



COLUMBIA RIVER INTER-TRIBAL FISH COMMISSION

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CRITFC's Responses to Questions Posed by the Council's March 14 Solicitation for Mainstem Recommendations June 15, 2001

We are pleased to offer the following responses to questions identified in the Council's solicitation.

Relationship of These Amendments to the Biological Opinions of the National Marine Fisheries Service and the U.S. Fish and Wildlife Service.

1. The Operations Specified in the Biological Opinions do not Satisfy the Multi-Species Mitigation Requirements of the Northwest Power Act.

The Commission does not support the Biological Opinion of the National Marine Fisheries Service regarding the FCRPS. Our comments on the hydropower provisions of the draft Biological Opinion are attached. The attached criticisms pertain equally to the final BiOp, since little was changed between the draft and the final. Our major criticisms may be summarized as follows:

- The BiOp's assessment of biological effects is overly optimistic and suffers other flaws. It does not include an accurate analysis of likely biological outcomes based on currently available information.
- The BiOp does not go far enough in its operational measures, particularly with regard to flow and spill.
- The requirements for fish passage structural measures at various dams rely too heavily on outmoded screening technology and development of new structural technologies.
- The BiOp does not effectively assure compliance with the Clean Water Act.
- The BiOp should have moved forward more aggressively with Snake River dam breaching.
- The BiOp's procedures for implementing its requirements, e.g. the TMT, Implementation Team, Executive Committee process, have not effectively addressed the tribes' concerns in annual decision making.

We believe that these flaws, and others not mentioned here, will render the BiOp invalid as failing to assure the survival and recovery of the listed salmon.¹ As such, the BiOp does not

¹ At this time, the Commission's member tribes are considering their litigation options regarding the complaint filed as *National Wildlife Federation, et al. v. National Marine Fisheries Service*, on May 2, 2001 in the U.S. District Court of Oregon.

fulfill the requirements of the Northwest Power Act, which set different and higher standards for rebuilding the fish and wildlife affected by the development and operation of the hydrosystem.

Additionally, the BiOp does not address biologically necessary actions for species not listed under the Endangered Species Act, e.g. Hanford Reach fall chinook and lamprey. The Council's Program must address all the species "affected by development and operation" of the hydrosystem, not just listed species. As our comments and recommendations point out, the extended length screen technologies proposed by NMFS are inconsistent with biological requirements of lamprey. Furthermore, the BiOp's operations for chum have exacerbated migration conditions for listed and non-listed salmonids in 2001. We address these issues in our recommendations and attachments.

2. What should the NPPC Recommend for Changes to the Biological Opinions?

We would urge the Council to accept our recommendations for amendments to the Program. Where our recommendations differ with those measures set forth in the BiOp, we believe that our view of the science and law would support adoption of the recommended changes to the Program and we urge the Council to carefully consider the substance of our recommendations, regardless of the specifics of the NMFS BiOp. We do not believe that any differences between the Tribes and the National Marine Fisheries Service empowers the NPPC as a matter of law to simply pick and choose among the recommendations it receives from the regions' fish and wildlife managers. This is not the role that Congress envisioned for the Council and the Council should refrain from this role. Rather the Council must craft a Program that meets all of the requirements of the Act, including all of the requirements of section 4(h)(6) of the Act.

Moreover, the Council's Program must restore salmon to the levels needed to support tribal fisheries. The Columbia River treaty tribes reserved the right to fish at all usual and accustomed fishing stations "in common with" the citizens of the United States. The fishing right means more than the right of Indians to hang a net in an empty river.² However, Columbia River runs of sockeye, coho, and spring, summer, and fall chinook have declined drastically since the mid-1800's.³ Where once the Columbia produced annual runs of at least 10-16 million salmon, its runs are now diminished to tens of thousands. Of this overall loss, the Northwest Power Planning Council determined that the development and operation of the hydrosystem is responsible for the loss of 5-11 million salmon.

In the interest of salmon conservation, the tribes have voluntarily forgone commercial fisheries on summer chinook since 1964. Yet, since 1964 when the tribes closed their commercial summer chinook fishery, massive hydropower development was completed in the Columbia Basin, including the Canadian Treaty storage projects, John Day Dam, and three of the four Lower Snake River dams. Now the recovery picture for Snake River salmon is dominated by hydropower and restricting tribal fisheries even further has only "token" value.

² Washington v. Washington State Commercial Passenger Fishing Vessel Association,, 443 U.S. 658, 679 (1979).

³ A run is the annual return of adult salmon and steelhead trout. Total runs include those fish that are harvested prior to reaching any dams. See *Generally*, U.S. COMPTROLLER GENERAL, HYDROELECTRIC DAMS: ISSUES SURROUNDING COLUMBIA RIVER BASIN JUVENILE FISH BYPASSES, H.R. Rep. No. 90-180, at 8 (1990).

The costs of operating the hydropower system must be internalized and not shifted to the tribes or the regions' salmon resources. From the tribes' perspective, the environmental baseline for their fisheries and the standards for resource restoration and protection were set under the treaties with the United States in 1855.

The tribes look forward to restoration of sustainable fisheries at all their usual and accustomed fishing stations, not simply rebuilding salmon populations to keep them at the brink of extinction for decades to come. For the Commission's member tribes and the United States, this obligation is over-arching. The responsibility of the United States is not simply to avoid jeopardizing the continued existence of salmon stocks listed under the ESA. Rather the United States has a higher duty. It must restore salmon runs to support its treaty commitments. Where the United States can not successfully assure the long term existence of the salmon, by meeting a jeopardy standard under the ESA, the United States will surely fail to restore salmon to support our treaty fisheries.

We do not believe that the NMFS BiOp's reliance on continued severe and further restrictions in tribal fisheries is biologically warranted or lawful. As the CRITFC/ESSA report points out, further limitations in harvest will have little effect on the long term status of listed Snake River salmon populations. CRITFC/ESSA Report App. G, Table G-2. We have recommended that the Council not rely on further harvest limits, including those of the BiOp, in lieu of taking those actions in the other "H's," particularly the hydropower "H," to recover and rebuild salmon to harvestable populations.

3. Flexibility and Adaptive Management.

As we discuss further in the sections below on power supply considerations, we believe that the flexibility of the hydropower system, and related water management should be exercised to rebuild salmon, not the other way around. We believe that the Council's recent recommendations to forego spring and possibly summer spill operations is contrary to how the flexibility of the hydropower system, and related flexibility of the BiOp, should be utilized.

Power Supply Considerations and Long Term Objectives and Strategies for the Mainstem

Whenever we face a power crisis, concerns about Columbia River salmon are put on the back burner until the crisis passes. Arguments are made that the region or the federal government cannot let people do without or pay higher costs for electricity, businesses must not suffer losses or fail, etc. However, it is possible to plan now to avert future crises. If we do not develop a strategy to protect the environment by creating a robust energy system, we will leave somebody at risk. In our unplanned response to the latest crisis, tribes have been left vulnerable to emergency power system operations that further erode the natural resources they rely on. We believe that appropriate planning of system resources can leave us with a robust system that can withstand most unknown future events.

CRITFC's draft *Energy Vision for the Columbia River* attached lays out critical concerns with the existing electric energy system in the Northwest and defines a systematic approach to address these concerns. After establishing this context, it discusses the unique position of tribes in terms of their own energy needs and their ability to contribute to regional solutions. The following recommendations and comments reflect the technical information presented in this document. These recommendations do not appear in the line by line mark-up, but are intended by CRITFC to be included in the amended Program.

1. Bonneville shall fund at least 100 megawatts of pilot projects of distributed generation (DG) resources development over the next two years. The projects should be designed to be dispatched remotely to serve peak loads and to protect fish spill.

Justification:

The low dollar cost of hydropower does not include in it the huge economic and cultural costs that have been incurred by tribes who based their living on the resources, including fish and water quality, the rivers had provided throughout the long histories of the tribes. The costs to tribes represent a clear and classical case of negative externalities. Because these non-market resources have not been disciplined by prices, they have been used and abused as if their cost were zero and their availability limitless. They are not.

Because of habit or failure to do analyses and take appropriate action, the region has continued to use the river to supply energy services that harm fish and water quality that can be supplied much more cheaply through other technologies and operational strategies. Using the river to supply peaking power dramatically harms fish and is more costly to ratepayers than other options.

The ability to ramp the hydropower system up and down easily has resulted in its being used to serve peak loads. Unfortunately, when the hydropower system is used in this way, it often conflicts with the needs of salmon. When river elevations are lowered, redds can be dried out and smolts can be stranded on riverbanks with no ability to get back to the river. When water velocities are reduced juvenile and adult salmon migrations are impacted, by the cumulative effects of delays at critical life stages (e.g. smoltification), elevated temperatures, increased exposure to predators, and disorientation. In both instances, the result is fewer fish, and more emphasis, with the attendant costs, on mitigation. This dewatering of the river can harm fish from about mid-November through mid-June. But, the winter months are our peak load season. So there is a conflict, but as we will argue below, there should not be.

Proponents of using the hydropower system to follow peak loads argue that it is the lowest-cost option to do so, and that the fish lost in the process is an acceptable tradeoff. However, it is a myth⁴ that using the hydropower system in this way is a low-cost way to meet peak loads. Serving peak loads from any central station, distant plant (including hydropower) is expensive; we believe it to be far more expensive than other similarly reliable ways to meet peak loads. Even without considering the huge costs imposed on fish and wildlife from raising and lowering

⁴ The myth has been perpetuated by average cost pricing of T&D. That is, all loads pay the same price for T&D, regardless of whether the T&D system is partially or fully loaded at time of use.

river levels to serve peak loads, alternative means of serving peak loads are cheaper than using hydropower and incurring the associated transmission and distribution (T&D) costs. We believe that it is irresponsible to habitually use the river to serve peaks.

Distributed generation is a far more cost-efficient method of supplying peak power and, when sited within industrial complexes and residential and commercial buildings, will take pressure off of the T&D system, the hydropower system, and fish and wildlife. Interconnection standards⁵ will have to be devised by utilities that allow for the safe operation of these local generators, and they will have to be deployed in sufficient number to eliminate the need for backup generation and T&D capacity. Generation sited closer to loads will allow for the use of waste heat from the generation process to be utilized for process heat, space heating, or hot water heating. Today, most of this heat is wasted. Using the waste heat will increase efficiencies of conversion from a best of 50% for central station generators to 85%.

2. Bonneville shall acquire 1000 megawatts of peak reduction over the next 10 years, based, in part, on the results of the DG pilot project referenced in 1., above. Peak reduction can come from a diverse set of technologies and strategies, including DG, load management, and conservation. These combined activities should consider capital savings as an important management objective. The BPA Administrator shall also establish a Conservation Business Line, independent from the TBL and PBL so that Bonneville's conservation efforts can focus on avoided transmission and power costs.

Power Pricing

3. Bonneville should adopt pricing policies for its energy sales that reflect true fish costs and market conditions. Bonneville should also begin to transition to market based rates over the next ten years. Fish must be shielded from the transition of energy markets.

Justification:

Bonneville's current cost-based rates are under scrutiny and perceived as a subsidy by the federal taxpayer. It is disingenuous at best to say the Northwest is entitled to cost-based power when damages caused by the federal hydrosystem are left unpaid for and foisted upon the federal taxpayer. The public benefits of the hydrosystem are not being shared equitably under the Northwest Power Act. Most notably, anadromous fish continue to be the shock absorber to maintain below-market sales of power to the region. The loss of up to one quarter of the runs this year due to "emergency" operation of the hydrosystem for power purposes only underscores the region's recalcitrant image to those outside the region; we are unwilling to pay for damage to the national treasure of anadromous fish runs but are completely willing to have the federal taxpayer shoulder the costs of saving endangered salmon. Seeing the writing on the wall and the change in national energy markets, it is time for Bonneville to start to transition to market-based rates and for the true costs of the federal hydrosystem's damage to anadromous fish to be borne by that system.

⁵ Cite the Texas example, which is being held out as the best in the Nation.

The fundamental problem at the heart of the "equitable treatment" issue is that fish needs are not currently a well-defined nor a serious constraint on the operation of the power system. Because of this, fish operations and other expenses act as the shock absorber for both the physical reliability of the power system and for the financial health of Bonneville. Put another way, BPA's power business is not providing its own reserves. Instead it relies on fish for practically free emergency support.

In the absence of market-based rates or while transitioning to market-based rates, it is incumbent upon the Council, Bonneville and the region to adopt policies, programs, rates and operations that afford the funding necessary to protect the remaining salmon stocks from extinction. To this extent, Bonneville has shown that it is incapable of aggressively implementing the 2000 Biological Opinion or protect the Treaty Tribes' treaty rights and has operated the hydrosystem for the benefit of power users this year in contravention of the Northwest Power Act, the Endangered Species Act and treaties. Bonneville must act in a more business-like fashion. Businesses regularly mix and match solutions from various strategies to ensure their continued viability. The Council and Bonneville should consider the following:

- Shift risk to customers. This entails planning for quick price changes without losing customers. Strategies can include locking in customers with long-term contracts, or creating niches in which there is little competition or product substitution available, so that the firm has the freedom to change prices quickly and substantially. Bonneville is depending almost exclusively on this strategy with its various CRACs.
- Carry large financial reserves and/or untapped credit. BPA used to depend almost exclusively on this strategy. However, given the huge amount needed due to volatile markets, combined with weather risk, and the reluctance of Congress to provide more credit, customers have been unwilling to go this route.
- Purchase insurance. Besides general policies covering fire, theft, and natural disasters, many businesses rely on "business interruption" insurance that can be written to cover very specific circumstances. BPA should competitively acquire reserves from the market to cover the conditions requiring a hydro emergency. This could be a 10-yr. contract covering the subscription period, or even longer. The contract would define the conditions under which the reserves could be used.⁶ Bidders could offer peak generation, load curtailment contracts or simply financial hedges or insurance policies to fill this product. The market would develop the most efficient way to serve this need. The annual cost would be similar to that estimated for physical reserves, the only difference being that someone else would manage the risk. The cost would be included in fish program costs.
- Maintain duplicate equipment. Physical "reserves" normally stand idle but can be quickly put into service. They can be also be used to produce "non-firm" output when

³ The RFP would, for example, cite the Criteria under which the reserves could be called upon. We predict that once monetary consequences must be accounted for, those Criteria would have to be defined much more specifically. As written they are exceedingly vague and open to arbitrary interpretation.

prices are high enough to justify the added variable costs of hiring temporary workers, obtaining short-term deliveries of feedstock, etc.

4. FERC should adopt temporary price caps or terminate market rate authority for Duke, et al. per the motion of the ISO, if necessary to allow the Northwest to purchase energy at affordable rates as envisioned in the 1996 Council Energy Plan and permit the FCRPS to reliably meet the operations recommended by the Tribes. Ultimately, better price signals will improve efficiency. We would recommend a measured move with certainty to real-cost pricing over a 10-year weaning period. Price caps could be relaxed gradually, but with certainty, over the weaning period.

5. The Council should encourage and RTO West should adopt uniform mandatory interconnection standards for all transmission utilities to assure interconnection of generating resources to allow development of resources needed to take the pressure off the Columbia River, e.g. distributed generation, and other strategically placed resources. Current transmission interconnection standards vary from investor owned utilities to public utility districts to cooperatives. The inability to interconnect poses difficulties for siting new generation in areas where peaking problems occur.

6. The Council should encourage and RTO West should develop liquid markets for constrained transmission. This will facilitate the adoption of peak reduction measures to uncover the value of constrained transmission paths.

7. Fish Operations will be submitted as a hard constraint to the PNCA. Emergency limitations on fish operations will only occur when the Northwest energy reserves fall below 1.5%, the equivalent of a stage 3 emergency in California.

Justification:

On March 30 of this year, the Federal Agencies finalized three "Criteria" for declaring a Power Emergency for purposes of deviating from the new BiOp's spill and flow provisions. The first two criteria are dependent upon definitions of insufficient generation which ultimately depend on financial considerations. In almost all cases, water can be stored, load can be bought down, or power can be purchased to avoid actual forced outages--if enough money is brought to bear. The third criteria is a financial criterion relating to BPA's reserve levels. Thus, the ability to trigger a power emergency--and thus deviate from fish operations--is ultimately almost solely a financial question.

The way the Federal Agencies have interpreted the emergency criteria tilts the hydrosystem operations strongly against the operations for anadromous fish. In addition, the way the criteria work guarantees suspension of the Biological Opinion flows and spill every time we have low rainfall or prices go up.

The problem with the Criteria is that they trigger much easier than the proposed financial trigger, the Safety-net CRAC, which would be used by Bonneville to reduce or eliminate the need for a

hydro emergency at all. The Criteria depend upon a 12-month rolling forecast, while the SN-CRAC is limited to looking only to the end of each fiscal year. In addition, the Criteria trigger upon a finding that there is more than a 20% probability that BPA can't pay its bills, while the SN-CRAC requires a 50% probability to trigger. Finally, the SN-CRAC takes at least 5 months to go into affect, while the Criteria can change hydro operations instantly.

Therefore, since a hydro emergency can always be triggered before the SN CRAC can be implemented, it means that fish can be, and almost always will be, the first resort when financial times are tight. Once again the fish will have to depend upon political pressure rather than objective measures to participate in this debate. In addition, the generation and load-control market will never adjust to reduce the need for declaring a hydro emergency. If investors know that a hydro emergency can always be declared to reduce the need to spend lots of money to procure power and load curtailments, then they will never invest enough to reduce the frequency of this *damnum infectum* from happening. After all, declaring a hydro emergency provides free (except for the political outcry) reserves for the power system. It's hard to compete with free. The current criteria create a mechanism to provide free financial reserves to Bonneville ratepayers.

We understand that BPA's final ROD may overlap and precede the Council's schedule. We have raised this issue in the ratecase, but the Administrator may not change his staff's current proposal. This then becomes a serious problem, because it limits the ability of the Council to instigate changes in the relationship between power production and fish restoration. The power side of the equation will have been set in stone. If that becomes the case, we urge the Council to put into place safeguards to ensure that Power "emergencies" are not triggered early merely to avoid the later triggering of the SN-CRAC. This is certainly anticipated in the Federal Agencies' Criteria paper which adds this caveat: "These planning criteria . . . will also take into account expected benefits of tools which are reliably available to mitigate cashflow problems . . ." The Council should make it clear that before relying on a power emergency to deal with low reserves, Bonneville must use all of its available cash flow mitigation tools, including:

- accessing its \$250 million short-term Treasury note;
- accessing additional borrowing authority;
- contracting forward for swaps or delivered power to be paid for after the SN-CRAC can be implemented; and,
- imposing a transmission surcharge.

Leaning on fish cannot be allowed to become merely a substitute for the provision of adequate reserves, both financial and electrical, on the part of Bonneville.

Additional Generation

8. Bonneville shall acquire 1000 megawatts of generating capacity as ancillary reserves to assure that fish operations are not constrained due to lack of regional energy resources. Outside of potential spill times, the plants could be called upon as needed, but during these times, the

plants could only be run in emergencies to allow for spill, when spill would otherwise be endangered.

Justification:

Eliminating fish operations altogether provides Bonneville with about 3700 MW-mos. of extra power spread over around 3-4 months, or about 1000-1200 MWs per month. That is the limit of what can be accessed in a Power Emergency. Let's finally get the power system's reserve requirements off the back of the river.

Along with targeted load control and distributed generation, we recommend roughly 1000MWs of single-cycle CTs be installed to provide the emergency reserves equivalent to that which can be captured from leaning on fish operations. A key to this proposal is that these resources must be kept available for use during the conditions now used to trigger a Power Emergency. They truly have to be fish reserves. And once built, fish operations could only be deviated from under the most stringent, physical emergencies, never for price reasons. These resources could be acquired for about \$300 million. Amortizing over 20 years would result in yearly fixed costs of only about \$20-25 million per year, a small price to pay for insurance against losing a year-class of salmon during a drought or other power crisis. The costs, including gas transportation capacity and other reserve payments, would be partially offset by revenues when the plants did run and the load curtailments were called upon. The rest should simply be a part of fish program costs.

Emergency Measures

9. We recommend that the Program contain the following attached definition of emergency (italicized). Deviations from operational requirements for anadromous fish should only be allowed in the event of an actual emergency.

Definition of an Emergency:

“e·mer·gen·cy (i mur'jen se), n., pl. -cies. a sudden, urgent, usually unforeseen occurrence or occasion requiring immediate action.”

Random House College Dictionary, 1980

It is appropriate to define emergencies as they apply to the operation of the FCRPS. Emergencies are a unique situation having the potential for many types of impacts, generally requiring some type of action or response to minimize or eliminate impacts. An emergency may involve the need to operate the FCRPS outside of the requirements contained in the Biological Opinions or the associated Records of Decision (ROD) issued by the operating agencies.

However, it is important to distinguish emergencies from “planned risks.” In operating a complex system such as the FCRPS, certain risks are assumed every day. Future conditions are uncertain. Operational decisions rely on predictions, forecasts and probabilities. If an extreme circumstance occurs, it is not necessarily an emergency even though it was sudden and urgent, and caused an immediate action to be taken.

For this protocol, emergencies are categorized into three types. They are restricted to power-type emergencies only. Each type is described below and illustrated with several examples.

1. *Generation Emergency – the actual insufficiency of electrical generation to satisfy electrical demand or load in a particular geographical area, as measured by the real-time drop of reserves to a level of less than 1.5% of actual loads, equivalent to a stage three emergency in the ISO.*

For example, a generation emergency may be caused by an unanticipated loss of a generating resource – a project/unit forced outage; or by a restriction in the amount of water available for project discharge – reducing on-site generation; or by a loss of electrical transmission capability used to import electricity into a particular geographic area – a transmission line restriction or shutdown.

2. *Transmission Emergency – the potential or actual loss or limitation in the ability to move electricity from the site of generation to the actual consumer or end-user.*

For example, a transmission line may fail, shutdown or otherwise be unavailable to transmit any electrical energy – a line outage; or a physical condition may exist that prevents or limits effective and reliable transmission – insufficient reactive power (VARs) to overcome the inherent losses in long-distance transmission; or a temporary limitation on transmission line capability that restricts the export of electricity – which causes a generation surplus in one area, thus reducing overall generation levels but causes a shortage in another area as noted above in the description for a generation emergency.

3. *Other Emergency – the existence or result of extenuating circumstances which fall outside the range of normal operations, was unanticipated, and may have resulted in catastrophic impact, physical damage or failure to part of the physical power system.*

For example, all natural disasters fall under this category of emergency – earthquakes, floods, and fires; or human caused failures – ship or barge strandings, facility failures (e.g., locks, gates, outlets, etc.), chemical spills into the river, train derailments impacting the river and terrorist acts; or overriding circumstances or needs that require operations to exceed normal limits such as a police investigation, a rescue operation, and a project operation specifically designed to prevent damage to or protect other parts of the FCRPS.

Justification:

The “emergency criteria” currently used by Bonneville, the Corps, and BuRec, allow the Bonneville to create the emergency. BPA’s “criteria” allows for too much discretion by the

agency. BPA can call an emergency if prices rise too rapidly; BPA can call an emergency if power is available but is deemed “too expensive.” BPA could forecast insufficient generation in the next fiscal year and declare an emergency and suspend fish operations. Simultaneously, BPA can “blind” itself beyond the current fiscal year and thereby not raise rates necessary to buy power to implement the BiOp.

Bonneville is setting its rates so low for the next rate period that it could presumptively always forecast an emergency. BPA can call an emergency 12 months ahead of time if there is a 20% probability of reserves being \$0 or less. BPA’s Treasury Payment Probability (TPP) is about 80-85%. Because of the rapid, volatile market, it is possible the “criteria” could trigger because BPA’s rates are geared so close to the TPP. BPA has stated it’s new rates will ensure at least an 80% TPP based on the ability to draw cash reserves down to \$50 million. However, BPA has also stated they must have \$300 million in cash reserves at the end of the fiscal year to guarantee paying its other creditors. This level of reserves drops BPA’s TPP to about 70% which further enables BPA’s ability to trigger an emergency determination under the criteria. BPA’s Safety-Net Cost Recovery Adjustment Clause (SN CRAC) will be inadequate to deal with the “criteria” problems. A SN CRAC will only trigger if there is a 50% likelihood of Treasury deferral (as opposed to the more liberal 20% standard for the “criteria”), won’t be allowed to look into the next fiscal year (as opposed to the 12 month rolling forecast of the “criteria”), won’t need to trigger because fish operations will have already been suspended under the “criteria” possibly creating huge windfall profits for BPA, and will require a mini 7(i) rate case process that will take several months to accomplish.

The circumstances leading to the current federal declarations of emergency were known at least two years ago, and were revealed in studies of BPA and the NPPC, which should be part of this record.

10. In the event that fish operations are constrained on an emergency basis, the value of the energy produced from this operation will be paid into an account at Bonneville to be expended within one year of accrual for fish and wildlife mitigation.

Justification:

The market must participate in reducing the frequency of hydro emergencies is to "monetize" the value of depending on an emergency. When there is a less than market cost to declaring an emergency (beyond the political fallout from environmental and fishing industry interests), the market, including BPA's load-serving utilities, will not efficiently develop alternatives. It will not be profitable or less costly to invest in peaker units and load controls if it is cheaper to lean on fish. There must be a real market cost put on deviations from the BiOp's recommendations.

Energy provided by deviating from the BiOp's hydro operations should be sold at a price incrementally--perhaps 10%--higher than its market value. Doing so will force the market to choose and develop lower cost alternatives. The money collected must not simply go back to BPA ratepayers, or the price signal will disappear. Instead, this money should go to

organizations such as the Bonneville Environmental Trust, to be used to mitigate the effects of deviations from the BiOp.