TRANSBOUNDARY GAS GROUP

GENERAL MEETING NOTES

April 29, 1999
Spokane, Washington

1. Greetings, Introductions and Review of the Agenda.

Mark Schneider, co-chair of the TGG, called the meeting to order, then introduced Donna Silverberg, the facilitator for today's meeting. He then led a round of introductions and a review of today's agenda..

The following is a summary (not a verbatim transcript) of the discussion, agreements and work assignments made at the meeting Some documents distributed at the meeting may be too lengthy to routinely attach to the minutes; please contact Schneider at 503/231-2306 to obtain copies of any of the enclosures referenced in these meeting notes.

2. Agreement on the Objectives of the TGG.

Mary Lou Soscia said that, following the last TGG meeting, she, Mark Schneider, Jim Ruff, Bev Raymond and Les Swain had met to discuss the Transboundary Gas Group objectives; the result of this discussion was a TGG fact sheet and participant list (Enclosure A). Soscia suggested that this document might be a starting-point for the discussion of this topic at today's meeting, if the participants feel some discussion is necessary. She asked that any comments on this fact sheet be submitted to her as soon as possible; it is intended as a tool to help tell people about the TGG, she said.

Schneider asked that the other TGG participants talk to the managers within their organizations to ensure that there is full understanding, among all of the participating entities, of what the TGG is all about. We are coming to a point where we will need to take some actions, he said, and all of the various agencies and entities need to be aware of that fact.

Bev Raymond noted that the contents of the fact sheet, in particular the questions and answers, were developed by a small TGG subgroup, and need to be reviewed by the TGG as a whole. Soscia agreed, saying that this fact sheet is very much a draft document, but that it is a good start. Schneider said that at next week's British Columbia/Washington Cooperation Council meeting in Bellingham, he and Les Swain will be briefing the group on TGG activities; it would be very helpful, said Schneider, if the group feels that it would be appropriate for us to distribute the fact sheet at that meeting.

Are you asking for feedback at today's meeting? Silverberg asked. Yes, if anyone has immediate comments or concerns, Soscia replied, but if everyone can provide their detailed comments prior to next Wednesday, I can incorporate them into the fact sheet prior to the Bellingham meeting. She asked that comments on the fact sheet be emailed to her at soscia.marylou@epa.gov.

Various meeting participants offered comments and concerns; one participant noted that the enthusiasm of the Biological Research subcommittee, initially high, has been quashed by recent events. There are obviously some issues that need to be resolved on the American side, she said. I'm disappointed that the enthusiasm of the Biological Effects work group has been damaged, said Schneider, because they have a lot of valuable input to offer this group.

Schneider noted that NMFS is largely responsible for the Biological Opinion spill program in the Lower Snake and Columbia Rivers; the purpose of that spill program is to help migrating smolts pass the mainstem dams.

Because that spill is voluntary, said Schneider, it was necessary for NMFS to set TDG threshold at which action would be taken. Those levels were 120% TDG in the project tailrace and 115% at the forebay of the next project downstream. Obviously, those levels are higher than the 110% Clean Water Act standard, he said, which meant that NMFS was taking something of a risk; to minimize that risk, NMFS also established physical and biological monitoring programs during the spring and summer spill programs. If the thresholds established in those monitoring plans are exceeded, he explained, then actions will be taken to curtail voluntary spill.

Schneider noted that the thresholds in the physical and biological monitoring programs were established based on existing research; in a few cases, some additional research was needed. That research was done, he said, and NMFS felt that there was now sufficient information to establish that those thresholds were in fact reasonable. That left the question of whether or not any additional research was needed in support of the voluntary spill program; three different U.S. groups, including the Dissolved Gas Team, the Columbia Basin Fish and Wildlife Authority and the Independent Scientific Advisory Board, came to the same conclusion: that there are still valid scientific questions related to the biological effects of TDG that could be addressed through further research. However, from NMFS' point of view, those questions were not essential to the safe and effective management of the spill program. There are two specific areas where NMFS feels more research is needed, said Schneider; one has to do with the effects of dissolved gas on adult migrants, and the other has to do with potential physical injury of fish associated with gas abatement structures and operations.

Essentially, said Schneider, NMFS now feels it has demonstrated that the Biological Opinion spill program is safe and effective for juvenile migrants, and the focus of most of the funding on the U.S. side of the border is the gas abatement program itself, rather than further research.

To clarify, said Faith Ruffing, are you saying that, since the Biological Opinion was signed, research has shown that the fish are safe at 115% TDG forebay and 120% TDG tailrace? I would put it a little differently, Schneider replied – since the BiOp was implemented, we have

seen a couple of spill patterns that have tested the criteria in the BiOp. In 1996, when we didn't have a lot of involuntary spill, dissolved gas went up to 120% during the freshet and stayed there -- the graphs are as flat as a pool table. During that period, the amount of observed gas bubble trauma was negligible. In 1997, flows and spill were very high; we saw TDG levels of up to 140% at some projects. However, despite the fact that we have seen some signs of GBT at those higher TDG levels, they have not exceeded the action levels set in the BiOp.

The group devoted a few minutes of additional discussion to the validity of the NMFS biological monitoring program, with various participants pointing out potential flaws -- increased predation, chronic or delayed effects, mortality before the fish reach the monitoring sites etc. Ultimately, Jack Gakstatter observed that he does not want people to leave today's meeting with the impression that NMFS or EPA consider TDG levels of 130%-140% safe for migrating smolts -- we don't, he said. When the waiver levels of 120% tailrace and 115% forebay were established, the decision was an educated guess that, at those levels, the benefits would outweigh the risk. I absolutely agree, Schneider said.

He added that NMFS has developed a fasttrack gas abatement program, which the Corps is now aggressively implementing. The goal of the gas fasttrack program is to implement dissolved gas abatement measures at all projects that need them, as soon as possible.

Ultimately, Silverberg reiterated her suggestion that this may be a more appropriate topic for small-group discussion, given the fact that this item had now run well over the time allotted to it in the agenda. Any objections? she asked. Raymond observed that the issue needs to be resolved, because there are some in the TGG who would not agree with the statement, in the Q & A section of the fact sheet, that "The ISAB, the Council, NMFS, EPA and other federal agencies in the U.S. concluded that additional biological studies are not necessary for continuing the U.S. gas abatement program." This issue needs to be resolved before this is presented as a TGG-approved document, she said.

What I'm hearing, then, is that this statement is the biggest problem, Silverberg said. Other meeting participants discussed potential revisions to this statement so that it more accurately reflects the feelings of the TGG. Ultimately, Silverberg suggested that the fact sheet be edited to remove the above language, and that additional language, highlighting the uncertainty and disagreement surrounding the question of further TDG-related biological research, be inserted.

In response to a question, Jim Ruff said the Power Planning Council does not necessarily believe that no additional biological research is needed; however, it is a question of financial priority, and what the ISAB recommended is that the funding priority should be on actual gas abatement measures. There is TDG-related biological research that needs to be done, he said; in particular, research into the mechanical injury of fish passing over flow deflectors.

This is obviously a controversial issue, and I don't think we can resolve it today, Soscia said. Basically, the intent of this statement was to clearly state that EPA is not interested in funding research that will call the 110% standard into question. However, EPA does feel there is some additional biological research that could be done, if funds were available. She said she will

rewrite the fact sheet to address the concerns raised at today's meeting, adding that she will work on the document during lunch, then share the revised language with the group later in today's meeting. It was so agreed.

After lunch, Soscia suggested the following modified language for inclusion in the TGG fact sheet:

"The ISAB, the Council, NMFS, EPA and other federal agencies in the U.S. concluded that U.S. Columbia River funding priorities should focus in the near term on gas abatement over biological effects monitoring and research. The Biological Effects and Research workgroup could serve a valuable purpose by providing a bibliography and a prioritized inventory of biological studies and required research. This list could be used by agencies with a mandate in these areas and resources that can be applied, and would also be useful for Canadian priority setting.

"There may be opportunities to fund future TDG biological uncertainty research. However, at this time, it seems unlikely that further U.S. dissolved gas research on water quality standard will be funded. In addition, as the TGG identifies dissolved gas hot spots and structural and operational abatement options, biological effects and benefits will need to be considered and evaluated on a site-specific basis. This consideration and evaluation, including modeling, will best be given by the Biological Effects and Research workgroup."

No objections were raised to these revisions.

3. Short-Term Operational TDG Abatement.

Patti Stone led this discussion, explaining that this issue was placed on the agenda in response to an email she sent to the Steering Committee after the last TGG meeting. She said that, while they have not yet been able to convene a group to develop a specific proposal, the Structural and Operational Abatement Work Group feels that short-term operational TDG abatement must be included in the TGG work plan. Stone noted that this is going to be a difficult and contentious issue, for a number of reasons.

First, she said, the hydropower operators will need to be at the table, if operational recommendations at specific projects are to be developed and analyzed. Second, some operational elements are already covered in current federal management plans. Third, Canadian interests are not well-represented on this committee. Fourth, there has to be some sort of incentive or compensation to bring project operators to the table to work on these issues. Finally, some of the work group members have observed that, while there are operational measures that could be implemented to abate gas, they will not be implemented until there is some concrete incentive to do so.

Stone asked for the Steering Committee's input on this concept. We have discussed this issue in the steering committee, Ruff replied; he noted that the Technical Management Team, as part of its annual work, has developed a water management plan and spill priority list. Are you suggesting that the TGG needs to develop a subgroup to address this issue which includes more

of the operating agencies? he asked. Probably a more fundamental question is, how do we get all of the hydro operators in the basin to the table, and encourage them to recognize the importance of this issue? said another participant.

Chris Pinney described some of the operational measures that have been undertaken to reduce TDG at Little Goose, Lower Monumental and Ice Harbor Dams; he observed that the operational measures to reduce TDG are limited at the mainstem projects, because of the spill volumes mandated by the Biological Opinion. It may be possible to do some things higher up in the basin, he said, but in the Lower Snake and Columbia, we're severely constrained by the BiOp criteria.

Les Swain suggested that, on the Canadian side of the border, short-term operational measures to control TDG production could be addressed by the CRIEMP monitoring program's oversight team; this might be a good forum in which to bring the Canadian operators to the table, he said.

Ed Schallenberger of Columbia River Fish Farms said he has observed spill events that killed resident fish in the Columbia in 1993, 1996, 1997 and 1998; many of those spill events were due to human error. We have made progress, he said, but we're fooling ourselves if we think we're doing everything we can, operationally, to abate gas.

After a few minutes of additional discussion, Silverberg suggested that this may be an issue that should receive further consideration from the TGG's Structural and Operational work group. Soscia agreed that this is a timely issue, adding that it is already being discussed by the U.S. Federal agencies. We recognize that the participant list for that effort needs to be broadened, she said; our hope is to develop a some basic ideas, then reach out to a broader group. It would be a good idea to try to connect the U.S. federal group that is discussing this issue with the Structural and Operational Abatement work group, Soscia suggested. In response to a question, Soscia said she will work with Keith Binkley to get the right parties to the table, then report back to the full TGG at the next meeting of this group.

Does that answer your concerns? Silverberg asked. I think it's a good start, Stone replied.

4. Scope of Systemwide Gas Abatement Study Plan.

Keith Binkley of Seattle City Light led this discussion, beginning with his list of priorities for the projects needing structural and operational gas abatement. He distributed a handout, detailing his project selection criteria and the process the Structural and Operational work group used to winnow the original list of 89 projects down to the current list of 58 dams – eight on the Kootenai, three on the Upper Columbia, 10 on the Pend Oreille, one on the Chelan, two on the Spokane, seven in the Mid-Columbia, 20 on the Snake, three on the Yakima and four on the Lower Columbia. Binkley's handout is attached as Enclosure C.

Binkley explained that the initial list of 89 dams included all projects in the Columbia Basin with storage capacities in excess of 100 KAF or power generation capability in excess of

40 MW. The initial list of 89 dams was then reduced to the 72 dams located along the mainstem and in tributaries upstream of Bonneville. The committee then eliminated 14 dams from the list, because they are not TDG producers. This left a more manageable list of 58 dams that we felt this effort should focus on, Binkley said.

Binkley then described his efforts to rank the 58 projects on the list in terms of their priority for detailed investigation of gas abatement measures: a combination of the storage capacity, structural height, ratio of peak flow to hydraulic capacity, month of highest flow and spillway capacity for each of the projects on the list. The rankings assigned to each project are detailed in Agenda Item 5b, below.

What's the purpose of this exercise? asked one meeting participant. There are over 200 projects in the system, Binkley replied – as a first step, we need to figure out where our structural and operational gas abatement study priorities should be.

Various meeting participants offered questions and suggestions about the project priorities list and criteria; Binkley asked that any additional suggestions about projects that should be added to or deleted from the list should be provided to him as soon as possible. Bev Raymond said the intent of this agenda item was to reach agreement on the project selection criteria to be used by all of the subgroups – to try to develop a uniform list of criteria. Based on today's discussion, she said, it's clear that it may not be possible to do that at today's meeting. Raymond added that an extensive array of information has been generated about the operations and physical specifications of many of the dams in the system, and suggested that it may be useful to compile all of this project-specific information into a table, to be circulated among the various work groups. It was so agreed.

5. Study Plan Update.

A. Monitoring and Information Sharing. Andrea Ryan said this work group has just finished a "somewhat final" draft of its portion of the study plan, and is in the process of circulating the draft to the full TGG for review. She went briefly through the main elements of the Monitoring and Information Sharing study plan, touching on some of the areas reviewers should focus on with particular attention: tables detailing the purpose, project operator and contact person for each dam in the basin, as well as what monitoring data has been collected at each of the dams. She asked everyone in the TGG to look these tables over carefully, to ensure that they are as complete as possible.

The second part of the study plan asked the group to consider where we need to go from here, Ryan continued. One of the things that needs to happen is the development of a physical data report, reviewing all of the data collected to date, what we've learned from it and how it might be used. Also, in cooperation with the other work groups, we need to develop a list of data needs, Ryan said. We are also attempting to develop criteria for project selection, she added; many will be the same as those suggested by Keith Binkley, but we will need some additional ones as well. Again, Ryan encouraged the other TGG participants to look at the list of

monitoring and information sharing criteria, and provide any comments they may have to her as soon as possible.

Ryan added that this work group's efforts will eventually include the development of a list of TDG hot spots in the basin, as well as a plan for data storage and information sharing – a centralized database and repository of all of the dissolved gas data in the region.

B. Structural and Operational Abatement. Binkley reported that, since the last TGG meeting, the Structural and Operational Abatement work group has continued to gather information about the dams on the prioritization list; he went through some of the upcoming tasks facing this group, including the continued gathering of available and new technical information and an extensive literature review.

Once this information-gathering work is complete, Binkley continued, the work group will be integrating the data with the modeling and monitoring efforts. He said that, in his opinion, the Structural and Operational Abatement work group does not have sufficient knowledge to make operational recommendations, especially when all of the hydro operators are not at the table. In terms of work group needs, Binkley said funds are at the top of the list; it will cost $20,000-$25,000 to finish this portion of the study plan.

Binkley then went back to his list of dams meeting the initial TDG screening criteria, by reach, with ranking scores attached. The highest reach priorities, based on those initial screenings, are the Upper Columbia, the Pend Oreille, the Mid-Columbia and Lower Columbia. He also shared the work group's list of the highest priorities, by project; Libby, Bonneville, John Day, McNary, Little Goose, Chief Joseph, Wanapum, Albeni Falls, Mica, Revelstoke, Hells Canyon, Boundary, Brownlee and Grand Coulee are the highest priorities, at least according to this initial screening. One participant observed that Libby Dam does not spill; no spill has occurred at that project in the past 16 years, so it can probably be taken off the list.

C. Modeling. Julia Beatty of the B.C. Ministry of the Environment led this discussion, explaining that the modeling subgroup has developed an executive summary of their activities so far. She spent a few minutes reading sections of this document, touching on the complexities of modeling TDG exposure, noting that the work group has identified the need for a model that can incorporate flow, dissolved gas production and transport and dynamic gas bubble trauma dose response information, to produce an estimate of mortality in various aquatic populations in response to a wide range of in-river conditions.

Beatty went through some of the models evaluated to date by the Modeling work group, including the various one- and two-dimensional Corps' TDG models, which were designed to assess the biological benefits of gas abatement activities. She said the Modeling work group has identified a variety of physically-based and biologically-based objectives, data gaps and research needs, and has also developed a number of recommendations:

- The initial systemwide assessment model should be a one-dimensional model, incorporating dissolved gas transport and water temperature data; this model should be linked to a dynamic gas bubble trauma dose response model to assess TDG impacts on

various aquatic species.

- The model should provide a means to rank various TDG mitigation alternatives on a systemwide basis.
- The models can be implemented in a phased approach, starting with the best available data, then refined in the future as additional physical and biological data are collected.
- For specific reservoirs and river reaches, a depth-average two-dimensional model can be applied to assess lateral movement of total dissolved gas plumes, where vertical variation in TDG levels is small. Width-average two-dimensional models may be needed if vertical TDG levels vary significantly.

Ruff provided a few changes, developed by Marshall Richmond, for the Modeling subgroup's executive summary. Soscia then spoke briefly about the plans for the EPA dissolved gas model; EPA has committed to developing this model, she said, but pretty much all we've done on that so far is scoping -- we're still finishing up our temperature model. Soscia noted that, since the last TGG meeting, Marshall Richmond and John Yearsley have met to discuss the EPA model development, as was suggested at the last meeting of this group. In response to a question, Soscia said the intent of the EPA temperature model is to build on, not duplicate, what has been done in the past.

Binkley observed that it might be useful to this effort to visit all of the USGS tramways and bridge crossings in the system to conduct a synoptic-type survey; he said that, given the expected high flows in 1999, there is a potential to collect some very valuable data, and suggested that it may make sense to put some money into collecting this data in 1999. In the course of a week or so, it would be possible to visit many of these sites, drop a probe into the river, and collect an abundance of key spot measurements. Is there any money available to do that type of work, or are we going to lose this opportunity? he asked.

Ruff replied that it is his hope that the project operators and resource agencies who are participating in the TGG effort will be willing to pool their resources, so that some of this additional data-gathering could be accomplished in future years -- that's why we need to finish the TGG study plan, he said. However, it probably isn't going to be possible to do any additional monitoring in 1999, unless the individual project operators decide to place some sensors themselves because they know they'll be spilling this year.

The discussion then turned to the EPA temperature model, with various meeting participants asking detailed questions about EPA's proposed modeling methodology, geographic scope and outputs. Ultimately, Tanovan suggested that the modelers themselves be asked to attend the next TGG meeting, to explain and discuss their chosen approach.

D. Biological Effects and Research. Chris Pinney said much of the Biological Effects update has already been presented in the course of today's meeting; he went briefly through the upcoming tasks facing this work group: the incorporation of some new studies that have become available recently; expanding some of the studies to incorporate additional information on some of the other organisms (invertebrates etc.), and develop a list of BPA-funded studies and Corps-funded survival studies. The group held a conference call on April 19; by June, the group plans to produce the bibliography and an updated version of its study plan. Pinney added that he has

reviewed the CBFWA and DGT dissolved gas research plans, and noted areas of consistency and inconsistency.

In response to a request from Les Swain, Pinney agreed that the Biological Effects and Research work group will develop a prioritized version of the list of studies included in its report, with a rough idea of the cost of each study. Swain explained that, occasionally, his ministry ends the fiscal year with some unspent funds; if he had a list of research project priorities, he might be able to funnel some of that funding in the direction of dissolved gas research.

6. Next Steps and Priorities.

We have discussed the need to integrate the activities of the various TGG subgroups, Silverberg said; we also need to talk about next steps and funding. What we thought we'd do is ask each of the chairs to coordinate with each of the other chairs to see what needs to be done, said Swain. Larry Fidler observed that the primary purpose of the TGG study plan is to provide the project operators with a tool that will allow them to evaluate the effectiveness of various possible gas abatement measures; it seems to me that it's pretty clear how all of this fits together, he said. Ruff observed that there is a need for the Structural and Operational Abatement group to work closely with the monitoring group, because of all of the data needs and data gaps that exist in these areas. The whole idea behind this effort is to reduce gas on a systemwide, rather than a project-by-project, basis, hence the need for close coordination, he said.

Faith Ruffing suggested that one thing the project chairs probably need to work on is the set of physical and biological criteria. Anyone object to proceeding in that way? Silverberg asked. Are you talking about the list of criteria to select the dams we're going to focus on, or is it broader than that? Ruff asked. We have 125 dams in the system, Ruffing replied; the Monitoring group has developed a list of criteria to help us determine which dams should be included in the big study; the Structural and Operational Gas abatement group has also developed a set of project selection criteria, some of which overlap with the Monitoring group's criteria. There is a need to develop an integrated set of criteria; once we pull that together, the group will be able to look at all of the projects and select and reject them, based on criteria and reasons everyone has agreed to, she said. It's an important step, from the standpoint of developing a systematic approach. And you're suggesting that this list of criteria is an appropriate thing for the co-chairs to work on? Silverberg asked. Yes, Ruffing replied.

Soscia distributed Enclosure E, a draft schedule showing a potential timeline for upcoming TGG activities, and the connections between the activities of the various TGG workgroups. Among the highlights:

Biological Effects/Research:

- Bibliography (June '99)
- Briefing Paper (June '99)
- Detailed Research Paper (?)

Abatement:

- Compilation of Technical Specifications for All Dams (September '99)
- Monitoring Programs in Place for all Major Dams (March '00)
- Site-By-Site Statistical Evaluation (June '00)
- Level One Prioritization, Identification of Hot Spots (September '00)
- Operational Tests (June '00)
- Optimal Spill Operations Defined By Facility (September '00)
- Level Two Prioritization, Identify Hot Reaches (September '02)

Modeling

- All Reach Modeling Initiated (March '02)
- All Reaches Modeled (September '02)
- Systemwide Modeling Initiated (September '02)

Monitoring:

- Identify Existing TDG Data (June '99)
- Identify Data Gaps (September '99)
- Reach Monitoring Complete (June '01)
- Systemwide Monitoring Complete (June '02)

This is primarily FYI, Soscia said; we don't need to get into a lengthy discussion on it today, but if you have any comments, please provide them to me soon.

Next, Swain discussed funding for the TGG effort. What we've been thinking, he said, is that we need a prioritized list of studies associated with each of the work groups, together with an idea of their cost, so that when funds become available, we'll be ready to go to an RFP process and let contracts. Ruff added that, while the steering committee appreciates all of the time and effort the various contractors have contributed to the TGG effort so far, they do not feel that it would be appropriate for those contractors to participate in the development of the detailed time and cost estimates for these projects, if they intend to bid on the work. If they don't intend to bid on the work, then their input and expertise would be welcome in developing these statements of work. That's standard operating procedure, at least on the U.S. side, he said.

Various participants raised the concern that, without input from these potential bidders, it will be difficult to generate accurate cost estimates. Bill Duncan suggested that it may be appropriate to develop a more general scope for each project, and ask the contractors to come back with a detailed bid. Swain observed that these research project priorities and cost estimates are the essence and the substance of the TGG study plan and future direction.

Ruff noted that some of the work groups have told the steering committee that there are various elements of their study plans that cannot be refined further unless some funding is made

available. The problem is that it is going to be difficult for any of us to go to our agencies and request funds if we can't tell them exactly what that money is going to be used for, in terms of a final product, he said. We're looking for some details on exactly what these products are going to be, how long it will take to do this work, and how much it will cost.

Soscia noted the importance of having both short-term and long-term goals for the TGG effort; Beatty suggested that each subgroup develop a list of things they can do immediately to address data gaps or information-sharing needs over the short term, together with priorities and cost estimates. We could then take those lists and discuss priorities and objectives as a group, Ruff said -- that's the first step in that process if a comprehensive list of priorities is to be developed.

Silverberg summarized the next steps and work assignments arising from this afternoon's discussion as follows:

1. Develop list of short-term and long-term data gaps
2. Prioritize studies etc.
3. Cost estimates
4. Subgroup co-chairs to integrate activities etc.
5. Take list of subgroup priorities to the steering committee
6. Full group discussion of priorities list
7. Obtain a small amount of funding to begin development of RFPs.

Tanovan made the point that the TGG needs to obtain the endorsement of each of its participating agencies before they seek a pot of funds for RFP development; Beatty observed that the development of short-term and long-term activities lists and associated cost estimates will be crucial to getting funding from the Canadian side. Keith Underwood added that regional ground-truthing of the TGG effort is also needed, to ensure that the group is developing work products that are going to be of value to the region.

Given the fact that the next scheduled meeting of the TGG was set for September 30, the group then set some interim work deadlines:

- Work group drafts due: June 30
- Subgroup chairs' integration meeting (to be organized by Chris Pinney, some time before June 30, meeting date TBD)
- TGG Steering Committee to meet (end of July) to combine and distribute product of the integration meeting and work group project prioritization process.
- Operation subgroup – Mid-June (Beatty, Soscia, Binkley)

7. Other.

A. Update on Canadian Actions. Beatty distributed a list of CRIEMP Columbia/Kootenay TGP monitoring activities, and spent a few minutes going through its contents. Beatty's handout is attached as Enclosure F; please see this document for details of the

Canadian monitoring program. She asked any other TGG participants who have spare TDG monitors to contact her as soon as possible – two data loggers and one portable monitor are needed to complete the monitoring program this summer.

B. Update on Corps Actions. Tanovan said the Corps has prepared its annual dissolved gas report, describing its dissolved-gas related activities last year; it also contains some modeling results that may be of interest to the TGG. The report is now available on the Corps of Engineers web page. Tanovan added that the 1999 spill and TDG management plans, which outline the Corps' planned activities for this year, are also available on the Corps homepage.

On the operational side, Tanovan said, the first dissolved gas-related issue of 1999 has now surfaced; there are some problems with the spill program at Ice Harbor Dam in 1999. The Corps is spilling the same volume that, in years past, has produced 120% TDG at that project; however, for some reason, that volume is not producing 120% TDG this year, which is a source of concern in the region. Some would like the Corps to simply ratchet up spill until 120% TDG is achieved, but it may not be that simple, Tanovan said -- we'll keep you posted. Tanovan also touched on recent activities in the Corps' DGAS program, noting that work is proceeding slowly; he also briefly described the Corps' 1999 TDG modeling plans.

Tanovan then yielded the floor to Marian Valentine of the Corps' Seattle District office, who spent a few minutes briefing the group on the Chief Joseph/Grand Coulee gas abatement study, and the planned Chief Joseph spill test. Valentine described the evolution of dissolved gas abatement at Chief Joseph Dam as follows:

- Initial appraisal report: May 1998
- Screening Document: November 1998
- Plan of study: April 1999
- CHJ – stand-alone
- Systemwide TGG
- CHJ – stand-alone: Deflectors, near-field study, physical model studies)
- Side Channel
- CHJ/GCL Joint Study: System Evaluation, numerical model

Valentine described the work products available to date from this effort; she noted that an information packet on this effort is available, and asked anyone who is interested in obtaining a copy to contact her at 206/764-3543 or via email at marian.l.valentine@usace.army.mil. .

8. Next TGG Meeting Date and Agenda Items.

The next meeting of the Transboundary Gas Group was tentatively set for Nelson, B.C. on Thursday, September 30. Portland or Seattle were selected as possible backup sites. Meeting notes prepared by Jeff Kuechle, BPA contractor

TRANSBOUNDARY GAS GROUP ATTENDANCE LIST
Spokane, Washington, April 29, 1999

Name	Affiliation	Phone	email
Bob D. Anderson	Avista Corp.	509/495-4487	banderson@ avistacorp.com
Julia Beatty	BC Environment	250/354-6752	jbeatty@nelson.env. gov.bc.ca
Jim Bellatty	Idaho DEQ	208/799-4370	jbellatt@deq.state.id.u s
Scott Bettin	BPA	503/230-4573	swbettin@bpa.gov
Keith Binkley	Seattle City Light	206/386-4592	KEITH.BINKLEY@c i.seattle.wa.us
Gary Birch	B.C. Hydro	250/365-4569	gary.birch@bchydro. Loc.ca
Bill Duncan	Cominco Ltd.	250/364-4336	bduncan@Trail. Cominco.com
Larry Fidler	Aspen Applied Sciences	250/426-7549	
Tom Foeller	BPA	503/230-3622	trfoeller@bpa.gov
Jack Gakstatter	EPA	503/326-2710	
Tony Grover	WDOE	509/456-6149	agro461@ecy.wa.. gov
Scott Hall	Kalispel Tribe	509/445-1147	shall@knrd.org
Russell Harding	Oregon DEQ	503/229-5284	
George Kosowan	West Kootenay Power	250/359-0707	gkosowan@wkpower. com
Jeff Kuechle	BPA contractor	503/203-1284	jeffku@teleport.com
Chris Maynard	WDOE	360/407-6484	cmay461@ecy.wa. gov
Bernice Miller	Aspen Applied Sciences	250/426-7549	
Monte Miller	Colville Tribe	509/634-2119	lrmpbio@televar.com
Jim Milton	WDOE	509/575-2434	smil461@ecy.wa. .gov
Gary Passmore	Colville Confederated Tribes	509/534-2426	

Andy Perleberg	Chelan County PUD	509/663-8121	andrewb@chelanpud.org
Chris Pinney	COE	509/527-7284	
Bev Raymond	EC	604/664-4053	
John Ritchie	Acres International	604/683-9141	JRITCHIE@ACRES.COM
Jim Ruff	NW Power Planning Commission	503/222-5161	jruff@nwppc.org
Faith Ruffing	SMR	503/256-8748	fruffing@gte.net
Andrea Ryan	EC	604/664-4001	andrea.ryan@ec.gc.ca
Dana Schmidt	RL&L	250/365-0344	DSCHMIDT@RLL.CA
Mark Schneider	NMFS	503/231-2306	Mark.Schneider@noaa..gov
Ed Shallenberger	Col. R. Fish Farm	509/634-4228	edcrff@televar.com
Donna Silverberg	Facilitator	503/248-4703	dsilverberg@cnnw.net
Brett Smith	USGS	509/353-2633	BASmith@usgs.gov
Mary Lou Soscia	U.S. EPA	503/326-5873	soscia.marylou@epa.gov
Patti Stone	Colville Confederated Tribes	509/634-2415	stonewq@televar.com
Les Swain	B.C. Ministry of the Environment	250/387-4227	lswain@epdivi.env.gov.bc.ca
Bolyvong Tanovan	USACE	503/808-3938	bolyvong.s.tanovan@usace.army.mil
Mary Todd Uhlir	USACE	503/808-3939	mary.t.uhlir@usace.Army.mil
Keith Underwood	Spokane Tribe	509/258-7080	KeithU@ica.com
Nancy Yun	USACE	503/808-3937	nancy.yun@usace.army.mil
Dave Zimmer	USBR	208/378-5088	