attendees: National Marine Fisheries Service
Eric Theiss – NMFS Project Manager
Dave White – NMFS Fish Passage Engineer (joined by conference call)
Steve Edmondson – NMFS FERC Coordinator (joined by conference call)
Stacy Li - NMFS Instream Flow Specialist (joined by conference call)

State Water Resources Control Board
A. Britt Fecko – SWRCB Environmental Specialist
Carson Cox – SWRCB Environmental Specialist

California Department of Fish and Game
Annie Manji – CDFG FERC Coordinator (joined by conference call)
Steve Baumgartner – CDFG Fisheries Biologist (joined by conference call)

United States Fish and Wildlife Service
Levi Lewis – USFWS Biologist

Pacific Gas and Electric Company
Angela Risdon – PG&E Project Manager
Curtis Steitz – PG&E Biologist
Bob Folsom – PG&E Hydrographer
Dan Kogut – PG&E Hydrographer
Chip Stalica – PG&E Manager for Northern Hydro
Sally Lubben – PG&E Planner

ENTRIX, Inc.
Jean Baldrige – ENTRIX Project Manager
Mitchell Katzel – ENTRIX Project Geomorphologist
Janelle Nolan-Summers – ENTRIX Project Wildlife Biologist
Tracy MacMillan – ENTRIX Staff Biologist

Purpose: To review the Kilarc-Cow Creek Hydro Relicensing Project and study plans; directly addressing issues raised in agency correspondence to the First Stage Consultation Document (FSCD).

Meeting Agenda (Attachment 1) was distributed and the meeting commenced at 9:30 a.m.

INTRODUCTIONS and PROJECT OVERVIEW

PG&E: Angela Risdon kicked off the meeting by introducing herself. Meeting participants were introduced to one another and Ms. Risdon proceeded with an overview of the project using the schematics (Attachment 2). Ms. Risdon discussed the main features on the Kilarc side of the project being the three diversions: 1) one on North Canyon Creek with 2.5 cfs capacity, 2) one on South Canyon Creek (Toscher Diversion) with a 7.5 cfs capacity, and 3) the Kilarc Main Diversion Dam on Old Cow Creek. The Kilarc Diversion Dam (capacity 52-cfs) diverts water into the Kilarc Forebay via the Kilarc Main Canal and then flows through a penstock to Kilarc Powerhouse. Downstream of the Kilarc Powerhouse is the Olsen Project, which is operated by the Olsen Power Partners.

The South Cow Creek Main Canal (capacity 50 cfs) receives water from South Cow Creek Diversion Dam located just upstream of the confluence of Mill Creek and South Cow Creek. Mill Creek Diversion has a 10-cfs capacity, and dumps water into South Cow Creek just upstream of South Cow Creek Diversion Dam where this water is diverted again. German Ditch is the last diverter in the reach above South Cow Creek Diversion. The flow in the South Cow Creek Main Canal empties into the South Cow Creek Forebay, enters the penstock and flows to the Cow Creek Powerhouse. The powerhouse releases water into Hooten Gulch, where it is potentially diverted at Wild Oak Diversion (a non-PG&E facility) for hydropower and again at Abbott Ditch (non-PG&E facility). Hooten Gulch provides the water supply for the Abbott Ditch with a capacity of 7.5 cfs.

NMFS: Eric Theiss wanted to know if the flow from German Ditch was included in PG&E's project.

ENTRIX: Jean Baldrige explained that German Ditch is not a project feature, but the unused water gets diverted to Mill Creek.

NMFS: Eric Theiss wondered what type of diversion structure was there.

PG&E: Chip Stalica explained that the German Ditch dam had been recently taken out by high flows and now there is just a culvert remaining. The flow in Mill Creek upstream of the diversion consists of a natural flow and unused water imported from South Cow Creek through German Ditch. There are several diversions from South Cow Creek upstream of the South Cow Creek Diversion Dam. PG&E have water rights at the terminus of German Ditch for diversion to Mill Creek. However, in recent years, water has not been

available at the end of German Ditch for this diversion probably because there are a lot of irrigators using water from that diversion.

AGENCY MANAGEMENT GOALS

PG&E: Angela Risdon moved the meeting along to the next meeting agenda item, to discuss Agency Management Goals for the Project watershed, and handed the discussion over to Jean Baldrige.

ENTRIX: Jean Baldrige said the intent of this discussion was to define each Agency's management goals for the Project and have them on record. CDFG highlighted their goals throughout their FSCD response letter, as did SWRCB, so PG&E believes that they have a pretty good understanding of the management objectives of these agencies.

CDFG Management Goals: manage the South Cow Creek for both anadromous and trout populations and it is the Agency's position that steelhead can get over Whitmore Falls.

SWRCB Management Goals: focus on water quality objectives that protect beneficial uses for the project streams.

SWRCB: Carson Cox said that SWRCB's goals are to preserve water quality and are outlined in the Basin Plan.

ENTRIX: Jean continued with NMFS management goals.

NMFS Management Goals: Believed to be similar to USFWS's goals, in protecting endangered species potentially affected by the project, although a response letter had not been received from USFWS as yet. Believes NMFS has an interest to discover whether spring-run Chinook can migrate beyond Whitmore Falls.

NMFS: Eric Theiss said that NMFS's comments were very comprehensive but still broad in their management objectives and that they need to gather more information.

NMFS: Steve Edmondson apologized for all of the personnel changes that this Project has had to date and asked if it would help to get a letter specifying NMFS' management goals and objectives.

ENTRIX: Jean Baldrige indicated that this would be very helpful.

NMFS: Steve Edmondson said that it would probably require another site visit but he would generate a list of resource management goals and objectives for the Project watershed.

ACTION ITEM: Steve Edmondson to provide an outline of NMFS's resource management goals and objectives.

ENTRIX: Jean Baldrige completed her discussion by explaining that PG&E was designated by FERC as the nonfederal representative for ESA consultations.

LAND OWNERSHIP IN THE PROJECT AREA

ENTRIX: Jean Baldrige explained that there was no Federal land included within the Project boundaries so the United States Forest Service (USFS) were not part of the project consultation process. The land status also has implications for recreation as recreational opportunities are limited due to the extensive private land holding in the Project vicinity.

TOPICS FOR DISCUSSION

ENTRIX: Jean Baldrige explained that the “topics for discussion” were organized by study, focusing on the ones that had similar comments from the Agencies. Ms. Baldrige clarified that some of the studies, Aquatic Habitat and Passage Barrier Analysis in particular, had already been started. The big rains had interrupted the fieldwork, but they would be completed when flow levels dropped.

SWRCB: Carson Cox asked if habitat study had started at base flows.

ENTRIX: Jean Baldrige said that it was started at moderate flows, not base flows and that it was not finished because there was about 50 cfs out at Old Cow Creek right now.

NMFS: Stacy Li wanted to know the purpose for the type of aquatic habitat study that ENTRIX planned on doing if no detailed habitat mapping was intended.

ENTRIX: Jean Baldrige said it was being used to help select instream flow sampling locations.

NMFS: Stacy Li reminded ENTRIX that the habitat may or may not change with discharge depending on the gradient and one way to derive that information is to map the system at various flows.

ENTRIX: Jean Baldrige said that we would get more into this topic when we discussed the Instream Flow Study. Ms. Baldrige also explained that we needed to collect the IFIM information within the coming year.

STREAM GAGING and UNIMPAIRED HYDROGRAPH

ENTRIX: Jean Baldrige described the existing gaging system was limited and the Licensee did not have gage records to identify the underlying hydrology of this system. There is some good data at PG&E diversions for low flows but no good gages at high flow. Paul Wisheropp (ENTRIX) and Dan Kogut (PG&E) are working on a simulated model for hydrology of the system.

SWRCB: Carson Cox said that stream gaging was discussed at length in the last Public Agency Meeting and he believed that ENTRIX had agreed to generate a gaging plan instead of

relying solely on estimated hydrography. SWRCB understands the difficulty of gaging this system but there were some options that had been discussed in lieu of USGS recorders.

PG&E: Dan Kogut discussed the difficulty in implementing any sampling methodology due to the limited site access from private lands.

SWRCB: Carson Cox asked about the possibility of gaging fish flows at Kilarc Diversion Dam.

PG&E: Dan Kogut said that he had brought the local USGS representative out to the site to discuss gaging options. They discussed the possibility of gaging but the flow is not uniform or laminar. There can be an excessive amount of velocity and you would have to calibrate the information. It would be difficult to calibrate if there were no uniform flows and there are no accurate weir formulas.

SWRCB: Carson Cox said that high flows could easily be gaged, and low flows could be collected through the Powerhouse, only leaving middle flows. The information may not be to USGS standards but a little creative thinking could get the middle flows extrapolated out from the low and high flow data. It is important to look at what could actually be measured, especially at medium flows, which would be the most impacted by the Project.

ENTRIX: Jean Baldrige agreed that additional information was needed but pointed out the information that we do have such as, the flow coming into the diversions was known to be 50 cfs, and summer flows in the project area are well documented.

SWRCB: A. Britt Fecko questioned why there was no high flow information when there were three USGS gages on Cow Creek.

ENTRIX: Mitchell Katzel said that there was one gage on South Cow Creek below the Powerhouse but that was the only one that he knew of in the area.

SWRCB: A. Britt Fecko compared the USGS gage numbers that she had to the one that Mitchell Katzel (ENTRIX) had in his documentation. The numbers that Ms. Fecko had did not match the one that Mr. Katzel had. The location of the gages to which SWRCB is referring is still in question.

ENTRIX: Jean Baldrige stated that it was certainly the intent of ENTRIX and PG&E to use all hydrological information available to them.

SWRCB: Carson Cox asked whether it was ENTRIX's intention to put together a gaging plan discussing the information available and the information to be provided.

NMFS: Stacy Li asked what there was in terms of a simulated hydrograph.

ENTRIX: Jean Baldrige explained that Paul Wisheropp (ENTRIX) and Dan Kogut (PG&E) were working on the simulated hydrology for the system and that there was some information

from gages that had operated for a short time. Middle flow ranges were going to need verification.

SWRCB: A. Britt Fecko said that SWRCB had some serious concerns about solely using simulated hydrograph information for this project and asked if ENTRIX and PG&E would please present what Paul Wisheropp and Dan Kogut were doing. Also asked if ENTRIX and PG&E would please develop a plan to discuss a gaging system and options.

ACTION ITEM: Present the simulated hydrograph information to the Agencies.

ENTRIX: Jean Baldrige said that the simulated hydrology would be released as soon as it was complete. Ms. Baldrige continued to explain that there just were not many options for gaging on the Old Cow side. There were a few more options available on the South Cow side of the Project; however, one year's worth of good data would provide little real value to this Project given the Project schedule for these studies.

NMFS: Eric Theiss said that it would be great to lay out the options none-the-less and prepare a plan that could be passed around.

SWRCB: Carson Cox agreed wholeheartedly.

PG&E: Dan Kogut explained that the annual delivery pattern for the watershed was like a fingerprint and that no two water years are alike. He reiterated that a year's worth of information retrieved from gaging would not provide any real value to the Project hydrology.

ENTRIX: Jean Baldrige also reminded the participants that part of the problem occurred due to the diversions upstream.

NMFS: Steve Edmondson said that a gaging plan is what they were looking for.

ENTRIX: Jean Baldrige stated that PG&E anticipated the need for some full gaging systems with their new license and that generation of a detailed stream flow monitoring gaging plan was certainly something to do as part of the new license implementation.

ACTION ITEM: Generate a detailed Stream Flow Monitoring gaging plan in consultation with the Agencies after the new license is issued.

ENTRIX: Jean Baldrige asked if there were any additional questions or comments regarding the stream gaging.

Levi Lewis from USFWS entered and introductions went around the room.

CDFG: Annie Manji asked if the overflow at Kilarc Forebay would be quantified by the study and if structural modification had been ruled out on the Kilarc portion of the Project.

ENTRIX: Jean Baldrige stated that streamflow measurements would be collected for the studies and that PG&E was still evaluating structural modification but it had been ruled out for the short term.

SWRCB: Carson Cox said that there was concern with the accuracy of the information if no additional measurements were collected.

ENTRIX: Jean Baldrige explained that extra flow would be measured at the Cow Creek Gage.

PG&E: Dan Kogut said that trying to quantify flows from the Kilarc overflow could have impacts on operations and could compromise operation of the canal, which leads back to the Creek. The canal could be surveyed but taking actual discharge measurements would be very challenging.

CDFG: Annie Manji asked Dan Kogut who the USGS representative was that visited the site.

PG&E: Dan Kogut said that it was Mike Friebel out of the Redding office.

SWRCB: A. Britt Fecko stated again that SWRCB would like to see other plans for stream gaging in addition to the simulation.

ENTRIX: Jean Baldrige stated that there were not a lot of other options to be explored in the short term. The gaging would not provide the type of information that the Agencies were looking for in a year's time.

SWRCB: A. Britt Fecko said SWRCB was concerned about verification of the simulation.

ENTRIX: Jean Baldrige believes that many of the concerns with stream gaging and hydrography will be addressed when Paul Wisheropp and Dan Kogut present the information that they have been working on.

NMFS: Eric Theiss wanted to know if any temporary gages were going to be used in South Cow or anywhere on the Project.

ENTRIX: Jean Baldrige asked Eric Theiss what type of temporary gages he was thinking of.

NMFS: Eric Theiss explained that he was thinking of a pressure transducer with a data logger recorder, which is fairly inexpensive.

ENTRIX: Jean Baldrige said that it was something ENTRIX and PG&E would evaluate.

WATER QUALITY and WATER TEMPERATURE STUDIES

ENTRIX: Jean Baldrige explained that water quality and temperature monitoring was planned up and down of the project features and in the forebays. Ms. Baldrige acknowledged that SWRCB had some additional suggestions on the parameters to be analyzed and that the

program would be modified to include PCBs, cadmium, phosphorous, copper, and boron (as proposed by SWRCB).

For Water temperature monitoring, data loggers would be used to monitor the water temperature at all of the same locations that water quality samples were collected at. The sample locations should help determine how the temperature patterns change with Project operations.

Note: During this discussion, Ms. Baldrige pointed out the proposed water temperature and water monitoring sample locations illustrated on a poster sized schematic diagram. In the drawing showing the temperature recording stations it was discussed that the temperature station in the Kilarc penstock should be removed. Removing the sample location in the Kilarc penstock also amended the second figure showing fish population study areas. The amended figures are in the project file.

SWRCB: A. Britt Fecko asked if sampling would occur in the canals.

ENTRIX: Jean Baldrige said that no sampling would be performed in the canals but water would be collected at the head of the Diversions and the Kilarc Forebay.

PG&E: Chip Stalica reminded participants that Kilarc Forebay is a heavily used recreation site and to expect vandalism of the data loggers.

NMFS: Eric Theiss said that he had lots of experience with monitoring in highly populated areas and that it was a problem, but definitely manageable. The monitoring equipment should be camouflaged with a log or pipe.

ENTRIX: Jean Baldrige explained that there were a lot of Agency comments on temperature modeling and that modeling may be considered but the option was being withheld until additional information was collected.

NMFS: Eric Theiss asked if the goal of the model was to regress the information with historical data.

ENTRIX: Jean Baldrige stated that if a temperature model were used, the goal would be to calibrate a temperature model with summer patterns and historical information and see what you would expect with project impacts. The analysis would include a discussion on anticipated impacts associated with the continued operation of the Project. The impact evaluation would consider whether project operations contribute to any inconsistencies and if so, modeling would be a consideration.

The meeting was handed over to Mitchell Katzel to discuss the Sediment Studies. Mitchell had a handout (Attachment 3) that was distributed and faxed to the individuals participating via teleconference. During the lull that occurred to fax Mr. Katzel's handout, Jean Baldrige asked Levi Lewis (USFWS) to discuss USFWS's position on the FSCD and the status of their response letter.

JSFWS: Levi Lewis apologized for the comments to the FSCD being so late and explained that USFWS was having a lot of personnel issues. The response letter has been written and is awaiting signature, which should happen today. Mr. Lewis explained that he had the comments with him and he would share those with the participants today. Another project incongruity is that tomorrow is Mr. Lewis' last day and Debra Giglio would be the new project contact for USFWS. The Branch Chief is gone and two senior biologists retired leaving the project with Debra Giglio who only has a year of experience but is the only person left to handle hydrology. Mr. Lewis was not sure as to how active USFWS would be in this process.

ENTRIX: Jean Baldrige explained where the meeting was in terms of the Agenda and said that USFWS's comments could be discussed under "Other Studies". Ms. Baldrige handed the meeting over to Mitchell Katzel again.

SEDIMENT STUDIES

ENTRIX: Mitchell Katzel said that as a prelude to discussing sediment he wanted to talk about the geomorphology of the channel. There were three main topics to discuss with the participants (Pg. 1 of Attachment 3): 1) What factors influence potential alteration of channel morphology, 2) What flows are responsible for forming and maintaining the channel morphology, and 3) How much water can be diverted without altering channel morphology.

(Pg. 2 of Attachment 3). To answer the first question, *What factors influence potential alteration of channel morphology?* we look at magnitude of flow and sediment alteration. Intuitively, if you change the flow a little, geomorphology changes a little. You would also look at the distance you are from the point of disturbance. Typically, the effects of diversion decrease downstream. Then you would look at the channel morphology. Generally, lower gradient channels are more responsive than higher gradient ones.

(Pg. 3 of Attachment 3). To answer the second question, *What flows are responsible for forming and maintaining the channel morphology?* you look at geomorphically significant flows, "effective discharge", and "bankfull discharge".

CDFG: Annie Manji asked what kind of time frame Mitchell Katzel was discussing when he used the term "over time".

ENTRIX: Mitchell Katzel explained that as a rule of thumb, channels dammed or flow regulated take a few decades to respond and come back into equilibrium. Some channels may do it in 40 to 50 years and some may do it in 10 years.

NMFS: Stacy Li questioned why Mitchell Katzel would assume that the channels in the Project area have a relevance to bankfull discharge.

ENTRIX: Mitchell Katzel said that he did believe there was a relevance to bankfull discharge in the Project area and thought that his rationale would become clear later in the discussion.

NMFS: Stacy Li asked if Mitchell Katzel believed that the channels were connected to a floodplain, which is typical of “bankfull discharge”.

ENTRIX: Mitchell Katzel said that he did not believe they were connected to a floodplain. He explained that bankfull discharge is nearly synonymous with effective discharge on alluvial channels and it was empirically determined that 1.5 to 2 years of annual flooding does the most work in the channel by moving sediments. This is all typical, but there are exceptions, which is probably what Stacy Li (NMFS) was getting at.

Mr. Katzel continued with a discussion of estimated geomorphically significant flows at the two main points of diversion: Old Cow Creek at Kilarc Diversion Canal and South Cow Creek at Main Canal. The closest gaging station to both diversions with annual peak flow data is USGS gage 11372200 on South Cow Creek downstream of Cow Creek Powerhouse; that has 16 years of peak flow data. The type of flows that would be expected to affect channel geomorphology. The USGS gage does not get Old Cow Creek.

NMFS: Eric Theiss asked if the USGS gage was downstream of the Kilarc Powerhouse.

ENTRIX: Jean Baldrige said “yes” but that it still did not get Old Cow Creek data.

CDFG: Annie Manji asked if the gage was located upstream of the confluence of Old Cow Creek.

ENTRIX: Jean Baldrige responded “yes”.

ENTRIX: Mitchell Katzel continued with his discussion of geomorphology, stating that peak flows at a gaged location can be used to estimate peak flows at an un-gaged location by developing a proportional drainage area relationship for two locations. There is a close relationship between streamflow and drainage area. On a seasonal basis, you can have a dry year in total flow volume, but you might get a big flow event with one good storm in a drought. Ideally you want 20 to 25 years of data for stability of the hydrologic record, but we do not have it for this Project. Discussed table on Pg. 4 of Attachment 3.

(Pg. 5 of Attachment 3). Mr. Katzel explained the rationale behind the relationship between peak flows and drainage areas. To check the information he performed two checks on the data. Check one was to compare Cow Creek at Millville gaging station to South Cow Creek gaging data. Check two was to use regional curves for drainage area-bankfull discharge relationships. As the table on page 5 of the handout indicates, the comparison of peak annual flows was 19.9 percent on average over 9 years. Average over 7 years was 17 percent.

The South Cow gage is 18 percent of the drainage area to the Millville gage, which matches the average. Thus concluding that the drainage area correlation is pretty good, and we should be able to reasonably represent the peak annual discharge.

Check 2 involved the use of regional curves for drainage area-bankfull discharge relationships. (Pg. 6 of Attachment 3). The regional curve is fairly close to the calculated bankfull discharge; therefore curve F was used to check the estimated bankfull from drainage areas for the two diversion locations.

CDFG: Annie Manji inquired as to how Mitchell Katzel chose curve F.

ENTRIX: Mitchell Katzel said it was based on 49 years of reliable Millville data. Mr. Katzel continued with his presentation directing participants to look at the table on the bottom of page 6 of Attachment 3.

NMFS: Eric Theiss asked how 50-cfs maximum diversion rate divided by 16,500 cfs equaled 3 percent.

ENTRIX: Mitchell Katzel explained that the number was based on each year's peak flow, not the combined years peak flow. (Pg. 7 of Attachment 3). Mr. Katzel explained that there are no set criteria for magnitude of flow reduction and expected significance of effects but there are guidelines. A 5 percent decrease of peak flow has been suggested by SWRCB's staff a couple of years ago as a threshold without requiring environmental documentation.

ENTRIX: Jean Baldrige asked Mitchell if the threshold information he was providing was specific to Coastal Anadromous Streams.

ENTRIX: Mitchell Katzel said "yes" but that it should be applicable to the Sierra Nevadas. Continuing with geomorphology, Mr. Katzel asked (rhetorically) if we had a responsive channel or not. Kilarc has 2 to 12 percent gradient slopes with most of the slopes in the 4 to 6 percent range. It is a fairly typical mountain channel gradient, moderately to highly incised. Higher gradient, incised mountain channels generally have a greater sediment transport capacity than supply. That type of channel morphology is resilient to alterations of the flow or sediment regime. A low gradient, moderately incised channel would be more affected than the mountain channel type that we have. The effects you would expect to see on this Project are likely to be small.

ENTRIX: Jean Baldrige asked if we would expect to have concern about sediment and the spawning gravels due to the Project or the timber operations upstream.

ENTRIX: Mitchell Katzel said that it was possible to effect the spawning gravel but unlikely. Any changes in sediment deposition would probably be subtle in this system. There could be some cumulative effects in the riffles but the unimpaired 1.5 and 2-year flows have not been significantly reduced by the project operations. If there was a problem with sedimentation you would expect to find it in the lower gradient stream reaches, particularly in pools. However, Mr. Katzel believes that the sediment would be flushed

out with the first higher flows of the runoff season, probably about every other year. There is evidence of bank erosion that would contribute sediment to the channel as well, but the bed is comprised predominantly of large boulders and it can take a good flow.

SWRCB: Carson Cox said that the presentation was really good and the point was well taken but that it did not rule out that the Project may be having effects annually on the channel. Mr. Cox is primarily concerned with the INTRA-ANNUAL effects from Project operations; the subtle but really important impacts. Mr. Cox asked Mitchell Katzel how you establish the intra-annual effects geomorphically.

ENTRIX: Mitchell Katzel said that there was obviously a lot of variability in the stream conditions from year to year anyway. You have to ask yourself if a total of 50-cfs diversion capacity is going to alter the channel, and how would you distinguish subtle alterations, for example, from the effects of a long-term drought.

SWRCB: A. Britt Fecko asked if the diversions were all unlined.

PG&E: Chip Stalica said that they were partially lined and unlined. Mr. Stalica also noted that PG&E does not always divert 50 cfs. They reduce their diversion proportionally to the flow.

ENTRIX: Mitchell Katzel said that he used 50 cfs for all of his calculations to assume a worst case scenario.

NMFS: Eric Theiss questioned PG&E as to whether they could divert 50 cfs even if the flow was only at 54 cfs.

PG&E: Chip Stalica said "yes", that it was PG&E's water rights to divert 50 cfs.

ENTRIX: Mitchell Katzel said that geomorphically, the Project area streams are just not in the channel types that would be responsive or sensitive to flow and sediment alterations.

SWRCB: A. Britt Fecko expressed her concern about dismissing the possibility of sedimentation when sediment collects in the forebays and diversions.

PG&E: Chip Stalica thought that if anything, PG&E was helping to remove the fines since there was deposition over time in the forebays. The deposition occurs in the forebays because the gradient is flat and the velocities are very low, unlike the stream channels.

NMFS: Eric Theiss asked where the dredged fines were deposited.

PG&E: Chip Stalica informed him that the fines were deposited on the banks of the forebays.

ENTRIX: Jean Baldrige asked if Eric Theiss was concerned about the dredged material getting back into the system. Eric Theiss nodded an affirmation.

- PG&E:* Chip Stalica said that the material revegetates quickly and it is hardly noticeable within a season.
- ENTRIX:* Jean Baldrige explained that the Aquatic Habitat Surveys and Riparian Surveys would all be looking at bank erosion and evidence of sedimentation. The slower backwater areas is where they would expect to see sedimentation buildup if there was going to be any. Jean Baldrige asked Mitchell Katzel if there would be any way to determine sedimentation from the logging activities from that of the Project.
- ENTRIX:* Mitchell Katzel said that you would have to go way upstream, above the logging activities, if that were possible, in order to obtain baseline information that was unaffected by logging.
- SWRCB:* Carson Cox suggested that ENTRIX and PG&E look above the diversion and do a comparison upstream and above the diverted reach, focusing on the impacts that would occur during the summer. Project impacts would be seen earlier in the season, instead of August, September, conditions appear in the diverted reach in June or July. Not only should assessments be done in the spring, but they should also be performed monthly or bimonthly.
- ENTRIX:* Jean Baldrige thought that ENTRIX should focus on the areas where you would anticipate an impact such as riffles and backwaters.
- ENTRIX:* Mitchell Katzel agreed that ENTRIX should focus on the most sensitive areas of the Project.
- SWRCB:* Carson Cox reiterated that monitoring above and below the diversions would provide valuable information on sedimentation. Mr. Cox asked when the flow drops off.
- PG&E:* Chip Stalica said that it varied from year to year but it usually occurred around August, September or October.
- SWRCB:* Carson Cox said that if the flows typically dropped off in those months then you would want to do the monitoring in June and July.
- ENRILX:* Jean Baldrige stated that Mitchell Katzel would work with PG&E to come up with a plan to address it.
- NMFS:* Stacy Li wanted to know if there was a Sediment Management Plan. If you are looking at ten diversions with sediments being hauled out of the system without going downstream than you are not looking at the whole system and it may be sediment starved.
- ENTRIX:* Mitchell Katzel said that from what he had seen there was continual sediment recruitment.

- NMFS:* Stacy Li thought that it would be appropriate for ENTRIX and PG&E to address those issues in a Sediment Management Plan. Mr. Li also expressed concern about bankfull assessments at much higher flows than are necessary to transport sediment, and that entrenched channels are a different thing.
- ENTRIX:* Mitchell Katzel agreed that entrenched channels were different because they had a higher transport rate.
- NMFS:* Stacy Li said that ENTRIX and PG&E just needed to make sure that they were covering the ground. Mr. Li suggested that spawning gravel availability be closely looked at.
- ENTRIX:* Mitchell Katzel said that there just was no interruption of the bedload transport and Jean Baldrige again stated that the dams are too low to interfere with the transport.
- NMFS:* Stacy Li asked if PG&E plans to operate the project passively.
- SWRCB:* A. Britt Fecko raised her concern again about the deposition of fines in Kilarc Forebay from the canal banks.
- PG&E:* Chip Stalica said that fines could not be transported that far down into PG&E's system. The canals have been there for 100 years and PG&E has never had to rebuild the banks, so they are stable and there is little bank erosion. The water is so controlled that there are no huge flows and no substantial erosion in the Project canals.
- SWRCB:* Carson Cox asked if the sediment deposition in the Kilarc Forebay was from fines in the stream.
- NMFS:* Steve Edmondson asked if the diversions were low enough for transport of all bed sizes.
- ENTRIX:* Jean Baldrige explained that PG&E does not clean gravels out of their system.
- NMFS:* Stacy Li asked if the project was interrupting bed load movement.
- ENTRIX:* Mitchell Katzel said he would include additional information on bed load, channel sedimentation, and an evaluation of bank erosion when developing the study plan. The study plan should look specifically at spawning gravels and whether or not the Project exacerbates sedimentation.
- ACTION ITEM:** Mitchell Katzel is to provide additional information on bed load, evaluation of bank erosion, spawning gravels, and channel sedimentation when developing the study plan.
- CDFG:* Annie Manji asked about the effects of riparian encroachment on geomorphology.
- ENTRIX:* Jean said that Janelle Nolan- Summers would discuss this in greater detail.

CDFG: Annie Manji wondered if we were just talking about bed load.

ENTRIX: Mitchell Katzel said that Annie Manji was right on track with considering the aspects of how alterations of flow influence channel morphology and potential riparian encroachment.

ENTRIX: Janelle Nolan-Summers said that, as part of the Riparian Habitat Surveys ENTRIX would be looking at the health and vigor of existing riparian vegetation. Ms. Nolan-Summers explained that the project area had very limited riparian vegetation in narrow bands adjacent to the channel with spotty distribution because there was not much floodplain in the Project area.

SWRCB: A. Britt Fecko asked Mitchell Katzel to please explain why ENTRIX believed that Rosgen Level II classification was unnecessary.

ENTRIX: Mitchell Katzel explained that with the type of channel we were looking at, Rosgen Level II classification would not change the picture of how the peak flow regime responsible for maintaining the channel has been only slightly altered.

SWRCB: A. Britt Fecko said that it would give you the ability to determine changes between the reference stream, a level of quantification and entrenchment that would not be possible with Rosgen Level I characterization and Rosgen Level II may be needed.

ENTRIX: Mitchell Katzel thought that in lieu of channel typing it would be more productive to go to the most sensitive locations and study those locations, making sure they are comparable.

SWRCB: A. Britt Fecko said again that it was not characterization or classification that she was interested in obtaining from the Rosgen Level II information.

ENTRIX: Mitchell Katzel said that if SWRCB was not looking for classification information from the Rosgen Level II but rather the quantification information, then ENTRIX was doing something very similar.

SWRCB: A. Britt Fecko asked if ENTRIX was proposing to perform a Rosgen Level II characterization in the areas that were identified as highly sensitive.

ENTRIX: Mitchell Katzel said "yes".

SWRCB: Britt Fecko reiterated that she was interested in quantification of the channel because there was a lot of professional opinion being used to characterize the area and that made her uncomfortable.

SWRCB: Carson Cox wanted to clarify and asked if ENTRIX was planning to look at the Rosgen Level II criteria on a limited and intensive scale versus channel wide.

- ENTRIX:* Mitchell Katzel said "yes". Thought it was more effective than doing a shotgun approach, which would not prove to be very effective. Thoroughly investigating the most sensitive locations seems like the best approach for this system and then if problems arise the scope would be broadened.
- SWRCB:* Carson Cox asked that he and Britt Fecko be included with the study, results and decision process regarding this issue.
- SWRCB:* A. Britt Fecko said that they were particularly interested if problems were observed. SWRCB would like to know where and why the problems exist.
- ENTRIX:* Mitchell Katzel asked if the logging activities upstream of the Project were in the headwaters.
- PG&E:* Chip Stalica said that the logging operations were on the Old Cow side.
- ENTRIX:* Mitchell Katzel said that if ENTRIX finds a problem it would be very difficult to determine whether it was from logging in the watershed, from the diversion, or if it was a natural, temporal change in the channel conditions. Mr. Katzel said that if ENTRIX were to find a sedimentation issue he could not promise that there would be an answer as to who was creating it.
- SWRCB:* Carson Cox said that the study should at least give us an idea of what is happening in the system.
- ENTRIX:* Jean Baldrige said that there were two levels being dealt with: 1) the aquatic and riparian habitat surveys, and 2) the sensitive areas. Both would provide information to identify if sedimentation was an issue.
- SWRCB:* A. Britt Fecko asked why only one season of field work was planned and if there was any flexibility in that schedule.
- PG&E:* Angela Risdon explained the time frame in which PG&E's license expires and when the draft license needs to be submitted. With the date required for submittal of PG&E's application, there really was not any flexibility with the schedule.
- NMFS:* Eric Theiss asked why field work was not started before now since NMFS was asking for two years worth of data per FERC. Mr. Theiss was concerned with the schedule and timing of fieldwork.
- PG&E:* Angela Risdon explained that the Project was considered to be small and uncomplicated when the process was started and PG&E scheduled it in accordance with size and anticipated scope. As the process has gone along, the scope has expanded and ideally things should have started sooner but they were not and now PG&E is trying to fit them in to comply with their FERC deadlines. Ms. Risdon explained that some of the studies

would slip into next spring but they should be completed in time for the application to be submitted.

- USFWS:* Levi Lewis inquired about the Flow Studies and how ENTRIX was going to quantify the flows to ensure that they were not moving fines.
- ENTRIX:* Mitchell Katzel said that 2-cfs would not move any fines.
- USFWS:* Levi Lewis said that if the fines were settling out in the Forebays at 50 cfs how could ENTRIX be sure that they were not being transported through the system.
- PG&E:* Chip Stalica said that the velocity of the water changed considerably in the Forebays. The water was at 50 cfs when entering but it did not remain at the same velocity.
- ENTRIX:* Jean Baldrige said that the habitat survey should tell us whether we have fines settlement in the pools. The information would not necessarily be obtained through the Stream Flow Study but through the Habitat Assessments.
- USFWS:* Levi Lewis asked if ENTRIX had an Incipient Motion Study Plan.
- ENTRIX:* Mitchell Katzel said that if a problem was discovered then an Incipient Motion Study Plan could be developed.
- USFWS:* Levi Lewis said that USFWS would need to make flow recommendations in the future and thought PG&E and ENTRIX should keep this in mind.
- ENTRIX:* Mitchell Katzel said that if a lot of sediment was observed in the pools then they would be talking about it, but it was not expected with the channel type.
- SWRCB:* A. Britt Fecko asked how ENTRIX was planning to evaluate the sediment deposition in the pools.
- ENTRIX:* Jean Baldrige said that it would be done through the Habitat Assessments.
- SWRCB:* A. Britt Fecko wanted to know if there was a methodology or a protocol that would be followed.
- ENTRIX:* Jean Baldrige said that the first step was to identify whether there was a problem or not. To determine that, aquatic and riparian habitat studies would be performed, and particular attention would be paid to bank erosion and sediment in pools. Once the surveys are performed then ENTRIX would work with Mitchell Katzel to see how the project could impact the system.
- SWRCB:* Carson Cox returned to Levi Lewis' line of questioning and wanted to know how ENTRIX was going to analyze low flows in the riffle habitats.

ENTRIX: Mitchell Katzel said that whether you had flows at 4 cfs or 50 cfs you were not going to see fine sediment moving through the system.

SWRCB: Carson Cox said that you would see fines.

ENTRIX: Mitchell Katzel said that the physics just are not there to move fines at those flows.

ENTRIX: Jean Baldrige said that Mitchell Katzel was thinking like a Geomorphologist and not a fish biologist.

SWRCB: A. Britt Fecko asked if ENTRIX was talking about picking up and moving sediments or turbidity.

ENTRIX: Jean Baldrige said that ENTRIX was planning on doing detailed studies in sensitive areas of the diverted reach, which she believed would answer the questions that are being asked.

PG&E: Angela Risdon said we should adjourn for lunch and return at 1:00 p.m. since there was still quite a bit to discuss.

Meeting adjourned for Lunch.

PG&E: Angela Risdon waited for everyone to return from lunch and started the meeting again at approximately 1:10 p.m.

SWRCB: A. Britt Fecko inquired as to whether PG&E or ENTRIX had thought about having an independent note taker and hoped that they would consider it depending on communication protocols. Ms. Fecko also wanted to know if the Agencies would be receiving a written protocol for the passage barrier survey prior to the study being completed.

ENTRIX: Jean Baldrige said that the passage barrier surveys had already begun.

SWRCB: A. Britt Fecko said that she specifically wanted to know if the results and decisions made during this meeting and the plans that have been asked for will be provided prior to the field work being initiated.

NMFS: Eric Theiss said that study plans had to be prepared before the fieldwork could be started.

ENTRIX: Jean Baldrige explained that the FSCD was the Study Plan.

NMFS: Eric Theiss said that the FSCD was not detailed enough to act as the Study Plan and USFWS and SWRCB wholeheartedly agreed.

SWRCB: A. Britt Fecko explained that quantitative studies needed to be outlined and modifications to studies such as the portions of Rosgen Level II that will be adapted to the sensitive areas need to be outlined with a description of the modifications.

USFWS: Levi Lewis shared an example of where the USFWS thought the Study Plans needed more information. The Fish Population Study states that the size of the fish will be evaluated unless 100 or more fish are captured and then they would be categorized. USFWS feels that this description of field activities is too vague.

ENTRIX: Jean Baldrige explained that the fish would be put into sub-samples and each sub-sample would be stratified by class size, so technically they would all be measured.

CDFG: Annie Manji said that Steve Baumgartner had to leave for another meeting so she was going to try to handle the Fish Study information on her own.

ENTRIX: Jean Baldrige gave an overview of the aquatic habitat study to be performed and then discussed the fish studies, instream flow and passage barrier programs again.

INSTREAM FLOW STUDY

SWRCB: Carson Cox asked about PHABSIM.

ENTRIX: Jean Baldrige explained that ENTRIX was not going to be able to rely on the detailed mapping that ENTRIX usually has, but that some transects would be flagged. There are dilemmas with the South Cow because some representative transects have been identified during the current moderate flows. Ms. Baldrige recommended that the interested parties get out to see the transect selections before the flows change.

ACTION ITEM: Schedule a trip to the Project area with stakeholders to review and assist with transect selection before flows change.

SWRCB: Carson Cox asked if ENTRIX was selecting the transects based on a quick habitat study at higher flows and then was planning to weight them on lower flows. Mr. Cox suggested that a conservative approach be taken with installation of more transects so when the flows decrease there is some assurance that they have been captured.

NMFS: Stacy Li asked how ENTRIX is planning on doing transects in the representative reaches.

ENTRIX: Jean Baldrige said that she had originally wanted to go off the habitat mapping but she was open to suggestions.

NMFS: Stacy Li suggested that there be adequate representation in the dominant habitat types, i.e., a representative reach approach.

ENTRIX: Jean Baldrige said that she hoped Stacy Li would be out in the field for the transect selection. The important thing is to make a decision when everyone is looking at the

Creeks to determine whether the approach will be representative reach or transect. The problem with the South Cow Creek is that there is no habitat mapping data to rely on yet.

CDFG: Annie Manji asked if the spawning gravels were limited on South Cow.

PG&E: Curtis Steitz said that South Cow had gravel in the riffles and tails of pools. PG&E believes that these would be good spawning areas.

CDFG: Annie Manji said that sampling needed to be performed in areas where spawning habitat was sparse, such as in the backwater.

ENTRIX: Jean Baldrige explained that the study would be looking at low flow, riffles, backwaters, and she believed that Annie Manji's concern would be alleviated. Ms. Baldrige asked Stacy Li to explain why he would like to see a representative reach approach.

NMFS: Stacy Li explained that it was better to think of transects as depth and velocity to get a more accurate record. Mr. Li believed that the representative reach was a more powerful tool but the trick was in selecting how many transects you needed.

NMFS: Steve Edmondson said that the state of the art approach was to do habitat transects versus representative reach.

ENTRIX: Jean Baldrige said that ENTRIX had planned to select transects based on the habitat survey information, but may need to take an alternative approach given the flow levels in the stream.

NMFS: Steve Edmondson asked if the Agencies would be receiving a write-up of the proposed approach.

ENTRIX: Jean Baldrige said "yes" and also the opportunity to select the transects with ENTRIX and PG&E.

ACTION ITEM: Provide Agencies with a detailed approach and methodology for the Instream Flow Study.

CDFG: Annie Manji wanted to know if there was a date set for transect selection.

ENTRIX: Jean Baldrige said that a date had not been set because it was flow dependent.

SWRCB: A. Britt Fecko would like to be notified when the transect selection is going to occur.

NMFS: Steve Edmondson would also like to be present for transect selection and would also like to get David White (NMFS) out to the project area before the transects are selected for a "dog and pony" tour of the project.

CDFG: Annie Manji expressed an interest in having a couple of CDFG project people attend the “dog and pony” show as well.

ACTION ITEM: Set up a site visit for new project participants and other interested individuals prior to scheduling the transect selection.

ENTRIX: Jean Baldrige explained that the instream flow monitoring would also be used for analysis of the macroinvertebrate habitats, so there were a couple of things being accomplished with the transects. Ms. Baldrige continued to explain how originally Old Cow was not being looked at for anadromous fish types but now those curves would be run. South Cow would be looked at for fall, late-fall Chinook and steelhead.

SWRCB: Carson Cox questioned whether curves would be run for all fish present.

ENTRIX: Jean Baldrige explained that originally ENTRIX considered Whitmore Falls to be a barrier but based on CDFG’s letter, steelhead will be considered to have the potential to be in Old Cow Creek and Chinook have a future potential to be in the Creek.

NMFS: Eric Theiss disagreed that Chinook were incapable of making it over the Falls now.

NMFS: Stacy Li said that the macroinvertebrate study needed to be done on a representative reach rather than as a sample of depth and velocity. The area of the riffle would be needed and he did not believe that you would get that information with a transect. Mr. Li believes that the riffle needs to be actively mapped.

ENTRIX: Jean Baldrige said that a couple of transects (two transects versus one) within the riffle would do what Stacy Li was describing and then the Gore and Judy curves would be used.

NMFS: Stacy Li said that would work but it may involve two transects per riffle transects.

ENTRIX: Jean Baldrige said that transect placement would be evaluated in the field.

PASSAGE BARRIER SURVEY

ENTRIX: Jean Baldrige discussed the intentions of the passage barrier survey using the Powers and Orsborn protocols. ENTRIX would be looking at cascades and small dams, critical riffles, and identifying natural features that could potentially be barriers.

CDFG: Annie Manji asked at what flows the passage barrier surveys would be performed.

ENTRIX: Jean Baldrige said that they would be looking at base flows and low flows.

NMFS: Eric Theiss asked if a modifier would be applied to the low flow.

ENTRIX: Jean Baldrige said that the survey would be performed at low flow and if a potential barrier was observed, the surveyors would document whether they thought it would be passable at higher flows.

NMFS: Eric Theiss thought that kind of assumption would be a guess and said that passage barriers identified during low flows would have to be revisited at high flows to establish their validity.

CDFG: Annie Manji said that CDFG personnel had just gone out and done some surveys on Old Cow Creek for the Roseburg and Timber Harvest Plan Project. At a relatively good flow they observed an absolute barrier midway in Old Cow Creek.

ENTRIX: Jean Baldrige asked if CDFG considered it to be an absolute barrier for anadromous fish.

CDFG: Annie Manji said "yes". Ms. Manji said that she had electronically mailed the information to the other stakeholders and Eric Theiss brought up the picture on his computer. Annie Manji said that she could provide pictures and coordinates to ENTRIX. Ms. Manji believed the location of the absolute barrier to be 1.3 miles above the Kilarc Powerhouse. Ms. Manji reiterated that CDFG does not consider anadromous fish to be present in the upper half of Old Cow Creek above the absolute barrier.

ACTION ITEM: CDFG to send a map with the areas that have already been surveyed by CDFG, with pictures and coordinates of the absolute barrier. Fieldwork is to be coordinated between ENTRIX and CDFG to avoid duplication of effort.

ENTRIX: Jean Baldrige said that she would like to visit that barrier on the field trip that is to be scheduled.

FISH STUDIES

ENTRIX: Jean Baldrige discussed the proposed fish study plan. Surveys were planned for early summer and later in the season. Electrofishing would be performed in Old Cow Creek above the absolute barrier and snorkeling would be performed in the areas expected or assumed to have ESA salmonids.

SWRCB: A. Britt Fecko asked if she remembered hearing a story about someone fishing in the canal.

ENTRIX: Jean Baldrige said that you could fish in the Kilarc Main Canal. It could be thought of as a fish conveyance system as well as a water conveyance system. There would not be any fish in the South Cow Creek Main Canal because it was screened at one end. Fish surveys would be performed by snorkeling only on the South Cow side and some snorkeling would be conducted on the Old Cow side with electrofishing above the barrier. Sampling would be completed in the canals and forebays.

NMFS: Stacy Li inquired as to the kind of electrofishing that would be done in the field.

- NTRIX:* Jean Baldrige said that it was just a little 3-pass backpack shocker.
- PG&E:* Curtis Steitz asked how the reservoirs were going to be sampled.
- ENTRIX:* Jean Baldrige said that there would be gill netting at the Cow Creek Forebay, fyke netting and electrofishing.
- CDFG:* Annie Manji asked when the snorkeling would be done and how frequently.
- ENTRIX:* Jean Baldrige said the snorkeling would be performed in May and June with another survey planned for September.
- CDFG:* Annie Manji asked if ENTRIX was looking to see if the steelhead were using the reaches.
- ENTRIX:* Jean Baldrige said that we were going to assume that the steelhead were there since CDFG were going to consider this area of the South Cow to be steelhead habitat whether the fish population studies were successful in identifying the steelhead or not.
- CDFG:* Annie Manji clarified that PG&E was agreeing that the lower part of the Kilarc reach is potential steelhead habitat because CDFG was considering the area potential steelhead habitat but they were not necessarily assuming that steelhead were currently present.
- NTRIX:* Jean Baldrige said that steelhead had been shown to be present historically and even if CDFG was prepared to consider them unlikely to be there, NMFS would like ENTRIX to consider them present.
- NMFS:* Steve Edmondson said that he had talked to Phil Scordelis about the Olsen Project and he thought Phil might have some documentation of steelhead observed above the Olsen Powerhouse.
- ENTRIX:* Jean Baldrige said that it did not really matter whether the steelhead were actually there or not because ENTRIX would assume that they were there and would evaluate aquatic areas for appropriate habitat and monitor the water temperature, and address the issue of their presence with the studies.
- CDFG:* Annie Manji said that she was very interested in this and confirmed that snorkeling was planned for May above and below Whitmore Falls.
- ENTRIX:* Jean Baldrige asked Annie Manji what the long-term perspective for recovery/restorable goals on the watershed were. Ms. Baldrige wanted to know if CDFG was going to try to get more flow in the lower portion of the watershed.
- CDFG:* Annie Manji said that she was very pleased that ENTRIX and PG&E were assuming that the area was potential steelhead habitat and CDFG no longer thought it was necessary to put a ladder at Whitmore Falls.

- NMFS:* Eric Theiss asked where the Olsen Project was in relation to the Kilarc-Cow Project.
- CDFG:* Annie Manji responded by saying that the Olsen Project was a mile downstream of the Kilarc Powerhouse and there is approximately 3 miles between Whitmore Falls and Olsen. Water is diverted for about a 3-mile reach.
- NMFS:* Steve Edmondson wondered if anyone from CDFG had been out to evaluate the Olsen fish ladder and when steelhead is expected to be in the watershed.
- CDFG:* Annie Manji said that the fish ladder was being looked at by Carrie Moore and Mike Barry who were the leads on anadromy issues. CDFG has planned snorkeling surveys for March and April. Steelhead would be expected in the watershed now.
- ENTRIX:* Jean Baldrige was interested to see CDFG's sample locations.
- CDFG:* Annie Manji said she would let ENTRIX know. Right now CDFG was planning on surveying above the diversion on South Cow. It was a little late in the season for steelhead and early for spring run Chinook but CDFG was hoping to see something. Annie Manji reiterated how a cooperative effort between ENTRIX and CDFG would be advantageous to both parties.

Action Item: CDFG will provide PG&E/Entrix with sample locations.

- ENTRIX:* Jean Baldrige agreed.
- SWRCB:* Carson Cox questioned whether fall run Chinook were expected on the South Cow above the diversion.
- ENTRIX:* Jean Baldrige said that they were expected, assuming that they can move up the ladder.
- SWRCB:* Carson Cox asked if the ladder had ever been assessed.
- PG&E:* Curtis Steitz said it had been assessed after installation and it had been designed for both salmon and steelhead.
- ENTRIX:* Jean Baldrige added that Chinook would have a hard time getting through Wagner Canyon.
- SWRCB:* Carson Cox asked where Wagner Canyon was in relation to the Project features.
- PG&E:* Curtis Steitz responded that it was just above the Powerhouse.
- ENTRIX:* Jean Baldrige added that it was located downstream of Mill Creek Diversion, upstream of Hooten Gulch in the bypass reach.

- SWRCB:* Carson Cox inquired as to why Chinook would have a hard time getting through Wagner Canyon. Were there project induced low flows or other causes.
- ENTRIX:* Jean Baldrige said that the passage barrier study would identify all of those issues.
- SWRCB:* Carson Cox asked if the study would be conducted when the fish would be moving.
- ENTRIX:* Jean Baldrige said that ENTRIX had not planned on that. Currently, ENTRIX was planning on doing the passage barrier study during the aquatic habitat studies.
- SWRCB:* Carson Cox thought that if ENTRIX was looking for fish then they should look for fall-run Chinook as a nice "tie-in".
- ENTRIX:* Jean Baldrige said that ENTRIX would address the issue from a habitat perspective and assume that they are there so there is no need to look for them. If ENTRIX happens to see them during the studies then the information would obviously be reported but a lot of hours were not going to be spent to document their presence.
- CDFG:* Annie Manji asked why ENTRIX was planning on doing fish studies since they were assuming the presence of salmonids and anadromous fish species populations.
- ENTRIX:* Jean Baldrige explained that ENTRIX is trying to get an idea of resident communities and a number of young rainbow or steelhead on the Old Cow side.
- SWRCB:* Carson Cox read the Fish Population Study Objectives (Study 12 of the FSCD) which states that "the objective of this study is to characterize the distribution and abundance of fish species within the Project Area with emphasis on anadromous and resident salmonids, the target species." Mr. Cox added that ENTRIX really was not intending to determine the abundance if assumptions were going to be made of their presence.
- ENTRIX:* Jean Baldrige said that they would be looking for salmonids when people are in the field performing other work, but that there were no plans to sample fish during spawning migrations. Ms. Baldrige does not believe that snorkelers would be successful in finding the anadromous fish during high flows.
- NMFS:* Eric Theiss agreed that Carson Cox had a point and that abundance needed to be evaluated. That the objective of the Fish Population Study was to determine if spring Chinook and steelhead are present or not.
- NMFS:* Steve Edmondson said that Jean Baldrige had a point in that you were unlikely to see them because they are a listed species. The reason they are listed is because you are unlikely to find them and you have limited survey approaches to try to find them since they are listed.

NMFS: Eric Theiss said that he was not saying it was a necessary element of the study but that it would be interesting to see how much time the effort would take and he is interested to see a more "flushed out" study plan.

ENTRIX: Jean Baldrige said again that ENTRIX was not planning on spending any time finding out the abundance of anadromous species. Whether ENTRIX were to find 0, 50 or 100 fish it would not change the outcome of the project, which basically requires that the area be treated as though the fish are present.

NMFS: Steve Edmondson added that it would be more of a problematic issue for the Project if a lot of time was spent to find the anadromous fish and they were in fact found. If they were found one year and then not the next, as is likely to happen, it would be more of a concern to PG&E.

SWRCB: A. Britt Fecko asked how this approach to the fish population study would lend itself to an impact analysis.

ENTRIX: Jean Baldrige said that the question has to be answered with how the project is affecting potential habitat and that is why a detailed evaluation will be performed around fish screens.

SWRCB: A. Britt Fecko asked if ENTRIX had any intention of doing a redd survey.

ENTRIX: Jean Baldrige said "no".

SWRCB: A. Britt Fecko said that she was not interested in a population study of the redds, more of an indication as to whether there was a project impact.

PG&E: Curtis Steitz said that redds surveys had been done in the past with trapping and aerial surveys and they did not have very much luck.

SWRCB

& NMFS: A. Britt Fecko and Eric Theiss agreed that you do not get a lot of information from the air that that ground truthing needed to be done.

PG&E: Curtis Steitz said that he had found exactly the opposite to be true for redds surveys. Mr. Steitz thought that you could see carcasses much better from the air than on land.

SWRCB: A. Britt Fecko said that there was merit in walking and looking for redds.

ENTRIX: Jean Baldrige asked how the information would be used to affect the outcome of the project.

SWRCB: Carson Cox asked if ENTRIX was likely to find some reason as to why Chinook do not get through Wagner Canyon when the passage barrier and habitat studies are conducted.

- PG&E:* Curtis Steitz said that the flows are low and there is a possibility that they just do not get through.
- SWRCB:* A. Britt Fecko reiterated that her concern was not with the population study but with the level of impact to the population and how that would be addressed if there was no baseline information.
- ENTRIX:* Jean Baldrige repeated that studies have been done in the past and she just did not see what the value to the project would be to do it again. ENTRIX would like to focus on what the project effects to the habitat are.
- NMFS:* Eric Theiss asked if ENTRIX would be assuming that spring Chinook stop at Wagner Canyon.
- ENTRIX:* Jean Baldrige said that the temperatures in the South Cow are so warm that spring Chinook were more likely to occur in Old Cow but that ENTRIX would evaluate habitat in both streams.
- NMFS:* Eric Theiss clarified by asking if ENTRIX was assuming that fall and late fall Chinook get past the Canyon.
- ENTRIX:* Jean Baldrige said that all of the reach would be evaluated to see if there is potential habitat for the species.
- SWRCB:* Carson Cox asked about the dangers of assuming that the minimum flows in Wagner Canyon were not sufficient enough for salmon to pass. The assumption could be wrong and the minimum flows could be right in the ballpark for the salmon to pass.
- ENTRIX:* Jean Baldrige reiterated that the habitat evaluation in Wagner Canyon would answer a lot of the questions and that if fall Chinook are not found, it will not mean that they cannot be there.
- SWRCB:* A. Britt Fecko reiterated her concerns about the hydrology data and impressed upon the participants how necessary it was to have accurate hydrology information.
- ENTRIX:* Jean Baldrige said that one years worth of data was not going to cure the problem and simulation would still be necessary.
- SWRCB:* A. Britt Fecko said that she just wanted it to go on the record that the existing information, and what ENTRIX is proposing now, may not be enough.
- ENTRIX:* Jean Baldrige said that ENTRIX would face those challenges as PG&E went through the relicensing process.
- USFWS:* Levi Lewis indicated that he was not familiar with the Powers and Orsborn methodology and wondered if it provided a flow relationship.

- IMFS:* Eric Theiss explained that the methodology was still somewhat subjective but that SWRI had taken it and made it less subjective.
- ENTRIX:* Jean Baldrige explained that the Powers and Orsborn methodology gives you an assessment of what the passage barrier is like at other flows.
- USFWS:* Levi Lewis inquired as to whether they actually define a flow.
- ENTRIX:* Jean Baldrige said that they provide the height of the barrier and the size of the jump pool.
- USFWS:* Levi Lewis asked if the flow information was ambiguous.
- NMFS:* Eric Theiss said that it was based on opinion.
- ENTRIX:* Jean Baldrige said that it was a structured opinion and that if a significant barrier was found the participants would be able to make their own assessments.
- SWRCB:* A. Britt Fecko asked if it was possible to do a more quantitative analysis at this point.
- ENTRIX:* Jean Baldrige said that all of the important parameters were being assessed following the guidance of Powers and Orsborn.
- USFWS:* Levi Lewis questioned the fish sampling methodology and wanted to know why both snorkeling and electrofishing were going to be performed since you could not compare the data collected from one method to the other.
- ENTRIX:* Jean Baldrige said that the electrofishing gives a better resolution for resident trout in the Old Cow system and that electrofishing was not allowed with listed anadromous species.
- SWRCB:* A. Britt Fecko thought that Levi Lewis had brought up an excellent point and wondered what the accuracy of snorkeling was and how the information would be interpreted against the electrofishing data.
- ENTRIX:* Jean Baldrige said that you could snorkel the entire system and still not have comparable data between Old Cow and South Cow because of different habitat types.
- USFWS:* Levi Lewis asked if there was a way to compare the information obtained via different methodologies that he was not aware of.
- ENTRIX:* Jean Baldrige stated that the intention was not to compare the electrofishing data to that of the snorkeling. The number of fish per mile was not going to be compared.
- NMFS:* Steve Edmondson clarified the areas that were going to be snorkeled versus electrofished. Snorkeling would be performed up and down stream of South Cow Creek Diversion

Dam. Electrofishing would be performed up and down stream of Kilarc Diversion Dam and the data obtained from either system would not be compared.

NMFS: Eric Theiss thought that a reach could be snorkeled and then electrofished to rate the individual snorkler, as kind of a calibration.

SWRCB: A. Britt Fecko thought this was a good idea and that CDFG had some good stocking numbers that could help with rating the snorkler.

CDFG: Annie Manji said that they had data like that from the forties, but not really anymore.

SWRCB: A. Britt Fecko said that they were stocking Old Cow up until last year and there might be some information to verify accuracy of the snorkeling surveys.

CDFG: Annie Manji said that she would be happy to share whatever data CDFG had.

SWRCB: A. Britt Fecko asked when Tom Payne had done his study.

CDFG: Annie Manji said that she believed it was in 1984 above the PG&E Project area.

ENTRIX: Jean Baldrige said that she thought that project involved the stocking of juvenile Chinook by Coleman.

SWRCB: A. Britt Fecko said that there was a project referenced in the FSCD.

ENTRIX: Jean Baldrige said it was the Morellie Ranch Project from 1984 on the South Cow Creek, which occurred 5 miles upstream of the South Cow Diversion by Atkins Creek.

OTHER STUDIES

USFWS: Levi Lewis discussed the FSCD response letter prepared by USFWS. Mr. Lewis reassured the participants that Kathy Brown was still on the project and her comments addressed the need for some additional studies for:

- Bald Eagle
- Peregrine Falcon
- Northern Spotted Owl
- Willow Flycatcher
- Adding Pacific Fisher to the list
- Looking at Elderberry Bushes for the VELB

ENTRIX: Jean Baldrige said that she knew Janelle Nolan-Summers and Kathy Brown had met before and that Janelle Nolan-Summers would be contacting her. Janelle Nolan-Summers had left the meeting after lunch because she had another meeting to attend.

SWRCB: Carson Cox and A. Britt Fecko said that they had a question about the Foothill Yellow-legged Frog Surveys.

ENTRIX: Jean Baldrige said that she thought that Janelle Nolan- Summers had discussed this with someone at SWRCB and that PG&E's study had reflected an updated version of the protocol.

SWRCB: Carson Cox said that the copy of the protocol that they had was released May 2002.

ENTRIX

& PG&E: Jean Baldrige and Curtis Steitz did not know whether the May 2002 revision was the latest draft.

ACTION ITEM: Get a copy of the latest version of the *Standardized Approach for Habitat Assessments and Visual Encounter Surveys for the Foothill Yellow-Legged Frog* to SWRCB if the protocol has been updated since May 2002. If the protocol has not been updated, check the to see why there is an apparent discrepancy between PG&E's protocol and the standard operating procedures

SWRCB: A. Britt Fecko and Carson Cox were interested to know how many times ENTRIX planned to go out for the amphibian surveys. Carson Cox said that you could get up to four surveys depending on whether you find eggs or not.

PG&E: Curtis Steitz agreed that you could get up to 4 surveys.

SWRCB: Carson Cox asked that this information be clarified in the study plan.

ENTRIX: Jean Baldrige continued with "other studies" and said that PG&E was not going to do an assessment of recreation on private land.

SWRCB: A. Britt Fecko asked if PG&E was consulting with the Cow Creek Watershed Group.

PG&E: Angela Risdon said that they were included in all communications and invited to all of the meetings. Ms. Risdon asked Chip Stalica how many private owners he had to call for access to the Project areas.

PG&E: Chip Stalica said that it was onerous on the Old Cow side, something like 8 or 9, and not so bad on the South Cow side.

CDFG: Annie Manji repeated how important it was for PG&E and CDFG to coordinate efforts because they had to contact all of the private owners for their study purposes as well and multiple calls did not need to be going to the landowners. Annie Manji asked if she could coordinate with Chip Stalica for CDFG's sampling efforts.

PG&E: Angela Risdon thought that was a good idea and that it was always worth calling Chip Stalica if they were planning any field efforts, even just to find out what was going on operationally for safety purposes.

CDFG: Annie Manji asked if there was any plan to evaluate the fish ladder.

ENTRIX: Jean Baldrige said that ENTRIX would be looking at how well the ladder met its performance criteria.

CDFG: Annie Manji asked if the criterion was based on CDFG or NMFS ladder criteria.

ENTRIX: Jean Baldrige said "both".

NMFS: Steve Edmondson said that NMFS did not really have a ladder criterion, just "rules of thumb".

ENTRIX: Jean Baldrige said that ENTRIX was using what they had received from John Mann

NMFS: Steve Edmondson said that even with the information, NMFS would need a fish passage engineer out there to take a look at it.

ENTRIX: Jean Baldrige said that anyone and everyone was welcome and that the participants would be notified when the fieldwork was scheduled.

NMFS: Stacy Li said the sooner that a "dog and pony" show of the Project area was scheduled, the better.

ENTRIX: Jean Baldrige thought that it would be better if there was more water in the system to look at it under different circumstances and make some decisions.

PG&E: Angela Risdon asked if February would be fine with the people who were interested in seeing the Project features and getting an idea of the area. Interested parties should coordinate with Chip Stalica and Curtis Steitz to get the "tour".

ENTRIX: Jean Baldrige said that ENTRIX would generate a schedule for field studies but that it was difficult since some of them are flow dependent. Ms. Baldrige also stated that the information obtained from the programs would also be disseminated.

ACTION ITEM: Generate a schedule of field studies that can be distributed.

USFWS: Levi Lewis said that USFWS was concerned about the 100-feet of dewatered stream reach within the system.

PG&E: Chip Stalica said that it would be costly to revise the system.

USFWS: Levi Lewis said that it was an area that USFWS would be paying particular attention to.

- IMFS:* Eric Theiss asked where the section was.
- ENTRIX:* Jean Baldrige said that it was right below the Kilarc Diversion and at low flow the water goes into the canal and comes out of the bypass release downstream from the diversion.
- CDFG:* Annie Manji wanted to know what the capacity of the diversion canals is.
- PG&E:* Chip Stalica reported that the canal capacity is 52 cfs, releasing 4 cfs, so you could say 56 cfs.
- CDFG:* Annie Manji asked if the spill over the dam (versus release) had ever been measured and what the capacity of the spill over is at the point of diversion.
- ENTRIX:* Jean Baldrige thought there was information on the spill volumes in the work that Dan Kogut and Paul Wisheropp were doing.
- PG&E:* Curtis Steitz asked Chip Stalica if the added water was due to Canyon Creek.
- PG&E:* Chip Stalica did not know what the additional water was from but said that PG&E can never exceed their diversion right anyway.

ACTION ITEM: Clarify the spill volumes with Dan Kogut.

- SWRCB:* Carson Cox asked if the hydrology study would look at the natural variability versus the variability of people turning on and off their diversions, and that it was necessary to look at a natural, unimpaired stream for background information.
- ENTRIX:* Jean Baldrige explained that during the agricultural season the flows that get to PG&E's diversion are known and the water rights above PG&E are also known. With those numbers known it is possible to add back the other diversions. It is not a perfect system but it gives an idea of what is being taken out of the system upstream of the Project.
- SWRCB:* A. Britt Fecko asked if Jean Baldrige had the adjudication information for primary and secondary diverters. Jean Baldrige was given a copy of the table that Mr. Fecko had with her. Table was missing the even numbered pages.
- PG&E:* Chip Stalica added that a conservative approach was good and there is a fair chance that people are over diverting. A question to ask is how to handle two parts of the year on unimpaired flows.
- ENTRIX:* Jean Baldrige asked if there were any additional questions or comments and closed the meeting.

Meeting Adjourned at 3:15 p.m.

ACTION ITEMS

ACTION ITEM: Steve Edmondson of NMFS to provide an outline of NMFS's resource management goals and objectives.

ACTION ITEM: Present the simulated hydrograph information to the Agencies.

ACTION ITEM: Generate a detailed Stream Flow Monitoring gaging plan in consultation with the Agencies.

ACTION ITEM: Mitchell Katzel is to provide additional information on bed load, evaluation of bank erosion, spawning gravels, and channel sedimentation when developing the study plan.

ACTION ITEM: Schedule a trip to the Project area with stakeholders to review and assist with transect selection before flows change.

ACTION ITEM: Provide Agencies with a detailed approach and methodology for the Instream Flow Study.

ACTION ITEM: Set up a site visit for new project participants and other interested individuals prior to scheduling the transect selection.

ACTION ITEM: CDFG to send a map with the areas that have already been surveyed by CDFG, with pictures and coordinates of the absolute barrier. Fieldwork is to be coordinated between ENTRIX and CDFG to avoid duplication of effort.

Action Item: CDFG will provide PG&E/Entrix with sample locations.

ACTION ITEM: Get a copy of the latest version of the *Standardized Approach for Habitat Assessments and Visual Encounter Surveys for the Foothill Yellow-Legged Frog* to SWRCB if the protocol has been updated since May 2002. If the protocol has not been updated, check the to see why there is an apparent discrepancy between PG&E's protocol and the standard operating procedures (i.e., listed two versus three site visits).

ACTION ITEM: Generate a schedule of field studies that can be distributed.

ACTION ITEM: Clarify the spill over volume with Dan Kogut.

cc: Angela Risdon, PG&E
Eric Theiss, NMFS
A. Britt Fecko, SWRCB
Levi Lewis, USFWS (replace Levi's name whoever at FWS is handling this project.
Annie Manji, CDFG