MID-COLUMBIA PUD'S
Chelan, Douglas, Grant PUBLIC UTILITY DISTRICTS
Wenatchee – East Wenatchee – Ephrata, WA
Upper Central Washington State
253-549-4370

Wells Dam
Rocky Reach Dam
Rock Island Dam
Wanapum Dam
Priest Rapids Dam

February 5, 2003

Mr. Mark Walker Director of
Public Affairs Northwest Power
Planning Council

851 SW Sixth Avenue, Suite 1100
Portland, OR 97204-1348

RE: Council Document 2002-16: Draft Mainstem Amendments to the Columbia River Basin Fish and Wildlife Program

Dear Mr. Walker,

The Mid-Columbia PUD's (Chelan, Douglas, and Grant Public Utility Districts) own and operate five hydroelectric projects on the mainstem Columbia River located in North Central Washington State. These projects are Wells Dam, Rocky Reach Dam, Rock Island Dam, Wanapum Dam, and Priest Rapids Dam.

Collectively, the hydroelectric projects of the Mid-Columbia PUD's have a capacity of approximately 5000 MW of generation. The projects currently provide electricity to well over 7 million customers in the Northwest through existing Power Sales Contracts with regional utilities, including Puget Sound Energy, PacifiCorp, Portland General Electric, Avista, Cowlitz PUD, Forest Grove Light & Power, City of Milton-Freewater, Eugene Water & Electric, Seattle City Light, Tacoma Power, Kittitas PUD, and McMinnville Water & Light.

The Mid-Columbia PUD's support the Northwest Power Planning Council's efforts to achieve a balance between reliable power supplies and fish and wildlife protection, mitigation and enhancements. We also have been working to protect and preserve salmon and steelhead resources while providing continued reliable power supplies crucial to the Pacific Northwest.

We appreciate the opportunity to comment on the Council's Draft Mainstem Amendments document. Our staff' s are available to meet with you and your staff to discuss our comments in more detail or provide additional explanation as needed. Please contact us if we can be of assistance.

Sincerely,

Charles J. Hosken, General Manager Chelan PUD

William C. Dobbins, CEO/Manager Douglas PUD

Don Godard, Manager Grant PUD

Cc: Judi Danielson, NPPC Chair, Idaho
Tom Karier, NPPC Vice-Chair, Washington
Jim Kempton, NPPC Idaho
Frank L. Cassidy, Jr., NPPC Washington
John Hines, NPPC Montana
Ed Bartlett, NPPC Montana
Gene Derfler, NPPC Oregon
Melinda S. Eden, NPPC Oregon

COMMENTS OF THE MID-COLUMBIA PUD'S TO THE NPPC'S DRAFT MAINSTEM AMENDMENTS (COUNCIL DOCUMENT 2002-16)

➢ THE APRIL 10TH FLOOD CONTROL LIMIT AT GRAND COULEE

Discussion:

This limit has been in place for several years in an attempt to attain the highest possible reservoir elevations entering the spring fish flow enhancement season. For downstream hydroelectric plant operators, the implementation of this limit has created severe operational problems, especially during the late February and March time period.

The Flood Control limits, as calculated by the U.S. Army Corps of Engineers, vary depending on the snow pack and potential runoff remaining in the mountains of the U.S. and Canadian Columbia River system. This means that each time the forecast changes, the calculation and resulting target elevation at Grand Coulee changes. This results in large flow variations through the Mid-Columbia and lower river during this time period. If the forecast drops from one forecast to the next, the river is virtually shut off to fill as much as possible. On the other hand, if the forecast improves, the Mid-Columbia projects are flooded with water as Grand Coulee is drafted to stay below Flood Control elevation. The spring runoff on the Columbia does not begin in earnest until mid to late May. This in turn makes it especially difficult to fill Grand Coulee if the forecasts are declining, and results in extended periods of reduced flow.

The Mid-Columbia PUD's are trying to meet the loads of our customers with the generation from our projects. The implementation of the rigid Flood Control target has continually hampered our ability to do this, forcing us into the wholesale market, either selling (or spilling water) we can't use due to high flows, or purchasing because the river has been choked off to refill to meet the target. It makes it virtually impossible to plan for operations during this time period. We do not know until the twice monthly forecasts are released by the Corps and River Control Center what changes in flow regime will be imposed on our operations and ability to meet load.

In the Draft Amendments, the April 10 Flood Control elevation limit is removed in favor of a 95% June refill probability. We support the Council's proposed amendment on relaxation of the April 10 Flood Control elevation limit. The effects mentioned in the earlier comments are a result of the implementation procedures used to meet that April 10 Target. The fact that the Northwest reservoirs are forced to operate at such high elevations in April prior to the runoff commencing results in significant inadvertent spill and energy loss each year. If the weather warms quickly resulting in an early runoff, significant spill occurs because the reservoirs have no room to capture this water. This is

energy that could have been used to meet Northwest loads earlier in the winter, or later in the spring. Each megawatt hour of energy spill has to be replaced by thermal generation somewhere else, whether here in the Northwest or in California.

The fixed April 10 level is also detrimental to the region because loads are higher in the winter, and lack of ability to draft during that time results in higher thermal generation requirements in the region. Moving to a more flexible operation will improve BPA and the Northwest utilities ability to meet load with renewable resources, and not rely on fossil fuel generation. The energy requirements of the citizens of the Northwest vary seasonally, monthly, daily, hourly, and within the hour. At each point where the hydro system is limited in its ability to match that load, the effect on the environment and energy costs go up.

Recommendation:

The Mid-Columbia PUD's support relaxing of the April 10 Flood Control elevation due to its impact on the region's ability to meet load, the additional spill, and the increased thermal generation and environmental impact that results.

➢ GENERAL COMMENT OF OPERATIONAL FLEXIBILITY

Currently in the Northwest, most of the operational flexibility that is used to match generation to the instantaneous load exists on the projects from Grand Coulee through Priest Rapids Dam on the Columbia River. BPA, and most public utility load variation, is met through the flexibility that exists at Grand Coulee and Chief Joseph Dams. Some load following is available at Hungry Horse, Libby, and the lower Snake and Columbia River projects, but flow targets and fisheries operations at those projects frequently limit that flexibility. Puget Sound Energy, PacifiCorp, Portland General Electric, Avista, and the three Mid-Columbia PUD's all do the vast majority of their load following through purchaser contract shares of the hydro projects from Wells Dam downstream through Priest Rapids Darn.

The Northwest is unique from the rest of the United States in that the thermal generation (coal, nuclear, and natural gas) is "base" loaded at their most efficient generation level, running basically flat for many hours at a time. Meanwhile the hydro system, which is much better suited to rapid changes in generation levels, is varied from hour to hour and second to second to match load on the grid. Absent this hydro flexibility, new thermal units would have to be built to perform this function. Thermal units, if forced to operate as load following units, would seldom operate at their most efficient output, therefore wasting fuel and resulting in greater discharge of NOx and SOx into the atmosphere.

➢ GRAND COULEE FLEXIBILITY – THE "WASHINGTON PROPOSAL"

Discussion:

Under the draft amendments released by the Council, there is the potential to significantly impact operational flexibility. As a matter of course, limiting the flexibility at Grand Coulee, also limits the flexibility of the downstream projects to meet load. If the limits as imposed at Grand Coulee result in a flat operation, meaning that the_ reservoir level is held steady and outflows varied to exactly match inflow, there is no ability to match generation to load on a monthly, daily or in some cases, hourly basis. In order for the Western grid to stay in balance, generation MUST match load on an instantaneous basis. This balancing requirement does not change if new constraints limit this flexibility in the Mid-Columbia; it just means it has to be found somewhere else, and at a much higher cost. As mentioned previously, this cost is both environmental and financial for the citizens of the Northwest.

Recommendation:

If the Council chooses to adopt the "Washington Plan", we would recommend that the periods where the plan requires Grand Coulee to be held flat be allowed to vary as much as possible around that target elevation. The tighter the requirements around that target, the less the hydro generation can effectively move to meet second by second load changes. Additionally, the Mid-Columbia PUD's suggest that the limits be flexible to allow at least three feet either higher or lower to allow the system to have the capability to meet load. All the storage in the Mid-Columbia projects combined is equivalent to only 1.5 feet at Grand Coulee. It would be costly and difficult to replace the storage restricted from use by the Plan.

➢ MONTHLY MODELING – OPERATING FLEXIBILITY

Discussion:

The Mid-Columbia PUD's are concerned that the limitations of the NPPC's modeling of hydro impacts be well understood. The modeling is well done but is limited to monthly units. Without the ability to look at daily or even weekly changes, the model cannot detect significant impacts that can occur during these smaller time periods. This means that the loads are averaged over the entire month, despite the fact that loads in the fall season are rising, and in the spring season are falling significantly throughout the month. This lack of precision results in operational impacts that are not reflected when viewed from this macro monthly basis. The simplest example involves flows in modeling

as they approach the turbine maximum discharge limits at a project. In actual operation, loads and flows vary significantly by day of the week and hour of the day. As flows approach the turbine maximum on a monthly basis, there will be periods when flows will spike above the turbine maximum resulting in spill at the projects. Spill is likely to occur, when flows are within 10% of turbine maximum capacity on a monthly basis and spill can approach 10-15% of the monthly average flow, depending on circumstance. These variations are not typically captured when modeling on a monthly basis.

Recommendation:

The Mid-Columbia PUD's understand from discussion with the Council staff that there is a plan to move from whole month flow modeling to split month (each month split into two periods) modeling. While this will still not capture and represent all operations aspects mentioned, it will improve the accuracy of the modeling and is a step in the right direction. As to how to get from that point to capturing all operational impacts, the MidColumbia PUD's would suggest a greater dialog and consultation between the Council staff and operations personnel at the Corps, Bureau, and the Mid-Columbia PUD's. Some approximations may be appropriate to deal with these boundary conditions when model results show flows are near turbine maximum, or when evaluating the impacts of severe reservoir operation restrictions.

➢ VERNITA BAR AND STRANDING AGREEMENTS

Discussion:

In the Draft Mainstem Amendments, the Council endorses most of the Biological Opinion and NMF WS goals with the exception of flow augmentation and storage reservoir management. This does not necessarily reflect many important concerns of Grant County PUD and the other Mid-Columbia PUD's. In particular, the Vernita Bar Agreement (VBA) is only specifically mentioned in one section that says that the NPPC will consider settlement agreements relating to these projects. The Mid-Columbia PUD's would prefer a more proactive stronger endorsement of the VBA, as well as endorsement of the ad-hoc stranding agreements that are currently in place and widely supported in the region. There is also a key linkage in these agreements to BPA and the Federal Columbia River Power System (FCRPS). For these agreements to be biologically effective in protecting the Hanford Reach stocks, the FCRPS must participate to maintain sufficient flow and reserve sufficient flexibility to be effective.

The draft plan states that it will provide prioritization for Hanford Reach fall chinook equal to other ESA listed stocks. However, the minimum elevations proposed for Grand Coulee specified in the proposed amendments are likely to also conflict with VBA

operations as well as lower river chum flows, especially in a dry year with late or limited runoff.

The Mainstem Amendments also make no mention at all of Minimum Operating Pool (MOP) or chum flows affecting the lower river dams. These two operations create serious difficulties for Grant County PUD programs under VBA and the ad-hoc stranding agreements. The lack of capacity and flexibility during the MOP operations causes serious problems with Mid-Columbia Hourly Coordination by pushing BPA off coordination (removing Grand Coulee and Chief Joseph projects from the Hourly Coordination program logic). This results in larger flow fluctuations that must be reshaped under the stranding agreement to maintain near constant flows in the Hanford Reach. Again this is in direct conflict with the NPPC proposal to flatten Grand Coulee project discharges, This is another argument for the need for flexibility around any of the other desired constraints.

Recommendation:

Grant County PUD and the Mid-Columbia PUD's have worked hard to craft agreements with the state, federal, fisheries agencies and tribes to address Hanford Reach stocks. These agreements were structured to not be in direct conflict with other ESA mandated measures. Two years ago, President Clinton designated the Hanford Reach area as a National Monument. With the formation of the Monument, a new Hanford Reach Joint Federal Planning Committee was formed to begin looking at land use issues in the Hanford Reach. Some have suggested their purview should include instream flow and other operational parameters of the Columbia River within the Hanford Reach. Given the **overall value of the VBA and the** stranding agreements, the widespread acknowledgement and consensus achieved through much effort and coordination with the various parties, the NPPC should give a strong endorsement to these agreements, as preexisting documents/agreements in the amendments. To leave these issues unaddressed could undermine the region's ability to protect these stocks and to simultaneously meet other mainstem protection measures.

➢ FISH AND WILDLIFE

The Mid-Columbia PUD's support the NPPC's approach to developing project-specific biological objectives based on scientifically rigorous review and evaluation. These objectives should be integrated with water management objectives based on scientifically achievable fish and wildlife goals and objectives. This approach comports well with Chelan and Douglas PUD's Anadromous Fish Agreement and Habitat Conservation Plans (HCPs) which are based on the use of outcome-based standards to balance fish and water management issues.

The outcome-based standards approach is simple. Focus on the environmental outcomes to be achieved instead of continuing to implement measures with no goal or standard of achievement. This approach allows the use of least cost methods to achieve the goals and objectives.

Page 15, line 12-21

Chelan and Douglas PUD's support the NPPC's proposal of project-by-project survival standards, which are consistent with the Wells, Rocky Reach and Rock Island HCPs. Within the HCPs, the survival standards also apply to non-listed anadromous salmonids. Page 15, line 35- page 16, line 7

The Mid-Columbia PUD's do not support use of smolt-to-adult survival rates (SARs) as an interim objective by which to measure hydro system affects on anadromous salmonids. The overwhelming effect of ocean conditions on anadromous salmonid survival makes SARs questionable for measuring hydro system effects. If the NPPC does decide to move forward with evaluating this measure, the Mid-Columbia PUD's request representation in this evaluation.

Page 17, lines 30-34

The U.S. Fish and Wildlife Service's 2000 Biological Opinion contains numerous objectives, which seem to include the creation of a major research effort. The NPPC should specifically analyze the measures in the 2000 Biological Opinion with the same scientific rigor **applied to the other** measures in the program, weeding out the unnecessary research efforts, Extensive bull trout mainstem passage research should not be undertaken until more important bull trout recovery efforts in the tributary streams have been successful.

Page 23, line 6

The Mid-Columbia PUD's recognize that adult survival should be high priority, however currently there is no method to estimate the hydro related impact to adult survival.

Pages 25-27, Spill

The Mid-Columbia PUD's support the NPPC's approach to determining spill levels based on project specific impacts.

Page 39, lines 5-14

The Mid-Columbia PUD's support the NPPC's approach to developing a monitoring and evaluation (M&E) program, particularly the statements made in lines 8 through 12. We support the attempt to meet biological objectives and use of the M&E program to direct management actions to meet those biological objectives.

Page 41, lines 5-14

The Mid-Columbia PUD's support the concept of a basin-wide research effort. Perhaps a Committee made up of key researchers in the basin could coordinate this effort.

Page 44, line 5-6

Chelan and Douglas PUD's ask that the Council include the following language endorsing the HCPs:

The Council recognizes and endorses the Anadromous Fish Agreement and Habitat Conservation Plans (HCPs) for the Rocky Reach, Rock Island and Wells Hydroelectric Projects. The Council's Mainstem Amendments are consistent with the PUD's HCPs.

The HCPs are examples of programs that demonstrate how hydro projects can protect, mitigate, and enhance fish and wildlife, including related

spawning grounds and habitat, in a manner that provides equitable treatment for fish and wildlife with the other purposes for which the projects are managed and operated. The agreements integrate stakeholders' objectives and methods to achieve fish survival, habitat improvements, and hatchery operations, while allowing the PUDs to achieve the standards at the lowest cost.

The HCPs address the Endangered Species Act, the Federal Power Act, The Fish and Wildlife Coordination Act, The Pacific Northwest Electric Power Planning and Conservation Act, the Magnuson-Stevens Fishery Conservation and Management Act, the Clean Water Act and Title 77 of the revised Code of Washington, for listed and non-listed anadromous fish species and their habitat as affected by the Projects.

➢ WATER MANAGEMENT

Temperature Discussion:

The Mid-Columbia PUD's support the Council's reference that historical or natural conditions not be construed to mean achieving conditions prior to settlement in North America as a benchmark for the required condition of the river today Seepage S_ footnote 2. However, we believe that more discussion of this point is warranted in light of the potential conflict with the US Environmental Protection Agency's Preliminary Draft Temperature TMDL proposed for the mainstem Columbia and Snake rivers. The Preliminary Draft TMDL assumes just the opposite. It postulates an historical condition of the river prior to European settlement in North America, and it implicitly sets the historical antecedent as the benchmark for the required temperature condition of the river today. It does so without any analysis of whether measurable differences between "natural conditions" and current conditions (either in timing, magnitude or rate of heating and cooling) has a material biological effect on beneficial uses within the basin given the other biological conditions that support such uses.

We also support the NPPC's recognition that its obligations under the Northwest Power Act also do not exceed obligations under the Clean Water Act. Specifically, the Clean Water Act under Section 303(8) tempers any measures relating to heat by limiting them to only those necessary to protect fish under Section 316(8). Section 316, provides that temperatures shall not be "more stringent than necessary to assure the protection and propagation of a balanced, indigenous population of shellfish, fish and wildlife."

The legislative history of this provision explains that by "balanced" Congress meant that the standard "shall be interpreted to mean a reasonable maintenance of aquatic biology, and not the demonstration of enhancement thereof." Further, "'Indigenous' means growing or living in the body or stretch of water at the time such determination is made." Consequently, the "balanced, indigenous population" to be protected is the assemblage of fish and wildlife that exists in the water now, not during some historical period prior to major development.

We are concerned that EPA's Preliminary Draft Temperature TMDL has the potential to counter the regional efforts, including the NPPC's efforts in the Draft Mainstem Amendments, to become more efficient in the management of fish and wildlife resources.

Total Dissolved Gas (TDG) Discussion:

The Mid-Columbia PUD's agree that at specific projects, spill does not necessarily result in higher survival than turbine passage. In this regard, Grant PUD plans to test alternative passage options through an adaptive management process to reduce reliance on spill as a primary passage alternative.

However, we support the current and proposed Total Dissolved Gas (TDG) standard for the Columbia and Snake rivers in Washington State of 120% in the tailrace and 115% in the forebay of the next downstream dam with a one hour maximum of 125% TDG. The TDG standard does not apply when the flow exceeds the 7 day, 10 year frequency flood (7Q10). The 7Q10 flood flows typically occurs between March and August of each year, coinciding with the outmigration of juvenile salmonids. During other times of the year, the TDG standard is 110%.

The 115/120% TDG standard protects the fisheries resource and allows the necessary flexibility for operation of the projects. Because the higher TDG standard is being used by the Washington State Department of Ecology to guide management efforts at both federal and non-federal projects through TDG Abatement Plans up to a specified flood flow, the higher standard appears to present a more attainable target. The Corp's D-Gas Study has shown that the lower 110-115% TDG can not be attained up to the 7Q10 flood flow under any reasonable set of structural or operational alternatives.

Authors of the NMFS and USFWS Biological Opinions recognize that the depth of the Columbia and Snake rivers offers sufficient habitat protection for both salmonid and resident species. Both the NMFS and the USFWS recognize a compensation depth of one meter equates to a 10% reduction in TDG levels. Since the Columbia and Snake rivers are deep water systems compared to other rivers within the State, a TDG standard of 115/120% TDG for the Columbia and Snake rivers makes sense.