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POWER BUSINESS LINE

February 7, 2003

In reply refer to: PG-5

Ms. Judi Danielson, Chair
Northwest Power and Conservation Council
851 S.W. Sixth Avenue, Suite 1100
Portland, OR 97204-1348

Dear Ms. Danielson:

Thank you for the opportunity to comment on the Northwest Power and Conservation Council's (Council) Draft Mainstem Amendments to the Columbia Basin Fish and Wildlife Program.

Bonneville Power Administration (BPA) supports many aspects of the draft amendment. We especially appreciate the Council's willingness to examine dry year operations, optimal spill operations, and survival standards. We encourage the Council to evaluate measures and adopt those actions which are consistent with the Program vision of protecting and mitigating the natural ecological functions, habitats, and biological diversity of the Columbia River Basin in a cost-effective manner that ensures the Region an adequate, efficient, economical, and reliable power supply.

BPA believes the most important task of the final mainstem amendment is to continue integration of biological performance standards, in a least cost manner, across the integrated program, river operations and configuration investments. Please expressly incorporate this as a guiding principle throughout the final amendment, so it is clear BPA's fish and wildlife obligations should be well-defined, fully understood, and met through actions and investments that are performance-based and achieved at the least-cost.

When considering the mainstem amendments, BPA respectfully requests that the Council evaluate the relative priorities of both the biological objectives and the measures adopted to help achieve them. To the extent measures could be implemented this fiscal year, costs should be

included in ongoing review of integrated program expenses and reprioritization for FY 2003. We acknowledge the difficulty of this task and will endeavor to provide the Council with productive assistance and support.

Thank you again for considering BPA's views. Additional comments are enclosed.

Sincerely,

Sarah R. McNary

Sarah R. McNary
Manager, Fish and Wildlife

G. K. Delwiche

Gregory K. Delwiche
Vice President, Generation Supply

2 Enclosures
BPA Comments
Spill Estimates

cc:

Mr. Rob Walton, Public Power Council
Mr. Rod Sando, Columbia Basin Fish and Wildlife Authority
Mr. John Shurts, Northwest Power Planning Council
Federal Caucus Agencies

BPA Comments on Draft Mainstem Plan Amendments

FCRPS Operations

We appreciate the Council's incorporation and endorsement of the Fish and Wildlife Service and NOAA Fisheries 2000 Biological Opinions (BiOps) on the FCRPS. The NOAA 2000 BiOp establishes biological performance standards for juvenile and adult survival through the FCRPS. These standards enable the region to take a performance-based approach to hydrosystem operations measures intended to increase survival of listed stocks. With this performance-based approach—which applies across hydrosystem operations, configuration, and the offsite actions implemented through the integrated program—comes the ability to modify measures over time as new information is learned about the effectiveness of measures and of the biological needs of listed stocks. As the Council has recommended, we agree that adapting action to new information necessitates “systematic and rigorous monitoring and evaluation . . . to determine if the measures have the biological benefits expected and represent the most cost-effective actions to achieve these benefits.” (Draft Amendment pp. 19-20.)

Since making our mainstem recommendations to the Council in June 2001, we have worked collaboratively to incorporate offsite actions under the biological opinions and the Pacific Northwest Electric Power Planning and Conservation Act (Act) into an integrated program. As the attachment to BPA's 2001 recommendations shows, most all of the offsite mitigation for the BiOps is included in the measures prioritized and evaluated by the Council. We believe this shows the Council's program provides a broad umbrella for implementation planning under which the BiOps are a subset. Nevertheless, we are concerned that the draft amendment states: “The Council accepts these measures as part of the Council's program for the near term, *except where the measures are inconsistent with specific objectives and measures included in this mainstem plan.*” (Draft Amendment p. 19, italics in original.) This exception may prove to be unworkably broad. In the course of implementation, it seems unrealistic to expect the Council to identify every instance where it believes an action under one of the BiOps is inconsistent with an objective or measure in the mainstem plan. BPA would like to work with the Council to continue identifying parallels and inconsistencies between the program and the BiOps. BPA would welcome the Council's suggestions for ways to resolve any apparent inconsistencies we discover.

Comprehensive Basinwide Planning

BPA applauds the draft amendment's vision of a comprehensive, ecosystem based approach to mainstem planning. The draft makes clear that any action suggested within the Mainstem Province will be evaluated from multiple perspectives. We urge adherence to this concept in the final amendment, and suggest that it is entirely consistent with approaches taken in the FCRPS BiOps, the Federal Caucus's Basinwide Salmon Recovery Strategy, and the Action Agencies' Implementation Plans. The Mainstem Province can constitute either a cornerstone in the foundation of Columbia Basin integrated planning—or it can become the major obstacle to the task and goal of joining together a myriad of subbasin and provincial efforts into a comprehensive whole that combined should be greater than the sum of its parts.

The draft rule, and its comprehensive, all-factors considered approach to decision making lays the groundwork for both a check and balance on consistency and level of effort of the tributary subbasin plans, as well as an opportunity to use the Mainstem Province as the program cornerstone which truly integrates those same plans into a means to address, and to account for progress toward solving the system-wide issues at play in the Columbia Basin. Within the framework of the present subbasin planning process, we can see no more appropriate avenue to ensure the basinwide cohesiveness of what could otherwise be characterized as groups of segmented plans. The draft amendment, however, lacks the necessary detail to describe the process by which this would occur—and the means by which the now linked, but still separate, planning processes could be gathered and coalesced into a true system-wide approach. Without this link, we believe it will be impossible to allocate a meaningful sharing of cost and responsibility among all four Hs, and all responsible actors, in a manner that meets the program's overall objectives as well as ESA recovery goals.

Hydrosystem Performance Standards

The biological opinion included three components to the FCRPS hydrosystem survival performance standards: (1) adult, (2) in-river juvenile, and (3) combined juvenile (in-river + transport). (BiOp p. 9-14, table 9.2-3). Total system survival is the combined survival of in-river and transportation survival. Given that a large percentage of many stocks of salmonids are transported annually, total system survival is a critical measure of performance. Additionally, life cycle analysis depends on estimates of total system survival. As such, we believe that total system survival is ultimately a more important measure of performance than either project-by-project or in-river survival alone. This is in keeping with the Act's directive to provide mitigation from a system-wide perspective, not simply project-by-project.

The NOAA Fisheries 2000 FCRPS Biological Opinion does not include project-by-project survival performance rates for the eight dams. The footnote associated with the Table 9.2-3 in the opinion indicates that per-project survival rates were shown for illustration only and are not intended as project-specific standards. This is important to ensure that actions at individual projects are in context of their contribution toward in-river and total system survival. That is, the biological benefit and least cost alternatives should focus on the effect of actions at individual projects but be judged as part of a system-wide metric—the broader in-river and total system survival.

The five and eight year mid-point evaluations will reevaluate listed ESU's in terms of population growth rates. This analysis will rely on the estimates of combined (in-river + transport) juvenile survival. Snake River ESUs present a unique situation because anywhere from 30 to greater than 90% of those fish get transported, depending on river flows, with substantially higher proportions being transported in low flow conditions. (BiOp p. 9-194, 9.7.1.6.1). Accordingly, in a low flow year like 2001, a relatively small proportion of total Snake River migrants are subjected to in-river conditions such as flow, spill, and predation. If spring migrants are not transported from McNary Dam, then in-river survival of Upper Columbia River ESUs equals total system survival.

In sum, the Biological Opinion recognizes the survival benefit to each species for both in-river and combined (in-river + transport). On average (1994-1999), the estimated combined survival

(in-river + transport) is higher than in-river alone (pg. 6-54, table 6.2-7). BPA therefore believes both metrics should be used together and not in-river survival alone. (BiOp p. 9-194, 9.7.1.6.2.)

Transportation

The uncertainty and assumptions on delayed transportation mortality (“D”) are key to determining the most appropriate use of juvenile fish transportation. Further, the priority of actions is to some degree dependent on the extent to which transportation is used as a tool to avoid cumulative mortality associated with in-river migration. As such, the NOAA Fisheries Biological Opinion emphasized “D” as a critical uncertainty that needed resolution. We encourage the Council to support this research in its proposed rule as a matter of priority. In addition, BPA appreciates the Council’s continued support of juvenile fish transportation as a tool to improve survival through the FCRPS, and look forward to opportunities to work with the Council in the context of adaptive management to ensure that the use of transportation across the broad range of within-year environmental conditions is most appropriate.

Spill Studies

BPA agrees with the emphasis of the proposed amendment to obtain the necessary information to improve spill implementation and its biological effectiveness, to reduce any biological or environmental risks, and to reduce its costs. The conceptual model used by the Council to depict the prioritization of research to “optimize fish and wildlife benefits and energy production” is consistent with our similar responsibilities under the Act to protect, mitigate, and enhance, fish and wildlife while providing an adequate, efficient, economical, and reliable power supply. Attachment 2 contains an accounting of the generation and revenue impacts of FCRPS juvenile bypass spill. Given the significance of these impacts, BPA encourages the Council’s continued attention to this difficult but important issue and looks forward to working with you to continue achieving this balance that is at the heart of the Act. In this effort, we are grateful for the Council’s ongoing sensitivity to our legal obligations under ESA and your willingness to work cooperatively with the Federal agencies to arrive at an outcome that is responsive to our other obligations.

BPA notes those studies necessary to improve the efficiency and effectiveness of spill operations for fish passage are already underway at several projects. The studies have a project-specific focus and also contribute directly to the development of potential configuration alternatives, and as such, are largely funded by the Corps of Engineers under its Anadromous Fish Evaluation Program. BPA and the Corps are continuing to work closely to coordinate this research to ensure that it contributes to optimizing fish passage survival at least cost. We encourage the Council to work closely with both the Corps through its AFEP to prioritize those studies necessary to support this objective of the program.

BPA fully supports the broad strategy in the proposed amendment to emphasize the effectiveness of actions in freshwater in terms of adult survival. We agree that available information indicates that spill generally provides the safest passage at the dam; however, we also note that there are exceptions to this general statement based on accruing empirical data on project-specific juvenile passage. In other cases, it would appear that existing survival at some projects may be high enough that the incremental benefits of further increases in spill are negligible, if not too small to

measure, particularly with regard to passage survival. Another possibility is that the incremental effects of existing spill may have already exceeded a point of diminishing return. This information coupled with the biological risks associated with high spill levels—e.g., potential impacts on fish passing through other routes, degradation of water quality and exceedances of total dissolved gas standards, potential adverse impacts on adult passage and survival—and the high economic cost of spill calls for more rigorous evaluations of its effectiveness, costs, and alternatives, including its significance in terms of life stage and life cycle performance standards, harvest, and population rebuilding. Finally, this technical information should be considered in a more deliberative, policy-level decision-making process to ensure the appropriate balance of biological, environmental, economic, and other societal values.

We take exception, however, with the provision of the draft amendment that suggests that any additional revenues that may be generated by more efficient use of spill be applied to the program. A more efficient, performance-based use of spill is simply a good example of decision-making and management premised upon principles of least cost planning. We don't find support for the suggested allocation of savings in any of the Act's provisions describing the nature of appropriate program measures. Nor is there a compelling or defensible argument for this provision as it is written, especially given the agency's current financial position. We strongly believe that BPA's ability to support the program at any particular funding level is dependent on our ability to generate sufficient revenues to support our mitigation responsibilities and other public benefits. More efficient hydrosystem operations provide greater flexibility to support non-operational programs, including fish and wildlife.

Additional Research into Summer Spill

Summer spill is an area of particular importance and one worthy of continued study for several reasons. Summer spill benefits primarily non-listed stocks—the listed Snake River fall chinook are mostly transported to below Bonneville Dam. Subyearling fall chinook have an ocean-type life history trait, meaning they outmigrate during their first year of life. Their outmigration is characterized as a rearing migration, whereby they are feeding and rearing until they reach a larger size at which time they more actively migrate. Outmigration conditions are typically characterized by lower flow conditions with warmer water. As water temperature increase predation rates also increase. Generally, reservoir conditions in the summer are considered more adverse to fish survival than conditions in the spring. While summer spill may contribute to improvements in survival “across the concrete,” a better understanding is needed on its relationship to life stage survival. For instance, does spill contribute significantly to life stage survival in light of relatively adverse reservoir conditions, or is life stage survival relatively insensitive to passage improvements at the concrete? This question has important implications in terms of priority—is spill an important contributor to survival during the summer, or should there be a greater emphasis on improving conditions within the reservoirs through a combination of habitat improvements, non-native predator fishery management, and river operations? This question is particularly important given the economic cost of summer spill when demand and prices are high and flows—and therefore generation—are low. There may be alternatives to achieve the biological performance standards at lower cost. Nevertheless, we want to emphasize that we offer this comment with the caution that Hanford Reach fall chinook, one of the primary stocks affected by summer spill, are relatively healthy, and we do not want to compromise the effectiveness of operations that have contributed to this stocks performance.

Another reason calling for an improved understanding of the effectiveness of summer spill is in terms of its implications regarding adult productivity, harvest, and impacts of mixed stock fisheries. The combined ocean and in-river harvest rate on fall chinook approaches 50 percent. Therefore, an understanding of the benefit of spill is critical to ensure that its effectiveness, and that of alternatives, is fully understood. There may be other alternatives that provide similar biological benefit at lower cost.

In summary, we believe that evaluation of the effectiveness of summer spill is a very high priority and we would fully support the Council in efforts to determine optimal spill operations during the summer period. This is an excellent example of where focusing on how to achieve the biological performance standards in the least cost manner may show that the incremental benefits of summer spill to listed ESUs is marginal when compared to both the high cost of spill and the benefits that could be provided to other stocks that are not meeting their performance standards as successfully.

Configuration

BPA appreciates the Council's endorsement of prioritizing System Configuration Team funds to advance design and engineering work on the RSW at Ice Harbor dam. Though we only have one year of data on the effectiveness of the RSW at Lower Granite dam, this is a promising technology that represents the essence of least cost planning to achieve biological objectives while enabling the system to meet other purposes.

Flow Augmentation

The Council's apparent lack of support for the spring and summer flow objectives specified in the NOAA Fisheries BiOp is understandable given the conflicting analytical results and controversy of opinions on this issue. The relationship between summer flows and juvenile survival for Snake river fall chinook is well documented; however, the relationship between flows and survival of spring juvenile migrants is not. As noted earlier, the hydrosystem performance standards enable operations to be modified and even eliminated as new information or analysis becomes available that indicates a lack of effectiveness, thereby enabling limited hydro resources to be allocated in manner that meets the highest priority biological and system objectives at the least cost. With this in mind, we encourage the Council to solicit studies for a thorough evaluation of the effectiveness of spring flow augmentation as part of its final mainstem rule. If the results of such an evaluation are a conclusion that spring flow augmentation does not appreciably improve survival, hydro system operations could be modified to better meet other system purposes such as recreation, navigation, and winter power production.

Retention Time Criteria and Reservoir Restrictions

Analysis has shown that meeting the Grand Coulee retention time criteria is seldom possible using lake level constraints as the mechanism since quantity of water flow through the reservoir is the most important determinant. Flow levels are usually driven by nonpower requirements (flood control and anadromous fish). BPA suggests that the Council shift its focus towards the intent of the criteria, which is to increase the biological productivity of the reservoir. For

example, this measure could be fashioned after programs designed for that purpose and currently implemented in Kootenay Lake and Arrow reservoirs. Those programs have resulted in a dramatic increase in the number of fish and diversity of organisms within each body of water.

Dry Year Options

BPA appreciates the Council's acknowledgement that meeting fish operations simultaneously with other system purposes in a dry water year can pose significant tradeoffs to the Region and higher costs to the FCRPS. Though we do not believe it is warranted from a planning perspective to expect the unique water and power market conditions experienced in 2001 to become a regular occurrence, we do believe it would be a worthwhile endeavor for the Council to consider alternative operational strategies for low water years. Such strategies should reflect the greater number of fish transported in dry years and the accompanying higher cost of spill for proportionally lower numbers of in-river migrants. This same logic may apply for flow augmentation in drought years, in that drought year river flows, even when supplemented with flow augmentation from reservoirs, are still well below Biop flow objectives and, in low years, a proportionally greater number of fish are transported. Consequently, BPA encourages the Council to evaluate and recommend alternative flow and spill strategies for dry years, as there may be different least cost operating strategies for meeting performance standards in dry years as compared to strategies employed under better water conditions.

Smolt-to-Adult Returns

While returning adults are the ultimate measure of the productivity of the populations, and they provide a broad measure of the success of regional efforts undertaken in all four Hs, use of smolt-to-adult returns (SARs) as a performance standard for the FCRPS is problematic because of significant factors beyond the Region's control that ultimately determine SARs. Fish condition and quality, ocean conditions, avian and marine predation, harvest, and other sources of mortality can easily mask hydrosystem survival improvements if they are measured by adult returns. For Snake River spring-migrating juvenile steelhead and chinook, which have the longest and most complete data series, NOAA Fisheries has shown that survival rates for in-river migrants has been relatively stable from 1995-2002, with the exception of the very low flows in 2001. Meanwhile, SARs for the same species in the same timeframe have varied by a factor of at least 20, from less than a tenth of a percent to more than two percent. Many researchers believe that the variation in SARs is most likely caused by changes in ocean conditions than by changes in hydrosystem operation or configuration. In addition, Comparative Survival Study results suggest that variation in SARs for different Snake River hatchery stocks may exceed differences in SARs for Snake River versus lower river release groups. This occurs even though the Snake River fish are subject to similar conditions in the hydrosystem. Moreover, SAR data is limited for many ESUs that migrate through the FCRPS, including Upper Columbia and Mid-Columbia steelhead and spring chinook.

Additionally, SARs are also a lagging indicator of stock performance. As such, their utility as the basis for assessing the effectiveness of actions or to support decisions on actions is limited. While SARs provide a broad measure of population response to the suite of actions across all life stages along with associated environmental and ocean conditions that were present at the time, they do not in and of themselves provide any meaningful or timely input to decisions that are within the control of the FCRPS. Alternative measures of direct survival through the FCRPS,

such as in-river reach survival, and total system survival—combined in-river plus transportation survival—provide a more direct indication of performance as effected by FCRPS operations.

Fish Passage Center

BPA appreciates the ongoing effort by the Council, through the Oversight Committee, to establish a clear understanding of the role of the Fish Passage Center (FPC) and greater transparency in its activities. We look forward to the resolution of longstanding concerns relative to FPC operations, including availability of data and scientific analysis—too ensure that ratepayer dollars used to support the FPC provide the greatest value to the regional fish and wildlife program. BPA is uncertain whether it is significant that the draft amendment discusses FPC responsibilities under the Monitoring and Evaluation heading. We recommend the roles and responsibilities of the FPC be discussed in the data management section of the final amendment.

Mid-Columbia Public Utility Districts' Settlement Agreements

BPA supports the settlement agreements reached for the Chelan and Douglas County PUD dams. We note that these agreements also incorporate the use of biologically-based performance standards and an All H approach, similar to the approach being taken for the FCRPS. BPA also supports both the Vernita Bar Agreement and current strategies for reducing the stranding of Hanford Reach juveniles below Priest Rapids Dam during the spring.

Clean Water Act

The draft amendment notes objectives and measures related to water quality conditions. It, however, neither directly address water quality in the context of broader measures such as alternative reservoir operations and overall habitat quality on the mainstem, estuary and offsite, nor does it set specific objectives or guidelines for water quality. Again, we urge the Council to consider addressing these issues often seen as outside the periphery of the hydrosystem. The final rule should point out the mutual goals of the program, including subbasin planning, and total maximum daily loads (TMDL), water cleanup plans developed under the Clean Water Act. To achieve the goal of improved water quality in the context of improved habitat sought by both BiOps, continued integration of the Council's program with TMDLs and the Lower Columbia River Estuary Plan (LCREP) will promote efficient use of scarce resources. BPA urges science based solutions to specific problems such as total dissolved gas (TDG) and temperature affecting fish passage.

BPA concurs that spill operations may benefit fish health and power generation needs by not exceeding the 120% spill cap and even reducing spill to 115% if adverse effects do not result. These adjustments should be evaluated once structural and operational measures are implemented at specific FCRPS projects. Such measures may benefit long-term water quality standards compliance since the structural measures were designed for the existing TDG standard of 110%. Here again, an overall synthesis of TDG research should guide the Council's decision when weighed against competing operational scenarios.

Evaluation of alternative flow releases from Dworshak Reservoir on Snake River temperatures and fish passage has been conducted for several years through projects funded by BPA and the Corps of Engineers. A NOAA BiOp measure requires selection of a water quality model to guide these operational releases. Given the ongoing the collaborative science-based effort of the federal, state, and tribal agencies to improve monitoring and modeling for this critical stretch of the lower Snake River, BPA encourages the Council to defer to these other processes in selecting alternative flow scenarios to address Clean Water Act needs.

Resident Fish

The second specific objective for resident fish concludes “that flow and spill operations are optimized to produce the greatest biological benefits with the least adverse effects [to resident fish and wildlife].” (Draft Amendment at p. 17.) BPA is concerned this direction could thwart one of the overarching biological objectives for the program as a whole: recovery of anadromous and resident fish and wildlife affected by the FCRPS. (Draft Amendment at p. 10) To increase anadromous fish runs the program, and the mainstem rule, needs to facilitate the process of resolving resource conflicts that hinder the achievement of this goal. The Council has been very cautious in its approach to the effect of competition or predation on the Basin’s native anadromous fish from exotic species such as walleye, smallmouth bass, catfish, and shad. BPA continues to recommend the Council take a more aggressive position regarding measures that essentially direct the Action Agencies to manage the FCRPS for the benefit of both native anadromous fish and non-native exotic fish species. We are concerned that without the Council’s action, the program could evolve in a manner that promotes fisheries management actions that greatly increase the risk we will not achieve the primary goals of the program. If the amendment retains this resident fish objective, then BPA hopes the measure is supported with evidence showing how mitigating all fish affected by the FCRPS, including salmonid predators in the mainstem, is consistent with the Act’s goals and is a least cost means of contributing to the program’s anadromous fish objectives.

The Normative Concept

It seems a consistent premise throughout the draft rule that decisions on actions taken within the mainstem and its contributing tributaries be prefaced by consideration of all the alternative actions and the commutations and permutations of the effect of those alternatives. The pervasive corollary to this premise seems to be that the alternatives be weighed, first and foremost, for their impact on natural conditions in the local environment. Within the draft rule, this premise and its corollary are implied as a means to achieve normative conditions. While we respect the intent, we remain skeptical of this concept.

We wholeheartedly agree that the initial premise may be a laudable goal, and, in fact, we have long supported guidance that operational decisions including provisions of storage water for flow augmentation, be made only after all alternative operations are considered in both technical and policy forums—and only after the costs and benefits of those decisions, both locally, and system-wide are given full consideration. Nevertheless, we suggest the proposed corollary is not only inconsistent with the premise in its unbiased form, but it is also antithetical to its stated intent—to achieve greater measured biological benefit.

The first Snake River Salmon Recovery Team led by Dr. Bevan noted that the normative river concept is weak and lacks scientific backing in its application. According to the Bevan Team,

popular descriptions of the normative approach fail to acknowledge the huge changes in the ocean and estuary. Moreover, the concept tends to encourage planning around the FCRPS, instead of all hydroelectric projects in the Basin and the other three Hs. We feel that the draft amendment may, in fact, go further and place undue weight on local factors at the cost of the combined direct and indirect benefits, and risks, being incurred at the system level. For this and other reasons, BPA views the normative or natural river notion as overly simplistic, unattainable, and beyond the scope of the Act to attempt to achieve.

A goal consistent with the normative river concept is that of the Action Agencies' Implementation Plans to reestablish conditions in the mainstem that are more favorable to the survival and successful migration. Though this goal is necessarily focused, through the ESA and the Act, on native anadromous fish populations, actions toward this goal are equally or more likely to result in conditions which are closer to those that existed prior to construction of the hydrosystem than are actions resulting from an unwarranted bias in favor of local conditions. The Implementation Plans outline how the Action Agencies will pursue a comprehensive approach to achieve this long-term goal. The critical difference between the Implementation Plans and the program's proposed normative concept is that under the plans mimicry of natural conditions is pursued only if the action will likely provide a least cost means to attain the survival performance standards for juvenile and adult salmon as identified in the NOAA Fisheries BiOp. In this way we focus on the ecological attributes that supported salmon before the dams were built, but we do not strive for natural or normative river conditions.

The Columbia is one of the most developed and managed river systems in the world. The FCRPS was built for the express purpose of taming the natural variations in the hydrograph. Over the current planning horizon the Columbia River system cannot be and will not be natural or normative. Nevertheless, the FCRPS can be operated in a manner that focuses increasingly on the least cost actions that create natural ecological functions that support salmon mitigation and recovery. As the FCRPS configuration and operation continue to improve, the survival rates for many anadromous fish runs are approaching pre-dam levels. This combined with this success, recent jack and adult returns may suggest the FCRPS is no longer a limiting factor in the survival and recovery of listed ESUs. The Implementation Plan incorporates incremental improvements to the modifications of the FCRPS that make these survival improvements possible. We do not believe focus on local conditions could achieve the same benefits to native, both resident and anadromous, fish. We suggest the Council consider, instead, an equally incremental and measured approach to defining the benefits and costs of such actions to local fish populations.

BPA Is Not Required To Mitigate All Fish and Wildlife

BPA is concerned with the implications of the language used in the draft amendment. The Council may be overextending the scope of the program by characterizing its charge as the protection, mitigation, and enhancement of “*all* the fish and wildlife of the Columbia River Basin that have been affected by the development, operation and management of the hydrosystem . . . and that inhabit the mainstem.” (Draft Amendment pp. 6, 10.) BPA's Power Act obligation is to act in a manner consistent with the program, and to protect, mitigate, and enhance fish and wildlife affected by the FCRPS. This mandate authorizes BPA to mitigate *any* fish and wildlife affected by the hydrosystem, but it does not require mitigation of *all* fish and wildlife. The Act does not highlight the needs of resident fish or wildlife; it does single out anadromous fish in

provisions that call for improved survival at hydroelectric facilities and the maintenance of flows of sufficient quality and quantity to meet sound biological objectives. With the Act's strong focus on anadromous fish, and a relative silence about resident fish and wildlife, BPA believes that while the Act directs the development of a program to mitigate the impacts to any fish and wildlife affected by the FCRPS, the program was not intended to be a vehicle to mitigate all fish and wildlife.

Although we take exception to the Council's use of what we believe is overly broad language in this instance, the opportunity for continued collaboration in program management and development may serve to alleviate our concerns. The Council's ongoing effort to evaluate and prioritize program measures will promote and facilitate a tailoring of BPA's mitigation efforts to meet program goals and objectives while still managing costs.

BPA also believes that if the final amendment articulates the Council's duty in terms of the protection, mitigation, and enhancement of all fish and wildlife affected by hydroelectric development in the Basin, then the final mainstem amendment should include a placeholder to indicate when and how the program will look beyond the FCRPS and incorporate measures that address all hydroelectric projects covered by the Act. With this, all entities can then share in mitigating the fish and wildlife adversely affected by the federal and non-federal hydro development throughout the Basin.

Blocked Areas

The draft amendment advances the concept of "reconnecting blocked habitat where feasible." (Draft Amendment pp. 8, 12, 14, 17, and 21, and footnote 2.) Similarly, the draft amendment's definition of "restore" includes taking actions in areas that have been blocked. What it means for habitat to be blocked should be better defined. If it includes only things like roads, culverts, or irrigation diversions, then we view the proposal as much less problematic. If, however, it includes mainstem dams, we do not think it appropriate to include these concepts of restoration and blocked areas in the program. The explicit references to investigating restoration of anadromous fish in blocked areas above Chief Joseph and Grand Coulee suggest the latter interpretation is correct.

BPA suggests the goals of the program would be better served if the final amendment focuses on enhancing known spawning and rearing areas that are currently connected to the unblocked mainstem and tributaries rather than reconnecting blocked areas or reintroducing anadromous fish into them. This view is consistent with the existing priority of the Council program to protect intact habitat and to use conventional techniques and approaches to mitigate severely diminished habitat. (2000 Program p. 20.) We strongly encourage your reconsideration of the definition and its implications, and ask that it be rewritten to state that the program should guide restoration of habitat affected by roads, culverts, irrigation diversions, etcetera—but not mainstem dams—in areas that are already accessible, and that opening blocked habitat is not a priority at this time.

Efforts aimed at the reintroduction of anadromy in blocked areas of the FCRPS are unwarranted for practical, economic, legal, and political reasons. The Act, especially section 4(h)(6), clearly directs the Council to work on anadromous fish within their existing range by improving their survival at hydroelectric projects or providing flows to meet production, migration, and survival

needs. BPA recommends a continued focus on connecting isolated areas of good quality habitat below the blocking dams, thus ensuring we are getting the greatest productivity from these areas, at comparatively low cost, before we move towards spending large portions of limited funding in areas where the demonstrable benefits are impossible to determine with any certainty. As a practical matter, any prioritization process undertaken with a backdrop of ESA listings is unlikely to promote reintroduction in blocked areas at the expense of implementing the possible habitat projects available below such areas. In addition, reintroduction would likely involve creative use of existing authorities and capitalization of constructed facilities such that Congress would have to be notified of the Region's intent. For these reasons, BPA cannot support the draft amendment's definition of "restore" as written or the reintroduction of anadromous fish into blocked areas. BPA could, possibly, consider supporting an amendment to reconnect blocked areas in the future, perhaps after we see what the next decade brings in fish recovery below the blocked areas.

Enhancement

The mainstem vision in the draft amendment calls for "[h]ydrosystem operations, fish passage efforts, habitat improvement investments, and other actions in the mainstem [to be] directed toward protecting, enhancing, restoring, and connecting natural river processes and habitats. . . ." (Draft Amendment pp. 8-9.) Some of these terms are explained in an accompanying footnote. BPA has some concern about the breadth of these references and the implications associated with their definition. For example, in footnote 2, the definition of "enhance" does not refer back to the express references to enhancement in the Act. While we know the Council is aware of these references, it may be of benefit to those less familiar with the Act and the program to reiterate them in final program amendments. Section 4(h)(5) directs that the program should include enhancement measures "to the extent such measures are designed to achieve improved protection and mitigation." Section 4(h)(8)(A) notes "[e]nhancement measures may be used, in appropriate circumstances, as a means of achieving offsite protection and mitigation with respect to compensation for losses arising from the development and operation of the hydroelectric facilities of the Columbia River and its tributaries as a system." The use of the permissive "may" and the qualification of "in appropriate circumstances" indicate that offsite mitigation is discretionary and it is not always appropriate.

Power Impacts Analysis

The Council defines a reliable power system to be one that is both adequate and secure; where adequate refers to the availability of sufficient resources (both supply and efficiency resources) to allow load to be served without curtailment due to insufficiency of resources, and where secure refers to the availability of sufficient reserves that can be brought on-line quickly should a system disruption occur. These comments focus on the resource adequacy component of a reliable power system.

The draft analysis defines two timeframes during which to evaluate resource adequacy: the near-term, two to three years out, and the long-term, three or more years out. The reason for the distinction in timeframes is that a new generation resource can generally be brought on-line in a three-year timeframe. Currently, there is no regional resource adequacy standard accepted by a consensus of regional stakeholders. There are, however, two resource adequacy measures in common use: seasonal Loss of Load Probability (LOLP) studies performed by Council staff for

the Region and annual load/resource comparisons under critical water conditions as shown in BPA's White Book for both the FCRPS and the Region. Generally, these two measures reach similar conclusions as to resource adequacy. Nevertheless, of the alternatives considered in the Council's analysis, we are concerned that if Alternatives G or H—which decrease winter season energy—were implemented, an annual resource adequacy measurement such as the White Book might become meaningless. When a White Book type of annual assessment of loads and resources reaches the same conclusion as a seasonal LOLP assessment, this indicates that although there may be a seasonal mismatch of generation and load, the combined resources of the Region can compensate for such a mismatch. The concern is that if the seasonal mismatch of hydro generation and winter load becomes too large, resource adequacy determinations may become focused exclusively on the winter season. This could result in winter reliability problems because it would likely not be economic to construct generation capacity that would sit idle much of the season.

Although it appears from Council LOLP studies and the most recent White Book publication that the Region is resource adequate in the short-term, the Council concedes that in the long-term there is no mechanism that would prevent the resource adequacy problems of 2000-01 from resurfacing. Even though it is recognized that the Council is initiating a process to establish a resource adequacy standard that may result in the development of such a mechanism, we encourage the Council to consider adopting the following principle in balancing fish and wildlife and power system needs:

Unless there are overriding environmental benefits associated with alternatives that significantly decrease winter energy production, choose a mainstem alternative that minimizes the deviation between seasonal energy production and seasonal energy consumption for the Region as a method to help secure a reliable power system for the Pacific Northwest.

Adequate, Efficient, Economical and Reliable Power Supply Analysis

The section of the draft amendment entitled, “Draft Analysis of Adequacy, Efficiency, Economy and Reliability of the Power System” provides a useful description of the reciprocal responsibilities to provide both an adequate efficient, economic, and reliable power supply and to protect, mitigate and enhance fish and wildlife consistent with the multiple purposes of the Northwest Power Act. BPA is generally supportive of the Council's approach as presented. We do, however, have a different perspective on some parts, the most important being discussed below.

The document refers to inadequacies of “the power system” to meet loads.¹ We believe the intent here was to address the West’s power systems and energy market broadly, not just the FCRPS. To clarify that power systems are interconnected, and that these difficult conditions arose in power systems in the West, not just the FCRPS, and that a “Western Energy Crisis” (pp. 55, 61) occurred, BPA recommends replacing the phrase in the referenced sentences, with “power systems in the West,” “the West’s power systems,” or “western interconnected power systems.”

This draft analysis also addresses the subject of equitable treatment. The Council notes that it would like to develop “mechanisms to ensure equitable treatment of fish and power during extreme low water years.” The equitable treatment standard is currently being litigated before the U.S. Court of Appeals for the Ninth Circuit in Confederated Tribes of the Umatilla Indian Reservation, et al., v. BPA. This case raises the issue of whether the equitable treatment standard was satisfied during the 2000-2001 power crisis, which involved an extremely low water year during an energy crisis. We believe it would be counterproductive for the Council to attempt to develop an equitable treatment standard at this juncture and essentially preempt the Ninth Circuit, given that the Court will squarely address this issue when a decision is reached. Until then, BPA encourages the Council to reaffirm its past program language which noted that equitable treatment aims “to meet the needs of salmon with a level of certainty comparable to that accorded the other operational purposes” of the federal and non-federal hydroelectric facilities located on the Columbia River or its tributaries.²

The draft analysis also states on page 57 that “[b]ecause of this failure [to provide adequate resources], there is some justification in saying that [the] power system failed in its obligation to protect, mitigate and enhance the fish and wildlife resources of the Columbia Basin.” To avoid the possibility that a reader could misconstrue the phrase to constitute an opinion that the FCRPS agencies failed to protect fish and wildlife in 2000-2001, even though the Council and the region made great efforts in 2001 to provide an equitable balancing among needs, BPA recommends deleting the phrase. The phrase is also unnecessary for the paragraph’s point that resources were inadequate to meet loads and, in response to this problem, one of the tools was to reduce spill. Alternatively, BPA recommends amending the phrase to read, “Because of this failure, adjustments to operations to increase generation reduced measures otherwise taken to protect fish and wildlife.”

Finally, on page 67, in the discussion of “economical,” BPA would add that the term should not be defined as an absolute. Even if power costs in the Pacific Northwest were less than costs in other regions, the proper measure is not what appears economical compared to other regions. Material adverse impacts on consumers would indicate that costs are not economical. Costs are also uneconomical if they are higher than necessary. When the Ad Hoc Pacific Northwest Power-Fisheries Committee added the word “economical” to “adequate, efficient, and reliable

¹ E.g., pp. 50 (In 2000-2001, the system was inadequate to meet loads.), 51 (“This [BPA’s need to manage costs and raise rates] is, for the most part, attributable to problems with the structure and operation of the power system that significantly affected Bonneville’s costs and revenues.”), 57 (“It was the fundamental failure of the power system to provide adequate resources that was the root of the problem.”).

² Council, Strategy For Salmon vol. II page 9 1992.

power supply,” when redrafting the fish and wildlife provisions of the Act for Congress, it noted that: “[T]his addition is consistent with the overall purposes of the Act to conserve power and utilize power resources in an efficient manner, and also helps emphasize in the case of fish and wildlife measures that such measures are not intended to create unreasonable power costs or obligations for losses not caused by power facilities or operations”³ The intent of the Act’s authors was that economical be considered what is fair and reasonable for the FCRPS to mitigate for its impacts, not what it can sustain and still continue to exist.

³ Ad Hoc Pacific Northwest Power/Fisheries Committee, Memorandum regarding Section-by-Section Analysis of Fisheries Provisions of the Northwest Regional Power Bill (S.885) if Amended in Accordance with the Ad Hoc Committee Proposals at 1-2 (Aug. 22, 1980).

**50-Year Average Cost of Juvenile Bypass Spill
(\$Millions)**

	2000BO Generic			2003 and 2004			2005			2006		
	spring	summer	Annual	spring	summer	Annual	spring	summer	Annual	spring	summer	Annual
	April-June	July-August	Total	April-June	July-August	Total	April-June	July-August	Total	April-June	July-August	Total
Lower Granite	3.5	0.0	3.5	3.5	0.0	3.5	3.9	9.2	13.2	3.9	9.2	13.2
Little Goose	2.7	0.0	2.7	2.7	0.0	2.7	3.0	7.1	10.1	3.0	7.1	10.1
Lower Monumental	9.3	0.0	9.3	9.3	0.0	9.3	10.0	11.4	21.4	2.1	6.0	8.1
Ice Harbor	16.4	9.7	26.1	8.6	6.0	14.7	3.7	5.7	9.4	3.7	5.7	9.4
McNary	2.8	0.0	2.8	3.0	0.0	3.0	3.0	0.0	3.0	3.0	0.0	3.0
John Day	21.4	22.7	44.1	13.0	22.0	35.0	13.0	22.0	35.0	13.0	22.0	35.0
The Dalles	17.0	19.6	36.6	16.9	19.6	36.5	16.9	19.6	36.5	11.5	14.6	26.1
Bonneville	13.8	21.9	35.7	13.6	21.9	35.6	13.6	21.9	35.6	13.6	21.9	35.6
Totals	86.9	73.9	160.8	70.7	69.5	140.2	67.2	96.9	164.0	53.8	86.5	140.3
Ave. Price (\$/MWH)	22.6	29.8	25.4	22.8	30.1	25.9	22.7	30.2	26.6	23.1	30.3	27.1

(prices came from a July 2002 50-Yr AURORA analysis of operation with no fish measures)

Notes: - A summer test begins **increasing spill** at Lower Granite, Little Goose and Lower Monumental in 2005 and continues in 2006.

Increment of **Cost** (\$Millions)

LWG	9.7
LGS	7.4
LMN	12.1

- A Removable Spillway Weir (RSW) is installed at Ice Harbor **reducing spill** in 2005 and 2006.

Increment of **Savings** (\$Millions)

IHR	5.2
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- A Removable Spillway Weir (RSW) is installed at Lower Monumental **reducing spill** in 2006.

Increment of **Savings** (\$Millions)

LMN	13.3
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- A forebay guidance device is installed at The Dalles **reducing spill** in 2006.

Increment of **Savings** (\$Millions)

TDA	10.4
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**50-Year Average Energy Loss due to Juvenile Bypass Spill
(MWH)**

	2000BO Generic			2003 and 2004			2005			2006		
	spring	summer	Annual	spring	summer	Annual	spring	summer	Annual	spring	summer	Annual
	April-June	July-August	Total	April-June	July-August	Total	April-June	July-August	Total	April-June	July-August	Total
Lower Granite	157,679	-	157,679	157,679	-	157,679	182,171	305,144	487,315	182,171	305,144	487,315
Little Goose	119,712	-	119,712	119,712	-	119,712	135,941	233,387	369,328	135,941	233,387	369,328
Lower Monumental	427,973	-	427,973	427,973	-	427,973	468,429	380,437	848,866	95,359	197,619	292,978
Ice Harbor	713,547	338,288	1,051,836	377,217	207,110	584,327	149,784	189,383	339,168	149,784	189,383	339,168
McNary	106,428	-	106,428	110,675	-	110,675	110,675	-	110,675	110,675	-	110,675
John Day	985,914	773,936	1,759,850	578,125	734,797	1,312,922	578,125	734,797	1,312,922	578,125	734,797	1,312,922
The Dalles	769,467	660,127	1,429,595	765,296	659,955	1,425,251	765,296	659,955	1,425,251	506,981	490,099	997,079
Bonneville	572,098	707,319	1,279,417	566,559	707,249	1,273,808	566,559	707,249	1,273,808	566,559	707,249	1,273,808
Totals	3,852,819	2,479,671	6,332,490	3,103,236	2,309,111	5,412,347	2,956,979	3,210,353	6,167,332	2,325,594	2,857,678	5,183,272

Notes: - A summer test begins **increasing spill** at Lower Granite, Little Goose and Lower Monumental in 2005 and continues in 2006.

Ave. Annual Incremental **Loss** of Energy (MWH)

LWG	329,636
LGS	249,615
LMN	420,892

- A Removable Spillway Weir (RSW) is installed at Ice Harbor **reducing spill** in 2005 and 2006.

Ave. Annual Incremental **Gain** of Energy (MWH)

IHR	245,159
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- A Removable Spillway Weir (RSW) is installed at Lower Monumental **reducing spill** in 2006.

Ave. Annual Incremental **Gain** of Energy (MWH)

LMN	555,888
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- A forebay guidance device is installed at The Dalles **reducing spill** in 2006.

Ave. Annual Incremental **Gain** of Energy (MWH)

TDA	428,172
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