DOE/EIS - 0125-F

Bonneville Power Administration

Final Environmental Impact Statement

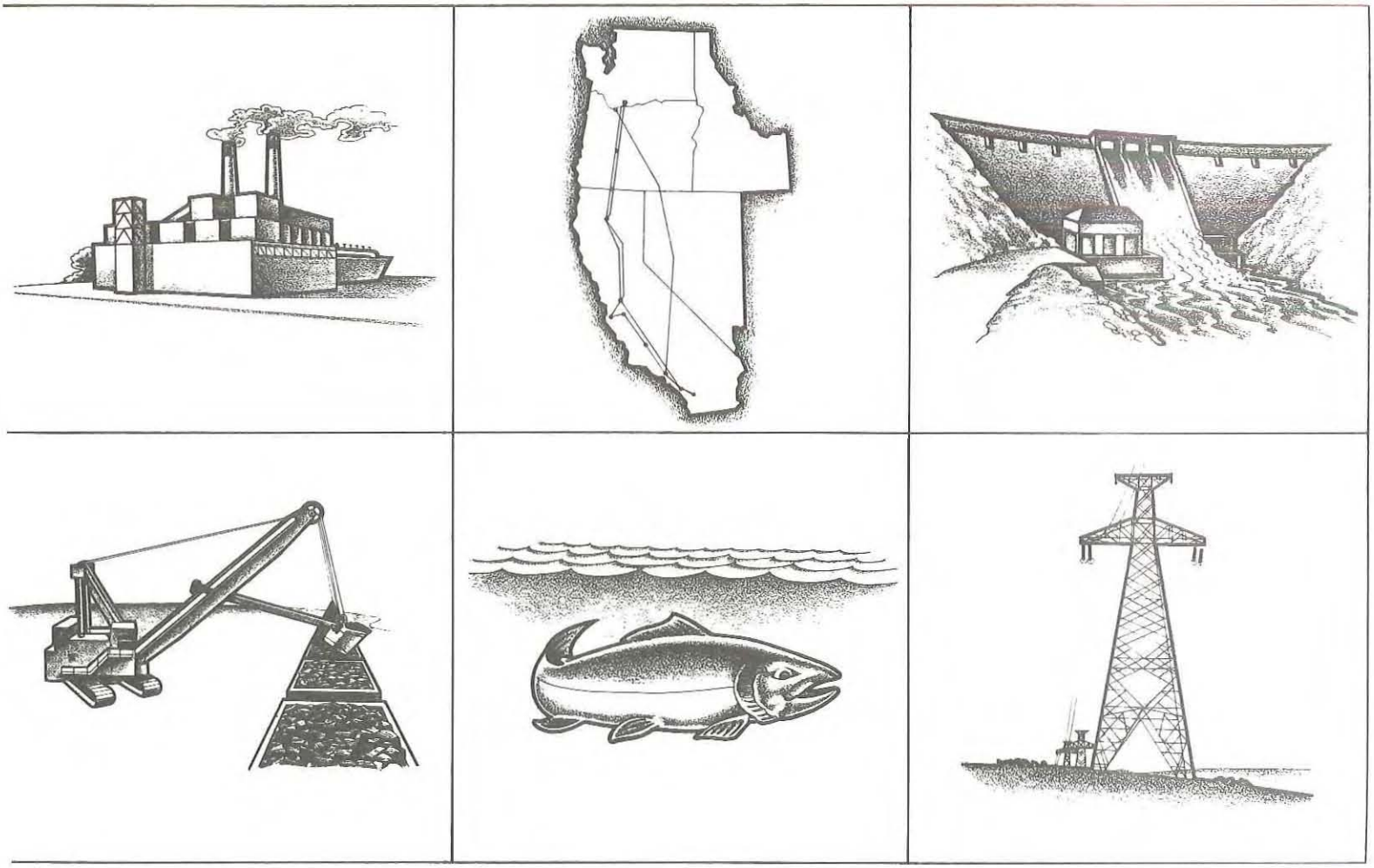
INTERTIE DEVELOPMENT AND USE

U.S. Department of Energy

April 1988

Volume 2: Comments and Responses

Part 1: IDU Draft EIS
Part 2: Hydro Operations Information Paper
Part 3: Revised Intertie Access Policy



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INTRODUCTION

This volume of the Intertie Development and Use Final Environmental Impact Statement (IDU Final EIS) contains summaries of public comments and BPA's responses. The comments were presented to BPA either in letters or orally at public meetings. The specific documents that the comments addressed were:

- IDU Draft EIS and Proposed Long-Term Intertie Access Policy, October 1986
- Hydro Operations Information Paper, November 1987
- Revised Draft Long-Term Intertie Access Policy, December 1987

How the Comments Were Collected

When a draft environmental impact statement is completed and printed, it is circulated to interested members of the public and to governmental agencies. Readers are urged to review the document and the findings and to comment on both, either by letter or at public meetings. Copies of the letters received during the following three comment periods can be found in Volume 3, IDU Final EIS, April 1988.

Copies of the IDU Draft EIS were distributed in October, 1986, for a 10-week comment period (the original comment period was extended 2 weeks). During this time, two clarification sessions -- one for the IAP and one for the EIS -- were held to answer questions the public might have so they would be able to better formulate their comments. In addition, three public comment forums were conducted. A record was kept by an official recorder at each of the public comment forums, and transcripts of each were prepared for analysis. A summary of the these public comment forums is found immediately following the comment/response section of Part 1. Written comments were also received. Each written comment was logged and coded for reading and analysis. A total of 116 comment letters was received.

Copies of the Hydro Operations Information Paper were distributed on November 13, 1987, for a 7-week comment period. Close of comment for this document was December 31, 1987. A total of 24 comment letters was received.

Copies of the Revised Draft Long-Term Intertie Access Policy were distributed on December 15, 1987, for a 10-week comment period. This comment period included a 2-week cross-comment period which ran from February 8 through February 19, 1988. A total of 147 comment letters was received. Public comment forums were also held during this time period. This volume does not contain BPA responses to all of the issues raised in the comment letters or in the public comment forums. Those issues of an environmental nature are addressed in Part 3 of this volume. The remainder of the issues that are policy related will be addressed in the Administrator's Decision Document.

How the Comments were Identified

Deciding what is a comment is a challenging job, particularly when reading oral presentations given spontaneously. Accordingly, we defined comments as broadly as possible, in order to ensure that everyone who had something to say was heard. The definition of a comment that BPA used was:

> "A comment is an observation or an expression of opinion which posesses a clear subject and which suggests, assigns a value, makes a judgment, identifies a concern, or corrects an error."

As written comment letters were received in the agency, they were given a letter number to identify them. This letter number consisted of an acronym to identify the process to which comments pertained and sequential numbers to identify the specific comment submitted. Comments were then analyzed to identify the issues addressed. Each issue category has a separate code number. This system, as used throughout this volume, is illustrated below.

Sample from Section 1

00 GENERAL NEPA/PUBLIC INVOLVEMENT PROCESSES

00a Close of Comment Deadline

Many commenters felt that the comment period on the DEIS should be extended (PCF-2-08; PCF-3-02; PCF-3-05; 011-01; 013-02; 015-01; 017-01; 031-05; 041-04; 081-06)

Explanation

00	Identifies general issue.
GENERAL NEPA/PUBLIC INVOLVEMENT . . .	General issue category.
00a	Identifies sub-issue.
Close of Comment Deadline	Sub-issue category.
Many commenters felt	Summary of multiple comments.
PCF-2-08	Second commenter at Public Comment Forums on Draft EIS; issue is eighth one raised by commenter.
011-01	Commenter is TIE-1-11*; comment is first issue raised in letter.

*This number refers to letter number 11 in the the category of comments summarized in each part of this volume. PCF refers to a comment made at a Public Comment Forum. INC refers to a comment made in a letter that is incorporated by reference into the commenter's letter.

How to Find What You Want

Part 1 - Comments and Responses on the IDU Draft EIS and Proposed Long-Term Intertie Access Policy, logged in under TIE-1.

Part 2 - Comments and Responses on the Hydro Operations Information Paper, logged in under TIE-2.

Part 3 - Comments (environmental) and Responses on the Revised Draft Long-Term Intertie Access Policy, logged in as LTIAP-3.

At the beginning of each part of this volume is a list of the commenters with their letter numbers. This is followed by a list of the issue categories, issue numbers, and page numbers on which the comments pertaining to each issue category begin. The individual comments and responses are organized by issue.

How the Comments Were Analyzed and Answered

Responses to comments vary according to the nature of the comment as stated in CEQ Regulation 40 CFR 1503.4:

> "An agency preparing a final environmental impact statement shall assess and consider comments both individually and collectively, and shall respond by one or more of the means listed below, stating its response in the final statement. Possible responses are to:
>
> 1) Modify alternatives including the proposed action.
>
> 2) Develop and evaluate alternatives not previously given serious consideration by the agency.
>
> 3) Supplement, improve, or modify its analysis.
>
> 4) Make factual corrections.
>
> 5) Explain why the comments do not warrant further agency response, citing the sources, authorities, or reasons which support the agency's position and, if appropriate, indicate those circumstances which would trigger agency reappraisal or further response."

PART 1

Intertie Development and Use Draft EIS

IDU Draft EIS

Close of Comment: 1/16/87

Letter Number	Commenter/Affiliation
TIE-1-1	Sue Heath, Montana, Office of Lt. Governor
TIE-1-2	W.A. Best, R.D. Strilvie, B.C. Hydro
TIE-1-3	Robert W. Welch, Jr., Columbia Gas
TIE-1-4	Oregon State Clearinghouse
TIE-1-5	Dean Stepanek, Bureau of Land Management
TIE-1-6	Montana State Clearinghouse
TIE-1-7	California State Clearinghouse
TIE-1-8	Mel Huie, Metropolitan Service District
TIE-1-9	Ron Snyder, Kettle Falls Chamber of Commerce
TIE-1-10	R.W. Lindsey, Lincoln County, Montana
TIE-1-11	Lorraine Stark, Friends of the Greensprings
TIE-1-12	Governor Victor Atiyeh, Oregon
TIE-1-13	Al Wright, Pacific Northwest Utilities Conference Committee
TIE-1-14	Dennis E. Rohr, Mid-Columbia Public Utility Districts
TIE-1-15	Douglas W. Frank, Friends of the Greensprings
TIE-1-16	Greg Bowers, P.E., G.H. Bowers Engineering
TIE-1-17	E.W. Lubking, Public Generating Pool
TIE-1-18	Stan Reed, Engineering Design Associates/Phone Comment
TIE-1-19	John W. Keys, III, Idaho, U.S. Dept. of Interior, Bureau of Reclamation
TIE-1-20	Howard F. Easton, Basin Electric Power Coop
TIE-1-21	Elwin Bennington, Flathead Basin Commission
TIE-1-22	Gene Maudlin, PUC of Oregon
TIE-1-23	Robert P. Dalley, Utah Dept. of Health
TIE-1-24	Dolores Streeter, Oregon Executive Dept.
TIE-1-25	Chester A. Johnson, B.C. Hydro
TIE-1-26	John Brown, New Mexico State Clearinghouse
TIE-1-27	James E. Thompson, City of Tacoma
TIE-1-28	Dave D. Rachetto, Bureau of Reclamation
TIE-1-29	James W. Beck, Transmission Agency of Northern California
TIE-1-30	James W. Beck, Transmission Agency of Northern California
TIE-1-31	Michael Grainey, Oregon Review Committee
TIE-1-32	Norman C. Boberg, Turlock Irrigation District SHOULD BE REPLACED WITH #96
TIE-1-33	Michael C. Weland, Oregon Dept. of Fish and Wildlife
TIE-1-34	Barbara D. Rhodes
TIE-1-35	Adele Newton, Oregon League of Women Voters
TIE-1-36	Mark D. Kelley, Northern Plains Resource Council
TIE-1-37	Michael T. Pablo, The Confederated Salish and Kootenai Tribes of the Flathead Reservation
TIE-1-38	Marc Sullivan, Northwest Conservation Act Coalition
TIE-1-39	Andy M. Rustemeyer, Lincoln County Board of County Commissioners, Washington
TIE-1-40	Ray Foleen, Non-Generating Public Utilities
TIE-1-41	Ron Snyder, Kettle Falls Chamber of Commerce, Phone Comment
TIE-1-42	Gregory H. Bowers, G.H. Bowers Engineering
TIE-1-43	Peter G. Fairchild, California Public Utilities Commission

IDU Draft EIS

(continued)

Letter Number	Commenter/Affiliation
TIE-1-44	Terence L. Thatcher, National Wildlife Federation
TIE-1-45	Chandler A. Swanberg, GEO Operator Corporation
TIE-1-46	Michael J. Cale, GEO Operator Corporation
TIE-1-47	David Cottingham, Nation Marine Fisheries Service and Dale R. Evans, National Oceanic and Atmospheric Administration
TIE-1-48	Norman R. Schultz, Paul Converse, Harlan H. Humiston, Central Oregon PUD
TIE-1-49	Bill J. Graham
TIE-1-50	Terry Boner, Northwest Pulp and Paper
TIE-1-51	George Miller, Committee on Interior and Insular Affairs
TIE-1-52	Charles R. Imbrecht, California Energy Commission
TIE-1-53	Channing D. Strother, Jr., City of Vernon, California
TIE-1-54	Daniel O. Flanagan, Montana Power Company
TIE-1-55	Sharon L. Nelson, Robert W. Bratton, Richard Casad, Washington Utilities and Transportation Commission
TIE-1-56	Jerry Garman, Public Generating Pool
TIE-1-57	J.W. Marshall, Idaho Power Company
TIE-1-58	Mark Crisson, Direct Service Industries, Inc.
TIE-1-59	W. Lester Bryan, Washington Water Power
TIE-1-60	James R. Fry, U.S. Army Corps of Engineers
TIE-1-61	Barbara J. Ritchie, Washington Dept. of Ecology
TIE-1-62	J. Leon Smith, Cowlitz County Public Utility District
TIE-1-63	Richard Butler, Seattle Audubon Society
TIE-1-64	John A. Charles, Oregon Environmental Council
TIE-1-65	Teresa Giacomini, The Friends of the Earth
TIE-1-66	Joseph R. Blum, State of Washington, Dept. of Fisheries Double-logged, see #69
TIE-1-67	Sharon W. Mays, San Diego Gas & Electric
TIE-1-68	Robert W. Kendall, Southern California Edison
TIE-1-69	Joseph R. Blum, State of Washington, Dept. of Fisheries
TIE-1-70	Arnold Appenay, The Shoshone-Bannock Tribes
TIE-1-71	R.G. Bailey, Puget Sound Power & Light Company
TIE-1-72	Jim Jones, Attorney General, State of Idaho
TIE-1-73	J. Calvin Simpson, California Public Utilities Commission
TIE-1-74	David J. Mahoney, Los Angeles Dept. Water & Power
TIE-1-75	Stuart K. Gardiner, Pacific Gas & Electric Company
TIE-1-76	Ralph Cavanagh, Natural Resources Defense Council
TIE-1-77	John Savage, Oregon Department of Energy
TIE-1-78	Michael S. Rossotto, Friends of the Earth
TIE-1-79	Thomas A. Lockhart, Pacific Power & Light Company
TIE-1-80	Joseph W. Nadal, Jr. Pacific Northwest Generating Company
TIE-1-81	Ed Chaney, Northwest Resource Information Center, Inc.
TIE-1-82	Garry W. Kunkel, Eugene Water & Electric Board
TIE-1-83	Larry M. Kellerman, Portland General Electric Company
TIE-1-84	John McMahan, Grant Co. PUD; Gerald L. Copp, Chelan Co. PUD; Eldon Landin, Douglas Co. PUD

IDU Draft EIS

(continued)

Letter Number	Commenter/Affiliation
TIE-1-85	Al Wright, Pacific Northwest Utilities Conference Committee
TIE-1-86	Joe D. Hall, U.S. Department of Energy
TIE-1-87	S. Timothy Wapato, Columbia River Inter-Tribal Fish Commission
TIE-1-88	Terry Mundorf, Western Public Agencies Group
TIE-1-89	Edward and Marilyn Livingston
TIE-1-90	Randall W. Hardy, Seattle City Light
TIE-1-91	Merrill S. Schultz, Intercompany Pool
TIE-1-92	R.V. Stassi, City of Glendale, California
TIE-1-93	Marcia G. Lagerloef, U.S. Environmental Protection Agency
TIE-1-94	Huston T. Carlyle, Jr., California Office of Planning and Research
TIE-1-95	Larry Calica, The Confederated Tribes of the Warms Springs Reservation
TIE-1-96	Norman C. Boberg, Turlock Irrigation District REPLACEMENT FOR #32
TIE-1-97	John H. Whalen, Mason County PUD
TIE-1-98	George and Nancy Blount
TIE-1-99	Judy A. Thomas, Sally M. Gibson, League of Women Voters of Idaho
TIE-1-100	John P. O'Banion, Sacramento Municipal Utility District
TIE-1-101	REMOVED FROM LOG: Replacement pages for TIE-1-72
TIE-1-102	J.W. Marshall, Idaho Power Company
TIE-1-103	Bruce Blanchard, U.S. Department of the Interior
TIE-1-104	Al Williams, Washington State Senate
TIE-1-105	David Geist, Upper Columbia United Tribes - Fisheries Research Center
TIE-1-106	Steven Siegel, Metropolitan Service District
TIE-1-107	Ken Canon, Industrial Customers of Northwest Utilities
TIE-1-108	James E. Brown, State of Oregon, Forestry Department
TIE-1-109	Donald B. Gregg, Montana Power Company
TIE-1-110	Robert Duncan, Northwest Power Planning Council
TIE-1-111	Paul Schmechel, Montana Power Company
TIE-1-112	Michael S. Rossotto, Friends of the Earth
TIE-1-113	G.R. Garman, Public Generating Pool
TIE-1-114	Al Wright, Pacific Northwest Utilities Conference Committee
TIE-1-115	Jim Jones, Attorney General, State of Idaho
TIE-1-116	Einar Wold, National Oceanic and Atmospheric Administration

Issues List

B00 GENERAL NEPA/PUBLIC INVOLVEMENT PROCESSES

00a Close of Comment Deadline

Many commenters felt that the comment period on the Draft EIS should be extended (PCF-2-08; PCF-3-02; PCF-3-05; 011-01; 012-01; 013-02; 015-01; 017-01; 031-05; 041-04; 081-06)

Response:

BPA originally scheduled a 60-day comment period on the IDU Draft EIS to conclude on January 2, 1987. This period was subsequently extended to run through January 16. This extension was granted in light of the holiday period which came at the end of the originally scheduled comment period.

00b Supplemental Draft EIS

00b1 A revised draft EIS or supplemental EIS should be prepared and circulated for public comment, especially because of the inadequate discussion of fish and wildlife mitigation measures, which currently violate the Act's equitable treatment standard. (072-02, 03; 072-49; PCF-2-10-11; 047-82; 075-23; 069-10, 35)

Response:

Measures which could be used to mitigate the effects of spill and flow changes on survival of downstream migrant fish are discussed at page 4.5-28 of the IDU Draft EIS. Discussion of potential mitigation measures for fisheries effects is also provided in those instances where mitigation may be needed in Section 4.2.3 in the IDU Final EIS.

BPA considered both the results of the analysis contained in, and the comments received on, the Hydro Operations Information Paper in deciding not to issue a revised or supplemental EIS. The decision was based on the conclusion that the findings did not differ substantially from those presented in the IDU Draft EIS.

00b2 The procedures used in developing the proposed Long Term IAP violate ratemaking practices and the draft policy should be reissued, along with a new EIS. (052-15).

Response:

The 9th Circuit in C.E.C. v. Johnson, held that the IAP is not a rate.

00c Relationship to Other Actions

00c1 The EIS needs analysis of the larger whole -- the operation of the Intertie network and the operation of the regional hydropower system, to show the true environmental cost of the proposals and what mitigation measures are necessary. An EIS for cumulative effects of all extraregional sales policies may well be required. (072-06, 070-14; 044-02)

Response:

The scope of the IDU Final EIS focuses on the impacts of the Intertie decisions on operation of the regional hydropower system as well as regional thermal resources and generation resources outside the Pacific Northwest. The scope does not include a comprehensive examination of the operation of the regional hydropower system from the standpoint of factors that do not depend on the Intertie decisions addressed in this EIS.

00c2 BPA should prepare a comprehensive Draft EIS encompassing all related actions including the Terminal Expansion Project, any related future actions, and the comprehensive fish/power plan required by the Act. (081-05)

Response:

The Draft EIS contains analyses of a wide range of potential alternative actions related to the intertie and operations of the hydrosystem including the DC expansion project. The fishery analyses are comprehensive with respect to potential hydroelectric futures. The analyses of impacts reflects the recent trends in fish populations, including wild fish, and further mitigation and protection contemplated in the Fish and Wildlife Program of the Northwest Power Planning Council (Council). The requirements of the Northwest Power Act (Act) and the measures of the Council's Fish and Wildlife Program were fully integrated into the fish and wildlife analyses supporting the Draft EIS. The final EIS also contains analyses of environmental effects of a variety of Intertie decisions including the DC expansion project.

00c3 B.C. Hydro's Site C could become a connected action if BPA's and other economic studies do not show sufficient benefits without additional sources of power. (075-36)

Response:

BPA has no proposal with respect to Peace River Site C. If and when BPA proposes any action with respect to Site C, appropriate NEPA work will be performed in conjunction with each proposal. Each of the actions within the scope of the IDU EIS are justified independently of Site C. If Site C ever ripens into a proposal for action, it will be justified independently of the actions now under consideration. Thus Site C is not now a "connected action" such that it belongs within the scope of the IDU EIS.

00c4 BPA should seek comment before it decides whether or not to build the 3rd AC. (104-01)

Response:

BPA has been participating as a cooperating agency in the development and preparation of the California-Oregon Transmission Project Environmental Impact Statement. BPA staff have attended numerous forums for public comment relating to the COTP EIS. The COTP EIS addresses the physical environmental impacts associated with development of the COTP as well as northwest system reinforcements needed to accommodate the additional capacity. Additionally, the effect of expanding Intertie capacity with the COTP/Third AC is addressed in the Intertie Development and Use EIS. The issue of the effects of this additional capacity on the Northwest as well as on California has been addressed in several public comment forums offered by BPA during the development and review of the IDU Draft EIS.

00c5 BPA should evaluate how its LTIAP could affect other Interties. (075-32)

Response:

The possibility of additional alternative Intertie development is discussed in the Draft EIS, Section 1.4.3.2. Presumably a highly restrictive Long Term Intertie Access Policy could provide some incentive for other utilities to develop Interties which would not be subject to such restrictions. However, the conditions of the proposed LTIAP are not expected to provide such an incentive. Rather, it is anticipated that the decisions concerning construction of additional Intertie capacity will be made based on the economic and environmental costs and benefits of such actions.

00c6 On two issues, BPA's inaction is well-considered and beneficial. Because the Draft EIS omits analyses of independent Intertie ownership and the construction of BC Site C dam, neither of these proposals is in any way advanced by either the Draft EIS or policy. (076-16)

Response:

In the draft EIS BPA chose not to devote substantial effort to analyzing the potential effects of construction of the Site C dam or of independent Intertie ownership. At that time, neither action had evolved to the stage of a proposal. BPA's position with regard to the Site C issue remains unchanged. A discussion of the participation process for the Third AC Intertie has been added to the IDU Final EIS (see Section 2.2.3).

00d Structure/Format of EIS

00d1 The Draft EIS is difficult to read and fully comprehend: remove data and analyses that are strictly informational; provide more "in text" definitions and explanations; make more use of absolute numbers; provide more supporting documentation and rationale; use larger type. (069-01)

Response:

BPA has made efforts to simplify the narrative portion of the IDU Final EIS. Technical data have been moved to appendices and each section begins with a summary paragraph of what that section contains.

00d2 Chapter 2 - The Draft EIS does not clearly state which of the decision packages has been proposed for adoption in the LTIAP or which is the preferred alternative. (047-28; 072-28)

Response:

According to CEQ regulations Section 1502.14(e), identifying an agency's preferred alternative is mandatory for a Final EIS, but not in a Draft EIS. At the time the draft EIS was issued, BPA had not identified a preferred alternative. The Final EIS does now indicate (Chapter 2) BPA's preferred alternative decision package.

00d3 Section 4 - Environmental Consequences. Mitigation measures for various environmental impacts should be discussed more prominently and should be referenced in the table of contents for accessibility. The effects of implementing various mitigation measures on the viability of Intertie alternatives should be evaluated. (090-38)

Response:

Expanded discussion of mitigation measures for environmental impacts has been provided in the Final Environmental Impact Statement.

00d4 Do not present only bottom line results from a "black box" but give annual and other breakdowns of the results and present examples of each system's operation with and without the proposal. (042-13)

Response:

Appendices C through I of the Final EIS include annual data for many of the environmental parameters. Because of the tremendous volume of data that would be involved in preparing a 20-year study of many of the environmental parameters, for several crucial parameters (e.g., air quality, fish) analysis was prepared for 4 representative study years.

00d5 The EIS is too general, the relationship between the policy and the environmental analysis is unclear, and the summary does not clearly stress the major conclusions or the choice among alternatives as required by the NEPA. (098-03; 069-09; 047-27)

Response:

BPA's analysis in the Draft EIS shows that the potential impacts of BPA's Intertie decisions are both broad-ranging (from Canada to New Mexico, California to Montana) and complexly related. BPA made its best effort in the Draft EIS to focus on the major environmental impacts of decision alternatives, and to look at the impacts of each potential Intertie decision separately and in combination. In response to public comment on the Draft EIS, BPA has further refined the presentation and conclusions of the EIS studies for the Final EIS. See also the response to comment 00d2.

00d6 The IDU EIS needs to explain the relationship between local short-term uses of man's environment and maintenance and enhancement of long-term productivity. (068-17)

Response:

Several sections of the EIS address this issue. Chapter 4.3 addresses the use of nonrenewable resources and land under various Intertie alternatives. In addition, Section 4.4 includes an analysis of long-term resource development under alternative Intertie policy and capacity decisions. Several other sections of Chapter 4 also address various aspects of the issue of resource use, and Chapter 2 includes a comparison of the major environmental effects of each alternative.

00d7 There should be separate sections for the discussion of fish and wildlife impacts and water quality impacts. (019-19)

Response:

Many potential fish impacts are directly related to water quality or use impacts (e.g., the effects on fish of thermal pollution or water withdrawals for thermal plant cooling). Because fish and water quality and use are so directly related, BPA decided it would be appropriate to address both impacts in a common discussion for impacts related to thermal generation. Effects on fish resulting from hydroelectric operations are now discussed in one section within the discussion of impacts from the hydroelectric system, 4.2.3.

00d8 The EIS does not contain sufficient information to support a conclusion that environmental impacts of reducing the level of power exchanges between the PSW and PNW are more or less benign than facilitating such exchanges. (096-05)

Response:

The effects of seasonal exchanges are illustrated in the Final EIS by comparisons between the Assured Delivery and Assured Delivery Alternatives #1, #2, and #3. Whereas Assured Delivery includes 425 MW of seasonal power exchanges, the amount of such exchanges is increased to 725 MW in Alternative #1, to 1,175 MW in Alternative #2 and 925 MW in Alternative #3. The results of these analyses are reported in Chapters 2 and 4 of Volume 1.

00e Approvals

00e1 The following agencies approve of the EIS as adequate analysis for the proposed actions: Montana Intergovernmental Review Clearinghouse, Transmission Agency of Northern California, U.S. Environmental Protection Agency, U.S. Department of the Interior, Metropolitan Service District. (006-01; 029-01; 093-01; 103-04; 106-01)

Response: No response necessary.

00f General/Other

00f1 The IDU EIS should discuss the LTIAP issue paper as well as the proposed policy. (047-26)

Response:

The IDU Final EIS addresses those issues raised in the issue paper that are relevant to environmental concerns. The Administrator's Record of Decision will address policy related issues that are outside the arena of environmental effect.

00g Need For More Detailed Information On Models

00g1 The EIS should disclose in detail the inputs, assumptions, major outputs from the models, formulas for major items in the models, etc. Some commenters suggested the addition of a Technical Appendix to the EIS. (052-14; 073-02, 073-27; PCF-2-10-03)

Response:

The appendices to the Draft EIS contained much detailed information on assumptions, models, and data sources. Additional information was provided to reviewers at their request. Because several commenters on the Draft EIS recommended providing more technical information in the EIS appendices, those appendices have been expanded in the Final EIS to provide more of the backup technical information.

00h Incorporate by Reference

00h1 Many comments requested that previous comments on Intertie issues and the DC Terminal Expansion EA be incorporated by reference. (044-05a, 17a; 047-19a; 068-01a; 076-01a; 087-07a)

Response:

Their previous comments were resummarized in their comment letter and these comments are responded to in the appropriate issue category.

00h2 One commenter requested that the minutes of the Mainstem Passage Advisory Committee (MPAC) and appended reports be incorporated by reference. The minutes and the reports discuss the FISHPASS model, its assumptions, the parameters, and problems with the model. Many other commenters summarized their concerns with FISHPASS in their comments, alluding to this information. (072-16a)

Response:

BPA was an active member of the Mainstem Passage Advisory Committee (MPAC) and used the FISHPASS passage parameters developed by MPAC in the Draft EIS. BPA's Division of Fish and Wildlife has reviewed the minutes and reports, and responses to comments as well as changes in text in the Final EIS take into consideration the MPAC information. The minutes and appended reports from MPAC are referenced in the Final EIS.

00h3 One commenter specifically incorporated into his comment correspondence between BPA and NMFS regarding the effectiveness of the fish and wildlife conditions found in the Near Term Policy. (044-14a)

Response:

No response needed.

00h4 Two commenters requested that their comments on BPA's proposed response to a challenge under the Near Term Policy be incorporated into the IDU EIS/Long Term IAP record. Most of the comments they made in their letters had been summarized in their previous letters on the IDU EIS and Long Term IAP. (INC-005; INC-006)

Response: No response necessary.

B01 PURPOSE AND NEED

01x General

01x1 BPA should clarify the decisions to be made to indicate that (a) future BPA decisions are required at different times and are not totally interdependent; and that (b) decisions on the COTP are made by other utilities and are not necessarily dependent on BPA's decisions. (029-02, 03)

Response:

Upgrading the AC Intertie system between the Pacific Northwest (PNW) and California will require decisions by several organizations. COTP participants, including Western, must decide whether or not to construct the COTP. The decision of the lead agencies (Western and TANC) is expected in 1988. Bonneville Power Administration's (BPA) Administrator must decide whether to allow interconnection of the COTP to the existing Intertie system and to upgrade the existing PNW Intertie system in order to support the additional capacity of the COTP. BPA has contractual rights and responsibilities with Pacific Power & Light (PP&L) to construct and own the interconnection between the COTP and PNW system, although responsibilities for interconnection still must be negotiated between the COTP participants and PNW entities. In California, the Public Utilities Commission must approve the participation by investor-owned utilities through a Certificate of Public Convenience and Necessity.

01x2 Define the goals and objectives of the Power Marketing Program. (082-14)

Response:

The goals and objectives of the Power Marketing Program are included in the definitions section of the Proposed Long-Term Intertie Access Policy under Section 1.2.

01a Need

01a1 The EIS should discuss the need for and the content of the IAP. One commenter recommends reconsidering the need for the LTIAP in light of the mutual benefits and advantages of transactions in an open market. (086-01; PCF-2-009-03)

Response:

The need for the Intertie Access Policy is covered in Section 1.3.2 in the IDU Final EIS. The Proposed IAP is included as Chapter 5, Volume 1 of the IDU Final EIS. The open market concept was analyzed as the Pre-IAP alternative in the IDU Final EIS.

01a2 The need for the proposed actions is not adequately described. The EIS should analyze how much expanded Intertie capacity is required under various marketing scenarios, rather than assume all expansions are needed. (PCF-2-009-01; 047-07)

Response:

The need for the proposed actions is described in Volume 1, Section 1.1. Four Intertie capacity levels were identified and analyzed in the IDU EIS under the various marketing scenarios. The description of these four levels can be found in section 2.1.

01a3 The EIS fails to address CA's needs for NW power. (104-02)

Response:

The Final EIS assumes as input data the CFM-VI load and resource forecast for California. It is assumed that California utilities would be interested in purchasing any resource which costs less than 75 percent of their decremental costs. Purchases of PNW power would primarily be used to displace higher cost California resources. Sensitivity analyses of effects of variations in California load and gas prices are included in the Final EIS.

01b Purposes

01b1 The Draft EIS has not adequately addressed consistency with the PNW Power Act, including the Council's Fish and Wildlife Program. Alternatives and analysis of impacts do not relate to the fundamental mandate to "protect, mitigate, and enhance fish and wildlife including related spawning grounds and habitat." BPA cannot engage in activities in a manner inconsistent with the Council's fish and wildlife program. (070-03, 04; 069-11)

Response:

In developing alternatives for consideration under NEPA, a Federal agency is not to constrain itself to only those alternatives that would be consistent with existing legislative mandates. NEPA documents can analyze the environmental and other effects of proposals which would require a change in legislation. However, unless legislative changes are included in the selected alternative, the implemented action must follow the directives of existing law.

Alternatives within the IDU Final EIS meet BPA's and the Act's requirements to protect, mitigate, and enhance fish and wildlife, to provide an equitable balance between fish and power, and are consistent with the Council's Fish and Wildlife Program.

01b2 BPA does not need LTIAP to enhance ability to repay U.S. Treasury. (075-28)

Response:

As noted in Section 1.2, one of the main Congressional purposes in constructing the Intertie was to insure that BPA had a market for its surplus power. Congress also felt that the revenues from these surplus power sales would make it easier for BPA to repay the Federal investment in the BPA system in a timely manner. Because BPA's Pre-IAP Intertie practices led to substantial revenue loss, an Intertie Access Policy is needed to assure BPA's ability to meet the Congressional mandate.

01b3 The LTIAP should not be used to shift benefits from CA to PNW. (075-29).

Response:

This comment has been noted.

01b6 Why is "support acceptable environmental quality" a purpose? BPA should use the IAP as an energy management tool for long-term stability and leave environmental regulation to the appropriate entities and mechanisms. (077-06; 085-06)

Response:

BPA, like all Federal agencies, is required by the National Environmental Policy Act to take into account the environmental consequences of its major actions with a potential for environmental impact. The purpose of the Act is to promote the preservation and enhancement of environmental quality. BPA believes its statement of purpose is consistent with the goals of NEPA.

01b7 The Draft EIS describes BPA's environmental mission unsatisfactorily: "to support acceptable environmental quality." (076-17)

Response:

Please see the response to comment 01b6.

01c Authorities

01c1 How is BPA's choice of an IAP to increase revenues consistent with Congressional intent? It is an oversimplification to say that BPA receives revenues from power which would otherwise be wasted. (073-08; 075-31; 077-07)

Response:

See the discussion under 01b2.

01c2 BPA has inaccurately characterized much of the history surrounding NTIAP history and should cite an additional legal challenge: FERC Docket No. E185-6 brought by the CA parties. (075-33, 35)

Response:

The California Public Utilities Commission, and other California parties, challenged the Intertie Access Policy at the Federal Energy Regulatory Commission (Commission), arguing that the policy was a change in BPA's rates. U.S. Department of Energy, Bonneville Power Administration, 33 FERC ¶ 61,235, 61,487 (1985).

The Commission held that the policy did not constitute a change in rates. Id. at 61,489. See also Order Denying Rehearing Requests, 39 FERC ¶ 61,088, 61,238 (1987).

01c3 BPA's references to its "own intertie" in 1.4.4.2 overlooks the fact that the lines were built for all PNW utilities, and BPA must take into account the impacts of its actions on other PNW utilities. (PCF-2-03-01; 079-13)

Response:

BPA's references to its "own Intertie" were merely intended to distinguish BPA's interests from Pacific Power and Light Company and Portland General Electric's ownership interest. BPA's portion of the Intertie is to be used for the transmission of Federal surplus power and energy, and also to be made available for the use of other Pacific Northwest utilities.

01c4 Page 1-7, paragraph 3, 5the line should be ". . . COTP EIS/EIR, . . ." Sixth line should be a comma (,) after IDU EIS. Last line after "benefits," should read "benefits to COTP participants . . ." Add to the last sentence: "PSW, as discussed in the COTP EIS/EIR." (068-20)

Response:

Proposed wording change incorporated.

B02 CAPACITY ALTERNATIVES

02x General

02x1 The capacity alternatives are primarily for CA's benefit. (PCF-3-01-02)

Response:

BPA's analysis predicts substantial net benefits of Intertie upgrades (see Section 4.5). The distribution of benefits between the PNW and California will depend on the size and price of the markets in both regions, the prices charged for economy energy, and the prices agreed upon for contract sales of firm capacity and energy. BPA believes that substantial benefits can be realized by both regions.

02x2 The capacity and policy alternatives examined by BPA bracket the likely possibilities and reveal the maximum impacts that might occur. (085-02)

Response:

BPA designed the EIS studies in order to analyze the likely possibilities and reveal the maximum impacts of BPA Intertie

decisions. In addition, the Final EIS includes sensitivity analyses to look at the effects of varying some of the assumptions used in the Intertie studies.

02a Existing Capacity

02a1 It would be more accurate to complete the analysis based on the current situation and not speculate about the success of the potential 400 MW increase. (073-10)

Response:

The AC Intertie system was upgraded to 3200 MW in May 1987. It would be inappropriate not to reflect that change in the EIS analysis.

02a2 The current 5200 MW capacity decision should be one of the possible alternatives. We cannot support any of the proposed alternatives in the EIS and recommend the Intertie be left at existing capacity. (105-02, 07)

Response:

The existing or no-action alternative involving an Intertie capacity level of 5200 MW is, in fact, one of the possible alternatives addressed in the Draft and Final Environmental Impact Statement.

02b DC Terminal Expansion Project

02b1 Calling the base case "DC Upgrade" and presenting another as the base case only serves to confuse the issue. Also deceptive is the omission in most tables of the incremental effect of the proposed project. (042-10)

Response:

The analyses in the Draft EIS portray the existing Intertie capacity as a base case condition. The DC upgrade was not characterized as a base case and its incremental effect relative to the existing capacity situation is illustrated in virtually all of the tables throughout the Draft EIS.

02b2 The DC Terminal Expansion should have been treated as a viable alternative, not as a given, and not as a base case. (PCF-2-09-04; 047-09; 044-01)

Response:

The DC Terminal Expansion was, in fact, not treated as a base case in the IDU EIS analyses. Rather, the existing capacity of the Intertie system was treated as a base condition. The IDU Final EIS also treats existing capacity as a base option. The DC

Upgrade is considered as an alternative throughout the Final EIS and was also addressed in that manner in BPA's Hydro Operations Information Paper.

02b3 DC Terminal Expansion Project does have significant impacts; the FONSI is inappropriate. (047-30)

Response:

BPA has responded to questions and comments on the DC Terminal Expansion EA, FONSI and Record of Decision regarding the DC Terminal Expansion Project (10/86).

Results of analyses for the Hydro Operations Information Paper and the IDU Draft and Final EISs confirm that the environmental effects of the DC Upgrade are not projected to be significant.

02b4 Table 4.2.14 shows additional generation in 2002 providing a maximum of 319 aMW which could be handled by the DC Upgrade. (077-10)

Response:

The value of upgrading the Intertie is due not only to the additional energy that can be transmitted over the larger transmission capacity, but also the ability to transmit more of the existing energy during periods when it is most valuable to California, and, therefore, commands a higher price for the PNW seller.

02b5 The EIS dramatically overstates the benefits of the DC Terminal Expansion. DC Terminal Expansion Project will not be used in support of firm sales. (PCF-2-11-01; 083-07)

Response:

The Draft and Final EIS analysis assumed that the DC terminal expansion would be used for nonfirm sales. There were no new firm contracts added due to the Terminal Expansion in the economic analysis.

02b6 BPA's economic analysis of the benefits of expanding Intertie capacity should reflect the fact that about half the DC Terminal Expansion Project costs is borne in the PNW, while about 1/3 of the 3rd AC costs will be charged to the PNW. (083-12)

Response:

The economics of the Draft EIS were based on impacts to the combined PNW and PSW systems. Construction costs are based on the plan-of-service for the respective projects. For both projects, it is assumed that the cost of facility additions in California is borne by Pacific Southwest utilities, while those facilities north

of the border are paid for by the Pacific Northwest. Analysis of the benefit of each project as a whole (rather than the benefits to each region) was used because it was assumed that parties would negotiate for best position in distribution of benefits.

The IDU Final EIS also presents an analysis of total benefits in Volume 1, Section 4.5. An analysis of a hypothetical split of benefits between the Northwest, British Columbia and California is presented in Appendix I, Volume 4.

02b7 The DC Terminal Expansion Project has much greater losses, lower stability, and less access to markets: therefore, the DC Terminal Expansion Project will actually be loaded only after existing facilities and 3rd AC facilities are loaded. (PCF-2-11-03, 04)

Response:

In assessing the economic viability of any incremental increase, one usually measures the benefits and costs of the incremental increase relative to the system that exists without the increase. This is the basic philosophy used in evaluation of the 3rd AC/COTP. The analysis in the Draft EIS also examines the value of each Intertie independently and in combination assuming use only for nonfirm sales. See also response to comments 02b10 and 02b11. BPA recognizes that the DC Terminal Expansion Project has greater losses than the AC system. These losses are accounted for in the economic analyses.

02b8 The DC Terminal Expansion Project, which reaches the southern California market, is better because many FERC-PURPA projects are currently in the construction or permitting phases in northern California, where they will compete for power with PNW imports but do little to meet the demand for power in southern California. (046-04)

Response:

According to quarterly reports submitted by Pacific Gas & Electric, Southern California Edison, and San Diego Gas & Electric to the California Public Utilities Commission in late 1986, there are about the same number of MWs of FERC-PURPA resources (commonly referred to as QFs (qualifying facilities) currently operating in northern and southern California. However, when looking at QFs which have signed contracts but are not yet operating, and QFs under discussion with utilities, northern California has nearly 30 percent more MWs being developed than are being developed in southern California.

02b9 Losses on the DC facilities are about 20 percent, versus 7-10 percent on the AC Intertie, making the DC Intertie upgrade impractical for long-term firm contracts. (083-08)

Response:

See 02b5 and 02b7.

02b10 The DC line provides access to a limited portion of the Southwest market compared to the AC Intertie. (083-09)

Response:

Currently, the DC system provides access to Los Angeles Department of Water and Power, the cities of Burbank, Glendale, and Pasadena, Southern California Edison, Pacific Gas and Electric and San Diego Gas and Electric. This is a significant share of the California market.

02b11 The viability of firm sales at a level above 2000 MW on the DC Intertie is unlikely without additional equipment and the support of the Third AC facilities, whose costs are not included in the DC upgrade estimates. (083-10)

Response:

The DC Terminal Expansion Project is designed to meet Western Systems Coordinating Council Reliability Criteria both with and without the Third AC project. All necessary facilities for the D.C. Terminal Expansion are included in the Plan-of-Service for that project. See also, comment 02b5.

02b12 During most months, under median water, the DC upgrade will be lightly loaded or unloaded while the Third AC continues to be loaded. (083-11)

Response:

The Final EIS includes data on secondary sales by Intertie (Figure 4.5.3). One of the major benefits of additional Intertie capability is that it provides additional access to California markets during peak California load hours. As discussed in Chapter 2 of the Final EIS, the DC Upgrade and 3rd AC also have access to different markets. During some months of the year, it is expected that the Intertie upgrades will be heavily loaded. Please see response to 02b4.

02c Proposed 3rd AC Intertie Project

02c1 Congress did not intend the Intertie to expand from 6300 MW to 7900 MW. DOE should recognize that the mandate of Congress has been accomplished, and give the 3rd AC project a critical review. (042-01)

Response:

The proposed Third AC Intertie Project/California-Oregon Transmission Project is being analyzed under a separate environmental review process. The Transmission Agency of Northern California is the lead state agency and the Western Area Power Administration is the lead Federal agency. Congressional authority for the Third AC project is contained in the joint Final Environmental Impact Report/Environmental Impact Statement prepared by the above agencies.

02c2 Figure 3.7 in the Draft EIS, showing less than 1000 aMW of firm surplus power for the Pacific Northwest in 1990-91, casts doubt on the need for the Third AC. (077-09)

Response:

As noted in the response to 02b4, the value of upgrading the Intertie includes more than the sale of firm surplus energy. After the PNW's firm surplus energy has declined to zero, the upgrades will continue to be valuable for nonfirm energy sales, firm transactions, and the increased ability to transmit power during peak load hours. Chapter 4.5 of the Final EIS includes revised estimates of the value of the Intertie upgrades.

02c3 BPA should show that the 3rd AC line is needed for firm or guaranteed contracts to be signed. (PCF-08-04; PCF-3-02-03)

Response:

BPA's analysis suggests that the addition of the Third AC/COTP will give the PNW access to additional California markets and relieve transmission constraints, allowing the PNW to develop an additional 600 MW of firm contracts with California. The 600 MW figure was the result of BPA's analysis and judgment about the size of the California market and existing transmission limitations.

02c4 Equitable rates for energy received incidental to capacity delivery is an alternative to the project which costs virtually nothing and should be considered. (042-15b)

Response:

BPA bases its rates for each service on the cost to provide that service. It is unlikely that a utility would invest the large sums necessary to build an intertie if the only benefit was a better bargaining position in rate matters. Both PNW and PSW utilities would need to see concrete benefits from a project before agreeing to go forward with a commitment of funds.

02c5 The Draft EIS dramatically understates the benefits of the Third AC. (083-06)

Response:

The Final EIS analyzed the addition of the 3rd AC both with and without firm contracts. BPA concluded that an additional 600 MW contract could be supported with the addition of the 3rd AC.

02c6 P. 4.4-1, seventh paragraph, first line, should be changed to read, in northern, central, and southern California. Also, the two sentences beginning with "nonetheless" and ending with "from the Third AC/COTP" should be changed to read as follows: "Nonetheless, some of the COTP participants are southern California utilities; consequently, the construction of COTP would result in more PNW electrical resources being sold to Southern California." (068-23)

Response:

Analysis for the Final EIS predicts that the Third AC/COTP, alone or added after the DC Terminal Expansion, will lead to more PNW energy being sold to Southern California. However, less energy will be sold to Southern California with the addition of the Third AC/COTP compared with the DC Terminal Expansion project, which directs more energy to Southern California.

02c7 The Draft EIS notes that the CPUC is expected to release a decision on the project by January 1988; the CPUC decision is expected between January 1988 and April 1988. (073-17)

Response:

On February 16, 1988, the California Public Utilities Commission rejected the applications of Pacific Gas and Electric, San Diego Gas and Electric, and Southern California Edison for certificates of public convenience and necessity to construct and operate the California/Oregon Transmission Project. The utilities were encouraged to submit a new application for the project within 60 days.

02c8 The discussions of the possibilities of 800 MW being made available to PNW generating utilities through a subscription process should be open to public comment. (097-02)

Response:

If and when a proposal to make 800 MW of Intertie available to Pacific Northwest generating utilities is developed, BPA will perform additional work to comply with the National Environmental Policy Act, affording additional opportunity for public comment. A study of options for participation by Pacific Northwest non-Federal utilities in the northern portion of the Third AC Intertie was undertaken by the Bonneville Power Administration in response to a request made in June 1987 by several members of

Congress who suggested that this issue required full consideration by the agency.

The Northwest participation study was conducted in consultation with the public, including potential participants in the Third AC Intertie and a technical Peer Review Panel consisting of utility, government, and interest group representatives from the Northwest and California. Publication of the draft report in late January 1988 began a 30-day public review period. A final study will be prepared and submitted to Congress.

02d Maximum Intertie Capacity

02d1 The EIS should state any unavoidable adverse impacts and identify any irreversible and irretrievable commitments of resources involved in Maximum Upgrade. (068-16, 19)

Response:

The Environmental Impact Statement contains information on unavoidable adverse impacts and the irreversible and irretrievable commitment of resources in several locations. (See, for example, Section 4.3.)

02d2 P. 2-2, under 2.1.3, second paragraph, change the figures as follows: ". . . involve construction of about 130 miles of new 500 kV . . ." and "upgrading of about 170 miles of existing . . ."

P. 2-3, sixth paragraph, third line, should be "IDU EIS and COTP EIS/EIR . . ." and at the end of line four, add "and the Transmission Agency of Northern California (TANC)." (068-21, 22)

Response:

The suggested new language has been added into the Final EIS.

02d3 2.1.1: BPA projects $290 million in additional revenues to PNW with the maximum upgrade, yet this amount is not supported elsewhere in EIS. (075-37)

Response:

The economic analyses of Chapter 4.8 of the Draft EIS are based on total project costs and benefits, and do not report the distribution of benefits between the PNW and California. The System Analysis Model(SAM) can report secondary revenues to the PNW, assuming BPA's current nonfirm rate structure. However, many of the benefits of the Intertie upgrades would be due to long-term firm contracts. The distribution of benefits of such contracts will be determined during negotiations between the PNW and California, and while the Draft EIS analysis showed that with long-term firm contracts, both upgrade proposals are economically justified, it would be speculative to project the distribution of

benefits before long-term firm contracts are completed. The economic analyses in the IDU Final EIS in Volume 1, Section 4.5, and in Appendix I provide detailed information on the amounts of benefit BPA projects for expanded Intertie capacity under a variety of scenarios. The assumptions underlying these analyses and an evaluation of their sensitivity to changes in these assumptions is also present.

02d5 2.1.4: BPA should clarify the relationship it sees between the COTP and additional firm sales and NW capacity availability. (075-39)

Response:

BPA believes that the COTP will enable 600 MW of additional firm contractual arrangements. Projections of PNW available capacity are available in the 1987 Pacific Northwest Loads and Resources.

02d6 What are the environmental impacts of the estimated 227 aMW of additional new hydro capacity caused by maximum Intertie expansion? What additional incentives occur under PURPA? (072-31)

Response:

As shown in Table 4.2.28 of the Draft EIS, Maximum Intertie development resulted in development of 44 MW of additional small hydro. Several sections of the Draft EIS (pp. 4.2-36, 4.5-47/48) generically describe the impacts of small hydro development. Because it is not known at this time where small hydro development is likely to occur in the PNW in the future, it is impossible to provide more than a generic description of the impacts of new hydro development. Final EIS studies also indicate little additional hydro development would occur as a result of Maximum Intertie Expansion (Table 4.4.2 in the Final EIS). BPA's proposed Long Term IAP includes several provisions that may affect the development of new hydro resources as Intertie access is limited for hydro facilities developed in "Protected Areas." All resources, including new hydro resources, can only gain access to the Intertie through scheduling utilities. Therefore, resource developers, including developers of small hydro that might qualify as PURPA resources, must reach agreement with scheduling utilities for access to the Intertie. In addition, the proposed Long Term IAP includes provisions specifically designed to address the potential harmful environmental effects of new small hydro of the IAP.

B03 ALTERNATIVES FOR ALLOCATION OF INTERTIE ACCESS

03y General

03y2 Although one decision described in the Draft EIS is adoption of the LTIAP, there is no discussion of alternative policies. (047-10)

Response:

The Final EIS examines a range of alternatives for both policy and capacity. Policy alternatives include 3 alternative formula allocation options, and 3 alternative levels of firm contracts. In addition, sensitivity analyses examine additional values for some policy parameters. Chapter 2, in the "Decision Packages" section, examines the full range of environmental impacts due to various combinations of policy and capacity alternatives.

03a Environmental Dispatch

03a1 BPA should identify the environmentally and economically preferable mix of coal resources used for export sales over the Intertie. BPA should give priority to access for low sulfur dioxide emission plants (e.g., Colstrip) over high SO_2 emission plants (e.g., Centralia). (036-06; 099-01; 038-07)

Response:

BPA's primary environmental analyses dispatch coal according to plant operation costs. In addition, BPA has prepared an analysis which dispatches coal resources in order of their SO_2 emission levels.

BPA performed an analysis to examine how an environmental dispatch of PNW coal plants, rather than the dispatch the System Analysis Model normally uses, might affect the operation of PNW power resources and export sales. In this analysis, PNW coal plants were ranked on the basis of the amount of SO_2 each emits, on average, per unit amount of electrical energy it produces. The plants were dispatched in order of increasing SO_2 emissions per unit of electrical energy produced. The Colstrip plants were both the lowest cost coal plants, and had the lowest SO_2 emissions per unit of electric energy produced, and so were the plants dispatched first. Valmy Units 1 and 2 have the second lowest SO_2 emissions per unit of electrical energy produced, but, outside of the Boardman plant, they are the highest cost coal-fired generation in the region. So what happens under this environmental dispatch is that, once Colstrip power has been sold, Valmy power is frequently not marketed because of its price, and the environmental dispatch blocks access by the market to other lower cost but more polluting coal generated power from the PNW.

Thus, as shown on the following table, there are large reductions in PNW coal fired generation and PNW export sales compared to that shown by the original analysis. This is true for both Existing and Maximum capacity conditions, given the Proposed formula allocation and existing contracts conditions. There was little change in hydro generation. Reservoir levels generally decreased. Decreases of the largest magnitude occurred in 1988 of the four years analyzed, and the greatest impacts occurred at Hungry Horse in the fall and winter months. These lower levels

would generally affect resident fish and recreation negatively. There may be merit to the idea of environmental dispatch of coal-fired generation, but economic factors seem to be more important to the utility purchasers and generators of electric power than are environmental factors, at least once the threshold of compliance to environmental requirements is passed. All the PNW plants are in compliance with their environmental permits. An environmental dispatch is within the realm of possibility, but would probably be very difficult to implement.

First, to be truly an environmental dispatch, all environmental impacts of the plants should be considered, and the plants ranked in order of total environmental damage they produce. This in itself would not be easy. To implement an environmental dispatch would require agreements among utilities such that owners of lower cost, but more polluting plants would still receive the benefits from their investments in those plants even though they would be used less frequently, and owners of higher cost, cleaner plants would have to be able to recover their costs and receive a return on their investments even though the price of power sold from their plants might be too low to do so in order to be competitive. If the power sold from PNW coal plants is not competitively priced, the purchasers of power from PNW coal-fired power would would not buy it and everyone would lose economically. California and, to a lesser extent, the Inland Southwest would also likely lose environmentally.

One way that has been considered by governments that would be a step toward an environmental dispatch would be the imposition of pollution taxes. However, BPA does not have the authority to tax.

EFFECTS OF ENVIRONMENTAL DISPATCH OF COAL GENERATION
ON PACIFIC NORTHWEST SALES AND TOTAL GENERATION
(aMW)

	Comparison 1 1/	Comparison 2 2/
1988		
Sales		
PNW Sales	-419	N/A
BC Hydro Sales	20	N/A
TOTAL	-399	
Generation		
Hydro	-3	N/A
Nuclear	0	N/A
Coal	-559	N/A
Combustion Turbine	0	N/A
Other	-34	N/A
TOTAL	-596	
1993		
Sales		
PNW Sales	-522	-583
BC Hydro Sales	59	284
TOTAL	-463	-299
Generation		
Hydro	0	-5
Nuclear	0	0
Coal	-715	-731
Combustion Turbine	0	0
Other	-31	-6
TOTAL	-746	-742
1998		
Sales		
PNW Sales	-603	-780
BC Hydro Sales	41	218
TOTAL	-562	-562
Generation		
Hydro	-2	-12
Nuclear	0	0
Coal	-714	-835
Combustion Turbine	-1	1
Other	-14	-14
TOTAL	-731	-860
2003		
Sales		
PNW Sales	-594	-811
BC Hydro Sales	72	192
TOTAL	-522	-619
Generation		
Hydro	-12	-7
Nuclear	0	0
Coal	-643	-830
Combustion Turbine	-1	1
Other	-19	-20
TOTAL	-675	-856

1/ Difference of the Proposed Formula Allocation, Existing Intertie Capacity, Existing Contracts case for the Environmental Dispatch analysis from the same case in the original analysis

2/ Difference of the Proposed Formula Allocation, Maximum Intertie Capacity, Existing Contracts case for the Environmental Dispatch analysis from the same case in the original analysis.

03a2 The Draft EIS should determine whether variations in current Intertie allocations could reduce environmental costs, and propose or investigate environmentally preferable allocations. (076-14)

Response:

In California, Intertie capacity is controlled by public and private utilities through ownership and contract. Alternative allocations for Intertie capacity in California would not be reasonable alternatives for this EIS, since BPA, the decisionmaking agency for the EIS, does not have the ability to reallocate Intertie capacity that it does not control. An analysis of environmental dispatch of coal plants was performed in response to comment 03a1.

03a3 2.2.1.4; BPA should state that an environmental dispatch-based policy is not within the agency's authority to implement. (075-43)

Response:

BPA believes that it has the legal authority to implement an environmental dispatch-based policy on its share of the Intertie. However, in the Long Term IAP, BPA is proposing other options for economic and other reasons (discussed in the Final EIS). Environmental dispatch poses implementation problems which at this time seem insurmountable. See response to comment 03a1.

03a4 P. 2-5; relative environmental impact of generation by different means of power production should be done on a case-by-case basis and include consultation with appropriate Federal and State resource agencies. (103-11)

Response:

BPA discussed an "environmental dispatch" procedure in Section 2.2.1.4 of the Draft EIS and in Section 2.3.4 of the Final EIS as a nonviable alternative nonfirm energy allocation options. As the Draft EIS noted, environmental dispatch would not meet the needs and purposes for BPA's proposed actions. However, BPA did perform an analysis of the environmental dispatch of various coal plants in the PNW. See the response to comment 03a1.

03b Need for Alternative Providing Unrestricted Access to the Intertie

03b1 The EIS should examine an alternative that allows competitive access to the Intertie (PCF-1-02-01; 052-10; 068-06; 073-06; 075-14)

Response:

The Draft EIS and the Final EIS examine an alternative that reflects the use of the Intertie before the implementation of the Interim IAP in September, 1984. At that time, the Intertie

facilities controlled by BPA were available on a first-come, first-served basis, except when the Exportable Agreement was in effect. In modeling the Pre-IAP conditions for the Final EIS, BPA has assumed that the Exportable Agreement would not be renegotiated when it expires in 1989, and that after that time Intertie facilities controlled by BPA would be made available for nonfirm energy sales on a first-come, first-served basis at all times.

03b2 The BPA First alternative should assume that excess capacity is made available on a nondiscriminatory basis (2.2.1.3.). (075-42)

Response:

Studies for the IDU Draft and Final EIS contain an alternative, a policy that allows preferential Intertie access to regional hydro energy regardless of ownership. In the Draft EIS this was termed the BPA-First Alternative. In the Final EIS this terminology has been changed to Hydro-First to better represent the intent of this alternative. The analysis was the same in both studies.

03b3 Page 2-9, 2.2.3.3; fewer restrictions regarding access for new resources creates a more favorable atmosphere for private development of new resources, while allowing supply and demand to dictate the market. (046-10)

Response:

The purpose of the LTIAP is to provide access to a limited resource, i.e., Intertie Capacity, while assuring that BPA has sufficient access to meet its financial requirements. The policy does not contemplate encouraging resource development for export. This purpose would be inconsistent with BPA's purpose in managing the Intertie.

03b4 The EIS should examine a policy alternative in which Intertie capacity is made available to the highest bidder. Allocations once purchased from BPA would be transferable. A variation of this alternative would first reserve a share of the intertie for BPA's use. (INC-01-01)

Response:

Use of the "highest bidder" or auctioning process for allocating transmission capacity has received mixed review by the Federal Energy Regulatory Commission (FERC). In 1984 FERC granted approval to Baltimore Gas and Electric (BGE) for selling a portion of its transmission system, deemed to be surplus to its needs, for a price which was to be determined through the bidding or auction process (28 FERC 61,096). In 1986 FERC rejected a second BGE proposal to auction a portion of its unused transmission capacity, also through a bidding process (35 FERC 61,150). FERC's rationale for rejecting BGE's second proposal was that there would be no

opportunity to review the rate and approval would require waiver of the notice and review provisions of the Federal Power Act. However, in rejecting the BGE filing, FERC stressed its commitment to encourage "alternative rate proposals for coordination services where proposals are appropriate."

FERC expressed a desire to consider alternative approaches to the pricing of coordination services, such as market-negotiated rates, in the 1985 Notice of Inquiry, Phase I (50 FR 23,445). In the March 12, 1987 acceptance of the Western Systems Power Pool (WSPP) experimental transmission rates, FERC affirmed its willingness to consider value or market-based rates.

As a WSPP participant, BPA has in effect the MT-87 rate which is compatible with the market-based rate concept for transmission under the WSPP Agreement. However, the appropriate forum for discussing the merits of BPA's rate proposal is BPA's current 7(i) public review process under the Pacific Northwest Electric Power Planning and Conservation Act.

PG&E declined the opportunity to participate in BPA's current 7(i) process and therefore their proposal to examine an alternative for allocating Intertie capacity to the highest bidder can not be appropriately scrutinized.

03b5 The EIS should examine providing access to the BPA-controlled portion of the Intertie on the basis of demand for firm power and/or nonfirm energy by PSW buyers at various prices. This alternative could be regarded as a "mirror image" of the alternative represented in the Near Term Policy which allocates capacity for firm and nonfirm energy based on supply in the PNW only. This alternative is different from the pre-IAP "No Action" alternative since that policy provided for allocation of Intertie capacity on the basis of PNW supply, not demand. (INC-02-01)

Response:

As modeled in the Final EIS, the pre-IAP condition reflects access to the Intertie based on demand. In the Draft EIS, it was assumed that when the Exportable Agreement expires in January 1989, it is renewed. In the Final EIS, however, it is assumed that the Exportable Agreement is not renewed when it expires.

03c Allocation of Intertie Sales in California

03c1 The Draft EIS assumes fixed allocations of Intertie sales among California utilities. The Final EIS should examine alternative allocations of Intertie sales among California utilities in order to improve environmental quality. (PCF-1-01-04; 038-08; 076-05, 13, 15; 064-05)

Response:

In California, Intertie capacity is controlled by public and private utilities through ownership and contract. Alternative allocations for Intertie capacity in California would not be reasonable alternatives for this EIS, since BPA, the decisionmaking agency for the EIS, does not have the ability to reallocate Intertie capacity that it does not control. See also response 03a2.

03e Analysis of Pre-IAP Alternative

03e1 Commenters stated that from 1968 to 1984 firm contracts were allowed on the Intertie; this was not reflected in the Draft EIS Analysis of the Pre-IAP Alternative. (073-05, 21)

Response:

It is true that during the 1960s, long term firm capacity and capacity/energy exchanges were signed between PNW and California utilities. Those contracts generally expired by the mid-1980s.

03e2 The Draft EIS included little analysis of providing access based on consummated transactions, as was the case before the Interim IAP was implemented. (052-11; 075-41)

Response:

The Draft and Final EIS include analysis of Pre-IAP conditions, when the Intertie was essentially available on a first-come, first-served basis for PNW utilities that had reached sales agreements with California utilities. See 03b1.

03e3 PG&E's review of the Decision Package results presented by BPA shows that there are no negative environmental effects associated solely with open access to excess capacity (the Pre-IAP nonfirm allocation option). (075-25)

Response:

Refer to Chapters 2 and 4 in the IDU Final EIS for a discussion of the economic and environmental effects of the Pre-IAP nonfirm allocation option.

03e4 The claim that California buyers would purchase from PNW sellers other than BPA in heavy runoff months and force BPA into the Exportable Agreement is used to support the rejection of the pre-IAP option. The claim is incorrect and does not support the rejection. (073-16)

Response:

This issue was discussed at length in the September 1984 Administrator's Record of Decision on the Near Term Intertie Access Policy, pages 35-44. In particular, the section describing the economy energy market prior to the adoption of the Intertie Access Policy (at page 39) documents the pre-IAP marketing practices and what occurred. This documentation supports the rejection of the pre-IAP option.

03f Impacts Of Long-Term Firm Contracts of Types Other Than Those Examined In The Draft EIS

03f1 The EIS should examine the effects of unconstrained power sales after the Intertie reaches 7900 MW capacity. (044-03)

Response:

The IDU Draft EIS considered the impacts of the unconstrained provision of 1000 aMW of power to California. The IDU Final EIS considers 2000 aMW of unconstrained power sales to California as well as a large 1350 MW FD (730 aMW) sale to California, which has fewer constraints than other types of sales. The 2000 aMW sale to California is over and above the contract sales of the Assured Delivery case and is not constrained by type of resource or type of sale from access to the Intertie.

03f2 It is misleading to assess potential impacts of long-term firm contracts by assuming most will take the "generic" long-term firm contract. Justify assumptions and describe other potential long-term sales scenarios. (044-02; 087-29)

Response:

The "generic" firm contract used in the Draft EIS was an effort to reflect not the ideal, but the most likely type of long-term firm contracts from the PNW to California, based on assumptions that were reasonable at the time the Draft EIS was prepared. The Draft EIS included analysis of two levels of firm contracts. The Final EIS analyzes three levels of long-term firm contracts, and includes a sensitivity analysis of two alternative firm contracts. BPA believes that the EIS's analysis of long-term firm contracts provides a reasonable assessment of the likely range of impacts due to a variety of long-term firm contract types over the Intertie.

03g Exchanges And Capacity Sales

03g1 BPA should specifically assess the benefits of granting assured delivery for capacity sales and capacity/energy exchanges, including the nonfirm market. Resource development would occur if BPA denies access for exchanges. BPA should consider not allowing new resources access until a fixed amount of capacity/energy

exchanges are in place. (056-04; 075-10, 26, 48; 090-02; PCF-2-01-01; PCF-2-03-02; 063-04; 067-03; 076-08; 087-32; 059-18)

Response:

The IDU Final EIS considers three firm contract cases, Federal Marketing and Assured Delivery. Both cases include sales that convert to capacity/energy exchanges after the region reaches load/resource balance. These cases do indicate that the existence of exchanges can somewhat delay the need for new resources, both in California and the PNW. A pure capacity sale is included in the environmental studies of firm contracts on Intertie upgrades. The proposed Long-Term Intertie Access Policy states that new resources will be allowed access to the Intertie to maintain Assured Delivery contracts. Utilities that sell power from hydro projects built in "protected areas" within the Columbia River Basin will receive a reduced allocation of Assured Delivery.

03g3 There is insufficient information in the draft EIS to permit BPA to conclude that the environmental impacts of reducing the level of power exchanges between the PNW and PSW are more or less benign than facilitating such exchanges. (096-05)

Response:

Additional discussion regarding the potential effects of interregional power exchanges has been provided in Appendix B, Part 4.

03g8 If geothermal power is expected to be transmitted, objections to possible expansion of the Intertie should be tempered. (045-10)

Response:

Comment noted.

03j Term of Assured Delivery Contracts

03j1 Why is BPA projecting 20-year long-term contracts? There are long-term rate and resource supply implications. (065-11)

Response:

From the time the original Intertie lines were constructed, in the 1960s, the Intertie has been used for long-term contracts between the PNW and California. The nature of those contracts has changed over time. The original contracts were largely exchange contracts, since at the time, the PNW did not have any substantial surplus firm power; more recent contracts signed by other PNW utilities or proposed by BPA generally begin as firm power sales and convert to exchanges as the PNW's firm surplus disappears. Long-term firm contracts allow both regions planning certainty, which facilitates least-cost resource acquisition. Studies for

the Draft and Final EIS show that with some types of long-term contracts, both regions can reduce the level of new resources that must be acquired to serve their loads. The IDU Draft and Final EIS examine the use of the Interties for a variety of long-term contracts, including their economic effects and implications on new resource development.

03m New Hydroelectric Development

03m1 BPA should consider excluding access for power from areas described as protected from further hydroelectric development as a possible means of mitigation for small hydro development. Also, the EIS should discuss limiting Intertie access so that utilities buying power from projects identified as damaging to anadromous fish are denied access to Intertie. (087-28; 047-05)

Response:

"Protected areas" designations for fish and wildlife have been proposed by the Regional Council in a Staff Issue Paper published October 8, 1987. Public comment on this document has been extended until March, 1988, when the Council will consider entering rulemaking to adopt "protected areas." BPA's proposed LTIAP limits Intertie access for utilities buying power from projects constructed in stream reaches designated Protected Areas by the Council staff. Later it is contemplated that a comprehensive protected area program will be adopted. See proposed LTIAP Section 7.

03m2 Commenters from environmental groups questioned why the review process for granting access for power from new hydroelectric resources should be limited to power from new plants within the Columbia Basin? On the other hand PNW utility commenters questioned the need for special environmental review for new hydroelectric resources. (078-04; 088-06)

Response:

Hydroelectric development in general has had considerable adverse impact on anadromous fish in the Pacific Northwest and specifically in the Columbia River Basin. The Act mandated BPA to use its funds and authorities to protect, mitigate, and enhance fish and wildlife in the Columbia River Basin. It is therefore prudent for BPA to assure that its actions in power transmission and marketing do not conflict with its fishery protection responsibilities and adversely impact BPA's expenditures to rehabilitate fish runs.

03m3 BPA should address the possible impact of the IAP on hydroelectric projects proposed for licensing in California. Could the IAP lead to hydroelectric power savings in California? (103-07, 13)

Response:

Intertie expansion and Intertie policy decisions may influence new resource development in both the PNW and California. Additional firm contracts between the two regions accompanying Intertie upgrades have the potential to lead to resource savings in both regions. The types of resources deferred in each region are difficult to predict (see Section 4.4). Hydroelectric resource development is particularly difficult to predict, since hydroelectric resources have come under the purview of PURPA, and California Public Utilities Commission interpretation of that act is rapidly evolving in response to changing demand and supply conditions in California energy markets.

03m4 BOR currently has several hydropower proposals "on hold" for various reasons, but the main reason is the lack of demand until sometime in the late 1990s. How will the unlimited access policy proposal alternative coupled with firm contract sales, affect the likelihood of bringing these projects online? (019-31; 075-52)

Response:

The base case and the two levels of firm contracts result in only an additional 124 aMW of development of hydro projects by the year 2003.

03m5 Is the NTIAP an incentive for utilities to develop new hydro resources to prolong the utilities' existing surplus and thereby continue to gain assured delivery? (069-16)

Response:

The NTIAP does not allow access for new generating resources, and, therefore, it does not provide an incentive for utilities to develop new hydro resources. Because the amount of assured delivery a utility can gain on the Intertie is based (in the NTIAP) on the utility's average annual firm surplus, if the utility develops conservation, it can prolong its surplus without adding generating resources. The Proposed LTIAP grants access to new regional resources needed to support Assured Delivery contracts. However, Assured Delivery capacity will be reduced for any utility which acquires output from hydroelectric facilities located in Protected Areas.

03m6 Explain the basis for the assumption that unrestricted access would lead to significant PNW hydro resource development because such resources may cost less than alternative CA resources. (075-51)

Response:

Absent any controls on access to the Intertie, the Intertie essentially expands the market for firm and nonfirm power from the

PNW. BPA's Least Cost Mix Model studies, based on resource supply curves developed by BPA's Division of Power Resources, suggest that a substantial amount (224 MW by 2003--see Section 4.4 of Volume 1) of new hydroelectric power would be developed to serve an increase in market such as that provided by the Intertie. It is true that any new generating resource must pass several regulatory tests, but without any controls on new resource access to the Intertie, the Intertie could be a stimulus to new resource development.

03m7 The analysis of small hydro development impacts should include a cumulative analysis, as well as considering the tribes' treaty rights. (072-32; 103-27)

Response:

The proposed LTIAP contains specific language to limit Intertie access for utilities buying power from projects built in Protected Areas. This policy, along with periodic reviews, addresses potential cumulative impacts to anadromous fish and protects Indian treaty rights for fish.

Also see response to comment 02d6.

03m8 How will BPA determine that new resources denied access are not providing power for sales on the Intertie, or by their operation allowing Intertie sales that would not otherwise occur? (047-38)

Response:

By providing for an automatic decrease in access equal to the capacity of any resources built in Protected Areas, the terms of the proposed LTIAP will prevent the sale of those resources over the Intertie.

03n Access For New Resources Based On Consistency With NWPPC Plan Or Program

03n1 Commenters want the IAP to deny access if new resources are not consistent with or cannot show compliance with either the Council's Fish and Wildlife Program or Energy Plan. One commenter felt there was potential conflict between the perceived hydropower incentives provided by Intertie expansion and the limited role for new hydropower under the Council's Energy Plan. (044-07, 17, 19a; 047-01, 02; 070-07)

Response:

This is being considered and will be addressed in the Record of Decision.

03n2 The Draft EIS should be revised to address Section 1204(b)(1) of the Fish and Wildlife Program and evaluate the cumulative impact

to fisheries from more damaging operation of the existing hydropower system and damaging development and operation of new hydropower projects. (047-04)

Response:

Section 1204(b)(1), now (1103b1) of the Fish and Wildlife Program addresses new construction of projects, not existing ones. The EIS does address the effects of predicted operation of existing hydro. Because BPA has incorporated the Protected Area concept and commits to periodic reviews the cumulative effects associated with hydro development have been addressed.

03n3 Should use the Council's Energy Plan to determine the base case for future resource development [rather than LCMM]. (087-26)

Response:

The analysis contained in the IDU Draft EIS was extensive and required a considerable span of time to complete. The information generated by the LCMM was developed at the beginning of the analytical process and is dated when compared with currently available information. The LCMM information developed for the IDU Final EIS is based on more current resource assumptions. These assumptions are basically consistent with those contained in the Northwest Power Planning Council's Energy Plan, with certain exceptions. Based on the results of BPA's WNP-1 and -3 Study, nuclear units WNP-1 and -3 continue to be included in the resource stack as cost-effective resources. In addition, the LCMM as used in the IDU Draft EIS contains a larger potential supply of small hydro resources than the Energy Plan. The NWPPC Energy Plan included only new hydro associated with existing hydro structures. BPA includes the potential for new development in addition to that accounted for in the Energy Plan. However, the small hydro potential in the LCMM used for the IDU Final EIS is greatly reduced over that shown in the IDU Draft EIS. Until the Pacific Northwest Rivers Study and the Council's Hydro Assessment Study and "Protected Areas" Program is complete, information on small hydro development potential will remain speculative.

03n5 Section C.3.c.2; narrow to focus only on fish and wildlife impacts. Revise to read ". . . the operation of Qualified PNW Resources including New Hydroelectric Plants in a manner that will have substantial adverse impact on fish and wildlife resources within the Columbia River Basin." (090-16)

Response:

The commenter is concerned that in protecting fish and wildlife resources of the Columbia River Basin, that the IAP, as drafted at the time of IDU Draft EIS, would have BPA reviewing any provision of State or Federal license, permit, or law, including those which have no bearing on fish and wildlife resources. The proposed

LTIAP uses "protected areas" to assure protection of fish and wildlife, thus eliminating review of other materials.

03o Restrictions On New Resource Access Based On Fish And Wildlife Considerations

03o1 Two commenters praised BPA's restriction on new resources that would have an adverse impact on fish and wildlife. (035-01; 103-12)

Response:

No response needed.

03o2 Some indicated that the IAP restriction was not the proper avenue for addressing fish and wildlife concerns. (060-04; 075-04)

Response:

BPA agrees that the IAP is not the most efficient means by which fish and wildlife resources are given proper protection in the development and operation of non-Federal hydroelectric resources. The mandates and processes of the Federal Energy Regulatory Commission (FERC) are more appropriate. However, the Act requires BPA to use all of its authorities to accomplish fish and wildlife protection, mitigation, and enhancement. BPA's development and management of its transmission facilities are encompassed in the Act's mandates.

03o3 Others noted that the restrictions did not go far enough and should not be tied solely to the Administrator's enhancement and mitigation efforts. The discussion should be expanded to include projects which will contribute to adverse cumulative impacts on fish and wildlife. (069-18; 078-05)

Response:

Decisions under the IAP to deny access for hydroelectric resources must be made by the BPA Administrator who has the sole authority for such decisions.

The potential cumulative effects of hydroelectric development on fish and wildlife resources would be part of BPA's consideration in evaluating impacts.

03o4 Two commenters discussed the need for BPA to protect and mitigate fish and wildlife once the maximum Intertie capacity is achieved. It was noted that the roles of fish and wildlife agencies and tribes should also be discussed. (044-10; 047-37)

Response:

Fish and Wildlife agencies have a role in assisting BPA in its efforts to protect fish and wildlife in the management of the Intertie. The IAP allows fish and wildlife agencies to alert BPA to potential violations of the IAP and assist in the development of pertinent information for inclusion in any review and record of decision.

The IAP includes provisions for mitigation if a hydroelectric project allowed access to the Intertie has substantial adverse impacts on fish and wildlife resources.

03o5 The tradeoffs between power, flood control, navigation, and fish and wildlife are all considered under other screening criteria. A restrictive policy would put BPA in a unilateral management position which is not the intent of existing law. Furthermore, BPA would be forced to identify the source of every kW that a utility may want to transmit on the Intertie. Impacts attributable to an individual project or QF should be mitigated by its owner regardless of the origin of the resource affected. (060-05; 079-10, 11)

Response:

BPA's proposed LTIAP provides for a hydroelectric project's owner to provide all necessary fish and wildlife mitigation or be denied Intertie access for the project. BPA does not intend to provide the mitigation for a non-Federal project. BPA agrees that the FERC process most appropriately applies to non-Federal hydroelectric development. See response to 03o2.

03o6 The Draft EIS should discuss limiting Intertie access so that utilities buying power from projects identified as damaging to anadromous fish resources through site-ranking processes are denied access to the Intertie. (047-05)

Response:

BPA would consider using future "protected areas" or site ranking products developed by the Council in its implementation of the IAP. BPA cannot currently rely on these products as they do not exist. However, for BPA to use hydroelectric site rankings in IAP management, BPA must be assured they adequately represent BPA's concerns and management responsibilities.

03p Access For New Resources Restricted Until Intertie Upgraded To 7900 MW

03p4 As described in Decision Packages 4, 5, and 7, in the Draft EIS the option of prohibiting access for new resources until the Intertie has a capacity of 7900 MW should not be implemented due to the potential time delays of available Intertie access. Even

if maximum Intertie access is available as planned by 1992, there is a chance that the delay of a potential market could damage the possibility of developing geothermal power. Also, there would be the risk of losing the export market to CA, if CA utilities needed firm power supplies prior to Intertie completion and developed additional resources in CA. (046-14, 09)

Response:

The problem facing BPA is not the need for the region to develop resources to supply the California market but rather to provide access for existing firm and nonfirm surpluses that exceed present capacity. BPA does not believe that its LTIAP should encourage development of additional resources for export when the PNW has a substantial surplus and limited Intertie capacity.

03q Access For Geothermal Energy

03q1 Several commenters generally compared the environmental advantage of geothermal energy to the potentially significant impacts of hydroelectric facilities or pollution from nonrenewable fuels (e.g., coal and nuclear). They support policies which support development of new firm resources (Decision Package 6), or which allocate access according to the relative environmental impact of the resources producing the power and which therefore give priority to geothermal power. (045-01, 07, 08, 09; 046-02, 06, 08, 12, 13, 15; 048-08)

Response: See response to comments 03p4 and 03a4.

03q4 The EIS is inadequate in its treatment of geothermal resources. (048-07b)

Response:

Geothermal resources are one of many new resources that may be developed to serve regional and extraregional load over the next twenty years. Because of the broad scope of this EIS and the large amount of data potentially involved, new resource development and its impacts are discussed generically (see Section 4.4). BPA did not feel that the likely future level of geothermal, solar, wind, or other alternative energy sources would be large enough to merit detailed discussion.

03r Impact Of IAP On Development Of New Transmission Lines

03r1 Limitations to access or a long delay in expansion will encourage additional construction of alternative transmission facilities by public and private utilities to serve SW markets, such as an Inland Intertie. (104-05; 090-06)

Response:

The LTIAP attempts to provide reasonable and fair access to meet demand for more access than there is available capacity, and, therefore, avoid the construction of unnecessary transmission capacity.

03s Impact Of IAP On Development Of New Generating Resources

03s1 Commenters are concerned that allowing firm sales over expanded capacity will encourage development of resources prior to regional need, solely for export. Several are concerned because of the environmental impacts incurred by the PNW. New nonhydro plants, for example, could have a cumulative effect on agricultural development, recreation, fish, and wildlife. One commenter stated that access to extraregional resources might be more beneficial for PNW natural resources than to accept environmentally risky regional new resources. (104-03; 034-01; 019-32; 075-09; 021-02; 059-24)

Response:

The IDU Draft and Final EIS examine the effects of expanding the Intertie and alternative Intertie access policy provisions on new resource development in the PNW. The studies show that certain types of firm sales (especially capacity/energy exchanges) allow the PNW to defer the development of new resources.

03s3 The Interim IAP does not encourage the development of any new resources to meet future needs. (046-05)

Response:

In the current period of regional firm surpluses, an important function of the Intertie is to help the region sell its firm surplus power. Development of new resources well ahead of regional need would complicate that task, as well as bring with it all the environmental impacts associated with new energy resources. For that reason, among others, the Interim IAP was designed to be neutral regarding the development of new resources. The Interim IAP was implemented for a limited time before the development of the Long Term IAP. The Long Term IAP does include provisions which allow access to the Intertie for power from new resources, as discussed in Chapters 2 and 4 of the Final EIS. The new resource access provisions of the IAP are intended to address the development of new resources to meet future need, as well as the sale of the region's existing firm surplus.

03s4 New construction or the modification of existing facilities addressed under the proposed IAP may require separate evaluation and environmental documentation. (103-10)

Response:

BPA recognizes that new construction or the modification of existing transmission facilities may require additional facility-specific analysis. Accordingly, BPA prepared an Environmental Assessment for its planned Terminal Expansion Project. Also, the Transmission Agency of Northern California and the Western Area Power Administration are jointly preparing a California-Oregon Transmission Project Environmental Impact Statement which addresses the projected impacts of constructing the California-Oregon Transmission Project, including the Northwest reinforcements.

New generating facilities must go through separate permitting and environmental analyses processes, including review by FERC, and in the case of major resources acquired by BPA, by the Northwest Power Planning Council.

03s5 It is difficult to find a discussion in the EIS of long-term Intertie projects and surplus capacity related to future projects that would be located in Oregon as part of the COTP. (108-01)

Response:

The analyses done for the Draft EIS provided information on the types and quantities of resources that could be expected to be developed given certain sets of Intertie decisions. The variety of options as well as potential developable resources and the factors which could influence the development of one resource versus another are too numerous and speculative to allow a reasonably accurate location analysis of future generating projects.

03s6 Rather than encouraging generating resources, the IAP should encourage conservation. The EIS should provide a detailed discussion of conservation savings and describe how proposals for acquisition of resources in lieu of conservation comport with the Administrator's conservation obligation, and resource priorities established by the NWPA and the Regional Energy Plan. (034-03; 047-06)

Response:

The purpose of the proposed IAP is to allow BPA to make effective use and manage the use by non-Federal entities of the Intertie. The proposed IAP does not attempt to promote resource development. The effects of the proposed IAP on resource development are discussed in Volume 1, Section 4.4. The proposed IAP has little impact on resource development.

03u Access For Power From Canada

03u5 The EIS should examine the use of the arbitrage-type transactions by BPA and other PNW energy sellers, whereby Canadian or other extraregional resources are purchased at low prices and resold to PSW buyers at a higher price. (INC-02-02)

Response:

This type of transaction does occur in the SAM analysis, but the data has not been broken out for analysis.

03w Relative Priority Of Firm And Nonfirm Sales

03w1 Commenter prefers long-term firm power sales contracts, as this would assure higher prices for power being purchased and sold for long-term export to CA. (046-07)

Response:

This comment has been noted.

03x Other

03x2 2.2.1.6 The "BPA First Option" will discriminate against a utility which has displaceable thermal resources. (079-14)

Response:

The BPA-First option in the Draft EIS and the Hydro-First option in the Final EIS allow preferential dispatch of hydro resources regardless of ownership. The model used for these studies displaces thermal resources with hydro energy when it is economic to do so. In actual operations, BPA must offer nonfirm energy at a given price to PNW utilities (which could be used for thermal displacement) prior to making that offer to California utilities.

03x3 The advantages of increased PNW spill along with increased coal consumption should be quantified relative to the advantages of less PNW spill/coal consumption, to support BPA's choice to adopt a policy of spilling more hydro resources and burning more coal. The final EIS should better explain how burning more coal, with more air pollution, while spilling more water is a better option than an option which allows buyers and sellers to agree without administrative direction from BPA over allocations. (073-04, 19)

Response:

The IDU Final EIS analyzes the impacts on air quality of increased coal consumption under the various Intertie scenarios. Under all scenarios the impacts are negligible. The analyses performed in the IDU Final EIS are intended to guide BPA in decisions regarding Intertie development and use; therefore, the decision made by the Administrator must balance the environmental and economic effects of the various actions being considered.

03x6 2.2.1.5; commenter agrees that economic dispatch or power brokering would require utility consent or additional congressional authority in order to implement. (075-45)

Response:

Comment noted.

03x7 2.2.2.3; BPA should qualify its long-term firm exports study results as based entirely on BPA's export marketing assumptions. (075-49)

Response:

It is true that the analyses using long-term firm contracts are based on BPA assumptions about future regional marketing. BPA chose assumptions that represented a reasonable assessment of likely future sales by BPA and other regional utilities over the Intertie. The Final EIS long-term firm sales analysis examines three levels of long-term firm contracts and includes several sensitivity analyses of important elements of the long-term firm sales assumptions.

03x8 2.2.2.3; BPA should consider a range of possible outcomes that would encompass the likely values for each of its policy alternatives. (075-50)

Response:

In developing the Draft and Final EIS studies, BPA used values for study parameters (e.g., fuel prices, firm contract levels, California and PNW loads and resources) that reflected the best estimates at the time the studies were prepared. In the Final EIS, additional sensitivity studies were prepared for several of these variables, in order to investigate the range of possible outcomes for key study variables (see Section 1.3, 4.1, and Appendix B, Part 6).

03x9 2.3.1; BPA provides no explanation as to why assured delivery would be available only for pre-existing contracts. (075-53)

Response:

Section 2.3.1 addresses the No Action Alternative. Assured Delivery under this alternative would continue for those contracts that have been approved under the Near Term IAP and only for the duration of those contracts. After these contracts expire, there would be no mechanism to approve new long-term firm Intertie contracts. Use of the Intertie would then revert back to a first-come, first-served basis. In the Final EIS, Pre-IAP is examined with Assured Delivery.

03x12 Page 2-9. The Draft EIS should include a discussion of PURPA incentives relative to "Nonfirm Access Only" conditions. (047-34)

Response:

BPA proposes to preclude Intertie access for new hydroelectric projects in "protected areas." Furthermore, development of new hydroelectric resources for the purpose of making only nonfirm sales would not be expected to be economically justified. It is anticipated that PURPA incentives would not be sufficient to overcome these factors, given competition by resource developers in California and elsewhere.

03x15 We recommend that the IAP address BPA's intent to eventually allocate up to 800 MW of Intertie capacity in the NW. (030-08)

Response:

BPA's intent is to apply the Intertie Access Policy to whatever level of Federally controlled Intertie capacity is developed. Both the Draft and Final Environmental Impact Statements have addressed a capacity range of 5200 MW to 7900 MW. BPA's purpose in this document is to consider the environmental consequences that could result from use of these levels of capacity.

B04 ENVIRONMENTAL EFFECTS OF DECISION PACKAGES

04x General

04x1 The preferred alternative should be clearly designated in Chapter 2. (047-28)

Response:

Section 1502.14(e) of the Council on Environmental Quality's "Regulations for Implementing the Procedural Provisions of the National Environmental Policy Act" Directs that agencies shall:

> "identify the agency's preferred alternatives, if one or more exists, in the draft statement and identify such alternative in the final statement unless another law prohibits the expression of such a preference."

At the time the Draft EIS was completed, BPA did not have a preferred decision package. The preferred alternatives are clearly identified in Chapter 2 of the Final EIS.

04x2 The descriptions of the alternatives should explicitly identify the associated reservoir and river operation changes. (019-25)

Response:

The Final EIS provides additional information on reservoir operations in the text as necessary. Additional backup documentation is provided in Appendix C.

04a Additional Decision Packages

04a1 LTIAP options independent of Intertie expansions are not analyzed. (052-09; 073-22)

Response:

Although LTIAP alternatives are distinct from Intertie upgrade alternatives, the two types of decisions are closely related, and each provides context to the other. Long Term IAP decisions may be implemented on an expanded Intertie, and some IAP provisions have different effects at alternative Intertie capacities. Likewise, the effects of upgrades may vary according to the provisions of the IAP.

Many of the commenters on the scope of the EIS recommended that, due to this relationship, BPA prepare a comprehensive EIS analyzing both types of issues. Therefore, the analyses in Chapter 4 examine a variety of combinations of policy and upgrade alternatives. In each case, all variables except the test variable are held constant, in order to isolate the effect of the test variable (Intertie policy or capacity). Analyzing the two types of decisions in this way is designed to clarify the effect of each.

04a2 None of the decision packages includes an open IAP governed entirely by competition. (068-05)

Response:

See response to 03b1.

04a4 Include an alternative decision package that would encourage or require preferable types of long-term contracts, i.e., generic contracts. (044-08)

Response:

The Final EIS contains analysis of three alternative firm contract configurations as well as two additional sensitivity cases for firm marketing. These assumptions were consistent with the terms of the proposed Intertie Access Policy addressed in the Final EIS.

04a5 Notably absent from the list of "Decision Packages" is one that combines an Intertie upgrade to 7900 MW with access restrictions for new resources. (076-10b)

Response:

BPA's purpose in selecting the decision packages discussed in the Draft EIS was to identify packages that (1) represent relatively likely outcomes for the Intertie decisions or (2) would assist in defining the bounds of the scope of reasonable alternatives. A decision package which would incorporate maximum Intertie capacity along with access restrictions for new resources would be considered relatively unlikely, in part because in future years the PNW will be acquiring new resources to serve regional load, and these new resources might produce surplus energy at times, which could be sold economically over the Intertie. Furthermore, other decision packages discussed in the draft provide information on the range of possible outcomes relating to both Intertie capacity and the treatment of new resources.

04b Rates Effects

04b1 What evidence does BPA have that Decision Package 5 produces the largest decline in BPA PF rate and that CA costs would increase, section 2.4.5.7? (075-54)

Response:

The conclusion that BPA's priority firm power rate would be lowest under Decision Package 5 is based on the assumption that the BPA First Nonfirm Allocation option would assure maximum marketing of BPA's surplus nonfirm power. Increased revenues from the sale of nonfirm power would allow BPA to offset the need for revenue under the PF rate, thus resulting in a decline in the Priority Firm Rate. California costs for power would be expected to increase because of the inability of Northwest entities to transmit the output of non-Federal resources to California during certain portions of the year. Northwest coal plants would be precluded from access to the Intertie and could not be operated at sufficiently high levels during the remainder of the year to compensate for their inability to operate during those portions of the year when BPA was fully utilizing the Intertie. All of these factors could be expected to result in a reduction in the supply of surplus Pacific Northwest power available for purchase by California. This would cause an increase in the average cost of producing power consumed by California.

04b2 What evidence does BPA have that new resource development combined with the pre-IAP access option could lead to higher PNW retail rates, section 2.4.6? (075-55)

Response:

As indicated in Section 2.4.6 of the Draft EIS, unrestricted access for new resources, combined with a pre-IAP access option, could result in the commitment of new resources to extraregional sales under long-term contracts. As the region consumes its current surplus and experiences a need for additional resource development, today's least cost resource options could already have been committed to extraregional service, thus requiring the development of higher cost resources for service to in-region loads. This conclusion is based on the presumption that resource developers will seek to develop lowest cost resource options prior to developing higher cost options.

04c Additional Data Needed

04c1 Show the data and assumptions underlying the effects on secondary revenues, and show for each of the four study years the resulting environmental effects (secondary revenues, average energy price, fuel use, and hydro spill for both the PNW and Canada separately; and within the PNW for BPA and the rest of the PNW). (073-24; 075-58)

Response:

In the Final EIS, a variety of data regarding environmental and economic impacts of Intertie decisions is contained in the text and Appendices. Economic benefits may be found in Appendix I. Hydro spill for the PNW and fuel use for the PNW, ISW, and California are discussed in Sections 4.2.1 and 4.3.1 of the Final EIS, respectively. Modeling methods and assumptions are provided in Appendix B.

04c2 Present supporting documentation for conclusions reached particularly in Table 2.1, Summary of Major Decision Elements and Environmental Effects. (075-22)

Response:

Supporting documentation for conclusions presented in Table 2.1 is provided in Volume 1, Chapter 4 and in Volume 4, Appendices G through I.

04c3 BPA should include sensitivity analysis for alternative Intertie pricing, fuel costs, Canadian competition, load growth and load/resource balance forecasts, and the installation of combustion turbines as likely future NW resources. (075-24)

Response:

This information is now included. See Volume 1, Section 4.5 and Volume 4, Appendix I.

04c4 Include a concise discussion of the changes in system operations that could result from each intertie alternative as well as the anticipated fish survival levels for each. (110-03)

Response:

A concise discussion of impacts is included in the summary of the Final EIS.

B05 AFFECTED ENVIRONMENT

05a Socio/Economic

05a1 Include a summary of the remarks in the CEC 1986 Electricity Report concerning BPA's Intertie access and ratemaking policies. (075-59)

Response:

The California Energy Commission (CEC) in its Draft Final Electricity Report dated December 1986 (ER-6) made reference to transmission constraints and BPA's nonfirm energy pricing policy when discussing California's use of out-of-state power.

In regard to transmission constraints, the CEC stated that both physical and legal/policy constraints must be considered. Of the two constraints, the legal/policy constraint caused by BPA's Intertie Access Policy (IAP) is of most concern to the CEC. The CEC alleges that the IAP eliminates price competition among BPA and other Pacific Northwest (PNW) utilities when selling surplus energy to California utilities. Both the CEC and the California Public Utilities Commission (CPUC) have challenged the IAP in the Ninth Circuit Court of Appeals.

Regarding the pricing of BPA's nonfirm energy, the CEC states the following at page 5-37 of ER-6: "The most significant question facing California energy planners today is whether BPA would use the market power it has obtained through its Intertie Access Policy to continue to price its energy just under California's decremental costs even when the price of gas may force the costs to the much higher levels experienced in the late 1970s and early 1980s."

The CEC addressed these two items in its ER-6 process to determine how much, if any, PNW nonfirm energy to adopt as "likely to be available" (LTBA) to California utilities during the 12-year planning horizon ending in 1997. After BPA testimony during the ER-6 process relating to availability of nonfirm energy and a rate cap proposal in its 1987 rate case, the CEC included 13,150 GWh of PNW nonfirm energy not only as LTBA, but as a core resource backed up by California's fully dispatchable resources including existing oil- and gas-fired generation. Core resources are defined as "/R/resources which for operational or economic reasons should not

be displaced or curtailed." (ER-6, p. 4-4) The CEC will revisit the 13,150 GWh decision at the conclusion of BPA's 1987 rate case. According to a CEC staff person in late December, 1987, the CEC will not revisit its 13,150 GWh decision as part of its ER-6 Standing Committee. However, the availability of nonfirm energy will be revisited in the ER-7 process which is currently underway.

05a2 Summarize the CEC and CPUC actions to limit or remove the amounts of PNW energy assumed for the determination of QF pricing and siting. (075-60)

Response:

In its July 2, 1986, Decision 86-07-004, the California Public Utilities Commission (CPUC) made specific reference to BPA in a section entitled "Non-QF sellers of energy to California utilities must price their energy below California's avoided costs in order to compete effectively for the California market." (CPUC Decision 86-07-004 was issued in what is commonly referred to as the OIR-2 proceeding. OIR-2 addresses long-term avoided costs for qualifying facilities (QFs). The Decision also established a process whereby the CPUC will determine the need for new QFs biennially.) Utilities in the Pacific Northwest and the Southwest currently have excess capacity and energy that can be sold to utilities in California. The CPUC has stated that this power must compete with QFs. The Decision states the following specifically about BPA:

> Where the surplus energy is largely low-cost hydroelectric generation, as is the case with purchases from the Bonneville Power Administration (BPA), the potential benefits to both purchaser and seller are great.
>
> BPA is now the single largest marketer of surplus energy to California. This status is threatened, however, by BPA's recent efforts to maximize its net revenues by eliminating competition from the Pacific Northwest and Canada, rather than by reaching a long-term understanding with California regarding fair and predictable rates. Thus, our utilities will be forced to rely increasingly on California's QFs to meet their future needs.
>
> We believe BPA could set a combination of firm and nonfirm rates that would result in increased benefits to both California and the Pacific Northwest from interregional sales. This could happen if BPA and other Pacific Northwest entities respond appropriately to the competition that (despite BPA's efforts) increasingly characterizes the California market for long-term supply. (Decision 86-07-004, p. 62)

The CPUC also decided that it would rely heavily on the California Energy Commission's (CEC) biennial Electricity Report when

determining the need for additional QFs. The CEC, in its Draft Final Electricity Report published in December 1986 (ER-6), included 13,150 GWh of PNW nonfirm energy as "likely to be available" to meet California needs and also identified this amount as a core resource backed up by California's fully dispatchable resources including existing oil- and gas-fired generation. Core resources are defined as "/R/resources which for operational or economic reasons should not be displaced or curtailed." (ER-6, p. 4-4) ER-6 will be used by the CPUC in the ongoing OIR-2 proceedings to determine the need for new long-term QF contracts for the next two years. BPA has been a party and actively involved in the OIR-2 proceedings.

05a3 Although BPA includes background information concerning cultural resources, no field inventories have been conducted to evaluate the potential effect on significant cultural resource sites where reservoir levels will be lower than previously experienced. (075-61)

Response:

None of BPA's Intertie decisions would result in reservoir levels falling below previously experienced levels. Rather, the Intertie decisions could influence the frequency with which elevation limits were experienced. However, due to constraints on reservoir operation, previously experienced limits would not be exceeded.

05a4 Eureka is in Pacific Gas and Electric Company's(PG&E) service area. Figure 1.1 is not correct. (029-04)

Response:

The lower border of BPA's service area was incorrectly drawn in Figure 1.1. The error has been corrected in the Final EIS.

05a5 Provide insight as to the value of recreational and commercial harvest of salmonid resources, a significant part of PNW resource base (p. 3-11). (069-21)

Response:

Salmon recreational and commercial fisheries have significant value to the Pacific Northwest.

During the 1977-81 period, the value of Columbia River Basin fish caught by sportsmen and commercial harvesters averaged $86 million (based on 2.0 million fish caught) (source: based on distribution of run size presented in Northwest Power Planning Council, Council Staff Compilation of Information on Salmon and Steelhead Losses in the Columbia River Basin, NPPC, Portland, Oregon, March 1986, Table 5, and catch to escapement ratios and values in Jack Richards, Economic Information for Habitat Management Decisions, National Marine Fisheries Service, E&TS, Portland, Oregon, prepublication draft, Table 6, August, 1986).

More recently, the value of the 1985 harvest was $108 million (source: personal communication with Jack Richards, National Marine Fisheries Service, April, 1987).

05b Natural Resources

05b1 Page 3-36. We know of no evidence to support the statement that adult salmonids become fatigued and disoriented due to ascending fish ladders. Most fish delay associated with dam passage is attributable to locating, entering, and remaining inside the fish ladder entrances. (047-46).

Response:

Comment noted.

05b2 The Draft EIS does not address PNW river systems outside Columbia River -- these will be affected by IAP. (069-20)

Response:

Many of the projects outside of the Columbia River system are run of river projects, or are operated to rule curves and operational changes are not expected as a result of IDU.

B06 POWER SYSTEM EFFECTS

06a Hydro Operations In The PNW

06a1 The EIS does not address efficiency and environmental losses associated with PNW river fluctuations from providing capacity sales arrangements with CA. (PCF-2-10-01; 042-05, 06)

Response:

The Draft EIS included a generic capacity contract that begins in 1993 and continues through 2008. The size of the generic capacity contract was determined on the supply side by analysis of BPA's long term firm surplus capacity. This analysis is based on 50-hour sustained peaking capability and takes into account efficiency effects of capacity sales. The EIS does address environmental effects of such contracts, as evident on a monthly basis. The Final EIS analysis also examines a generic PNW-California capacity sale.

06a2 Recognize and address the other purposes of the Federal dams, including potential impacts to these purposes as a result of the policy. (019-21; 060-03)

Response:

BPA recognizes that the dams on the Columbia and Snake rivers are intended to meet multiple purpose needs including flood control,

irrigation, power production, and recreation. A large number of constraints are placed upon how Federal power facilities may be operated in order to accommodate the needs of these other purposes. In modeling the effects of Intertie decisions on river operations, the System Analysis Model (SAM) recognizes the constraints necessary to ensure protection of the nonpower uses of the Federal generating facilities. In those cases where power production needs take priority over other multipurpose uses (e.g., a particular recreational use), the consequences of Intertie decisions are expected to be minor.

06a3 The Draft EIS should clearly state the assumptions behind the operational criterion used to estimate the environmental consequences of alternatives, and that the Corps will not alter operation of its projects without first doing detailed, site specific assessments of impacts. In addition, discussions in the EIS should make it clear that the policy does not govern how the Corps operates projects. (060-01, 02)

Response:

Project constraints used in the SAM studies are taken from "Project Data and Operating Limits, Columbia River and Tributaries Review Study", North Pacific Division, Corps of Engineers, May 1985. The project operating limits used in SAM may be found in "Project Operating Procedures and Constraints Manual for BPA Seasonal Hydropower Planning Models", Bonneville Power Administration, July 1986.

It is recognized that the Corps will continue to operate its projects for multiple use independent of BPA's Intertie decisions. Wording has been changed to Section 4.2 to clarify this point.

06a4 BPA should examine how Intertie proposals will affect the millage rate of additional spills and whether such spills can be provided without affecting firm power sales contracts. This may reveal whether it is useful to replace protection within system flexibility with hard constraints on hydrosystem operations. (072-13; 075-67)

Response:

The analyses of intertie proposals with the SAM model used variable millage rates, for the additional spill referred to, due to different spill volumes and marketing conditions resulting from changes in intertie conditions. The spill "within system flexibility" is not spill associated with firm energy capabilities of the system and, therefore, could be implemented without affecting firm power sales contracts.

06a5 Discharges from Hungry Horse Dam during the summer months on weekends and holidays must be limited to meet minimum fish flow

requirements and should be considered a firm constraint at Hungry Horse and factored into the Intertie expansion studies. (019-20)

Response:

The System Analysis Model is limited to analyzing the effects of the alternatives on a monthly average basis, so a requirement that is only in effect on holidays and weekends can only be approximated. Under the requirement described by the Bureau of Reclamation, Hungry Horse could average through the turbines about 6500 cfs (based on running full load on weekdays and minimum flow levels on holidays and weekends). A review of the project's operation under all 20 alternatives in the IDU Final EIS studies shows that the month average discharge exceeds 6500 cfs in the worst-case alternative less than 10 percent of the time in June, 10-15 percent of the time in July, and 10-20 percent of the time in August.

06a6 The control of winter releases to serve priority water rights is a constraint on operational changes which must be recognized in the evaluation of access policy alternatives. (019-26)

Response:

The model used to help identify potential environmental impacts of Intertie decisions (SAM) does account for irrigation withdrawals. The model gives priority to water rights for irrigation by depleting flows prior to regulating the hydrosystem for power purposes.

06a7 The probability of refill at Hungry Horse should be fixed in the System Analysis Model (SAM), so that the probability of being in the top 2 feet at the end of July (Package No. 5) should be the same as for Package No. 1--No Action Alternative--the same for all alternatives. (019-27)

Response:

Planning criteria and constraints are developed based upon a given sequence of water conditions and assumed loads. These planning constraints are then used in SAM. However, random water conditions, load variation around a predicted mean, thermal performance and runoff forecast errors are then allowed to occur. This presents a wider range of possible outcomes and results in variability in refill probabilities among alternatives. The SAM simulation analysis is thought to be a better representation of possible future conditions than is a more fixed approach.

06a8 The Draft EIS Table 4.7.1 shows no difference among alternatives in meeting the 1240-foot criterion at Grand Coulee at the end of May for irrigation. Is the slight reduction in the probability for 1997 (98.5 percent) and for 1992 (98.0 percent) the result of changing operating constraints? (019-28)

Response:

No. The ability to meet the 1240-foot constraint depends on the end-of-May flood control elevation. Thus, the water year selection (which differs by contract year and is selected at random by SAM) affects the probability of meeting the 1240-foot elevation. The slight difference for 1997 reflects this random selection of water years.

06a9 There is no assurance that the individual project constraints are being met in the SAM analysis, and that the ELFIN model (Draft EIS page 4.2-7), which estimates generation levels in California, is correctly calibrated with SAM. (019-30)

Response:

The SAM model is programmed to honor project constraints (see response 6a-3). In the case of a conflict between constraints, the programming provides for a hierarchy of constraints to be met. Spot-checking of results on several occasions has indicated that the model is meeting the given constraints.

The SAM model was used to generate projected Intertie sales to California. In the Draft EIS, that SAM output was then used as an input to the ELFIN model, used by BPA's consultant to analyze generation levels in California. In the Draft EIS, SAM and the ELFIN model were based on the same or similar data on Southwest loads and resources, and to that extent were correctly calibrated. For the Final EIS, BPA has used its own Marketing LP to analyze generation levels in the ISW and California, as well as to develop the California demand curve for SAM, thus assuring a higher level of consistency in the analysis of PNW, Inland Southwest and California generation changes.

06a10 Include detailed analysis of increased provisional drafting during the winter and impaired reservoir refill during the spring. (060-08)

Response:

The probability of being near full pool during the summer months was analyzed in the Draft EIS as part of the recreation analysis (see pages 4.7-3 and 4.7-4 of the draft EIS). This was done for Libby, Hungry Horse, Albeni Falls, Grand Coulee, and Dworshak reservoirs. Information on winter reservoir drafts was provided in Tables 4.5.24-26 in the Draft EIS. Similar analyses were prepared for the Final EIS and are discussed in Section 4.2.1. More detailed reservoir elevation and system refill information is contained in Appendix C.

The amount of provisional energy available is limited by contract and does not change with Intertie decisions. In the SAM,

provisional energy is not accounted for separately and, therefore, its frequency of use in these studies is not known.

06a11 Specifically identify what impacts can be expected at the Libby Dam and Chief Joseph projects. (060-19)

Response:

Expected impacts at Libby Dam were presented in the Draft EIS in Tables 4.5.24-26 and pages 4.7-2 and 4.7-3. This analysis is also contained in the Final EIS and more detailed information is presented in Appendix C. The Final EIS contains a more detailed recreation analysis for Libby.

Impacts at Chief Joseph are not specifically addressed because that project is a run-of-river project and, thus, not amenable to the monthly modeling SAM provides. At run-of-river projects, elevation and flow changes occur on an hourly basis in order to meet loads and system operating requirements. Brief discussions of short-term changes in operations at run-of-river projects, which may result from Intertie decisions, are in Volume 1, Sections 4.2.1 and 4.2.2 of the Final EIS.

06a12 P. 4.2-19; discuss potential impacts of Intertie capacity or policy alternatives as they relate to CA run-of-river operations and storage reservoirs. (103-18)

Response:

California's hydroelectric resources (both run-of-river and storage) provide the state some of its least expensive energy. In general, hydroelectric generation, because of its low cost, is not likely to be affected by the level of Intertie sales from the PNW. California hydroelectric operators will generally always maximize generation from California hydroelectric resources. There is a possibility that the shape of generation from California storage projects could change somewhat according to the level and shape of energy deliveries from the PNW. However, the use of the California hydroelectric storage projects would continue to be guided by operating plans reflecting their multiple uses (e.g., irrigation and recreation). BPA is not aware of generally available analytic models that can examine the issue, and it appears unlikely that changes in California storage hydroelectric operations would be significant.

06b Analysis Of California Market

06b1 Three commenters request a more thorough explanation of BPA's model of the California nonfirm energy market (PCF-2-08-05; PCF-3-02-04; 073-32). Another person requested that BPA describe assumptions used in its models to determine the West Coast resource mix (075-66), indicate any changed assumptions about California market size under alternative policies (075-65), and

clearly distinguish which results derive from models and which are strictly judgmental (075-63).

Response:

For the Final EIS, the available California market is determined by a series of studies with BPA's Marketing LP. California loads and resources for the Final EIS are based on the CFM6 forecasts prepared by utilities. Inland SW loads and resources are based on individual utility 20-year projections. In the Marketing LP, very inexpensive power is made available from the PNW in 1000 MW blocks. After the first 1000 MW block, all other resources are economically dispatched from all areas, excluding the PNW. The decremental cost of the last resource dispatched is recorded for each three hour segment for a typical week in each month. This procedure is repeated with two 1000 MW blocks, then three, four, etc. When this process is completed, an adjustment is made for firm contracts and a monthly average price by block is determined. A more detailed writeup of the Marketing LP model is included in Appendix B, Part 1.

The available California market is calculated independently of Intertie access policy provisions. However, Intertie access policy provisions can change the monthly amounts and shape of power sold over the Intertie, and thus influence the amount of the California market served at any time.

06b2 The model should better reflect actual experience in determining the PSW demand curve rather than assuming the PSW will pay 75 percent of the decremental cost of the displaced resources (073-31).

Response:

The IDU Final EIS includes sensitivity analyses around the 75 percent assumption; specifically, the economic effects of the PSW paying 50 percent and 85 percent of the decremental cost of the displaced resources. These sensitivity analyses are discussed in Appendix I of the Final EIS.

06b3 The Final EIS should recognize that California has available a mixed supply of resources to achieve its goals at less cost. (073-14)

Response:

The building of the California market in the analytical models reflects all resources available to California according to California utility planning models. See B06b1.

06b4 Analysis should assume oil generation to fade to a minimal level after 2004 (PCF-2-10-06; 042-09) and that California hydro

resources can be used for peaking, contrary to the inference in the EIS. (042-17)

Response:

Resource additions and retirements are based on CFM-VI submittals to California Energy Commission.

06b5 Request information on potential operational changes at the Pittsburg and Contra Costa power plants with long-term energy exchange contracts (103-14).

Response:

BPA used the Elfin model to forecast the effects of Intertie decisions on the operations of California generation resources for the IDU Draft EIS. For the IDU Final EIS, BPA modeled California generation using the marketing LP. The marketing LP does not provide generation information on a resource by resource basis.

06b6 To the extent the analysis includes firm surplus energy for sale to CA which will be used by DSIs, the Final EIS should correct for this use or explain why it is available to sell to CA. (073-34)

Response:

BPA does not reserve firm energy on a planning basis for service to the top quartile of the DSI customers' load. The assumption in the Draft EIS and the Final EIS is that all of the firm energy surplus is available to sell to California. The Draft EIS and the Final EIS assume that the top quartile is served through the shift, flex, advance, and nonfirm method.

06b7 BPA has a NEPA obligation to explore environmentally preferable allocations of PNW power rather than assuming continuance of CA's current share of PNW power (064-05).

Response:

Since the PNW plans to have sufficient energy available for low water years, average and above average years will produce energy excesses. This power must be either sold or spilled. Excessive spill has a negative impact on fish and revenues and increases consumption of fossil fuels in California. Often, no other markets are available during the spring runoff, therefore, continuance is a valid assumption.

06c Analysis of ISW Market

06c1 BPA's analysis for the ISW is in error. Tables 4.2.14, 4.2.19, and 4.2.24 show with the Third AC the PNW will generate 140 aMW more and the PSW and ISW will generate 171 and 118 aMW less,

respectively. Displacement due to 140 aMW shouldn't be over about 130 aMW when losses are considered. (PCF-2-10-05; 042-08)

Response:

See response to 06h3.

06d Analysis Of BC Hydro Operations

06d1 It should not be assumed that British Columbia thermal plants would be unaffected by any of the proposed actions (075-62).

Response:

Current BC Hydro policy prohibits running thermal resources to serve export markets. Therefore, in the IDU EIS studies, the BC Hydro thermal plant modeled in the study (Burrard) is not allowed to run for export. The tremendous storage capability of BC Hydro's reservoirs gives it the ability to shift well over one thousand gigawatthours of energy from future years into the current operating year. According to sources at BC Hydro, BC Hydro plans to avoid use of its thermal resources to meet projected load growth by shifting hydro energy from future years into the current year.

There are many small thermal plants that are part of the resource base of the nonintegrated system of B.C. Hydro. Since these resources are not tied to the integrated system, they operate independently of any action on the integrated system. These thermal plants would be unaffected by any of the proposed actions.

06d2 Even though relative shares of B.C. Hydro generation may not change, BPA should evaluate the absolute changes in generation quantities (075-69).

Response:

See response to comment 06d1 for B.C. Hydro system operation. The absolute change in generation would amount to higher usage of hydro first for firm loads and lower usage for nonfirm loads, but the total generation does not change. Hydro may be borrowed from future years to meet firm loads. In this case, higher generation would occur in the current year and lower generation would occur in the future year from which the water was borrowed. The average hydro over several years will not change.

06d3 BPA should consider at least one alternative B.C. Hydro pricing scheme in order to test the environmental results. (075-95)

Response:

SAM logic with respect to B.C. Hydro has been refined in the current studies for the IDU Final EIS in order to better reflect

B.C. Hydro's ability to market power to the PSW and to compete with PNW power. In the current studies, B.C. Hydro can "bump" PNW sales off of the Intertie when they have an Intertie allocation and can also sell to the PNW for firm loads when the PNW is short of power.

06d4 BPA should explain what feature of the BPA First Option it would implement to prevent B.C. Hydro sales under Condition 3 from causing a price drop. (075-96)

Response:

The BPA-First Option has been replaced in the final IDU EIS by a Hydro-First Option which gives priority to hydro-generated energy, but retains the other aspect of the three Conditions of the Proposed Policy regarding Formula Allocation of hourly access.

Since BCH has a large storage capability, they shape their energy to produce maximum revenues. This is particularly important to them since BC Hydro has a higher wheeling costs and must pay a generation tax to their government. While the existance of BC Hydro's energy may cause lower prices, the total sales to California vary by less than 1.5 percent under any Formula Allocation Option, and such small differences should cause only minor changes in market prices on an annual basis.

06d5 Additions to transmission capacity will not and cannot appreciably alter already optimized Northwest hydroelectric system operations. A similar conclusion results for transmission use policies. No impacts of consequence are likely to result. (059-23)

Response:

Although planning criteria are developed to help optimize regional hydro system operations, real-time operations vary within the planning guidelines according to actual conditions. For example, if there were no interties to California, some of the water which is now used to generate nonfirm energy for sale outside the region would be spilled due to lack of available market. Thus, even though planning criteria may be the same with or without interties, actual operations and environmental consequences could differ between the two situations.

06e Long-Term Firm Contracts

06e1 BPA should model a generic capacity exchange contract in which summer capacity and energy provided to California equals that provided in winter to the PNW. The return energy could drop in this case contrary to the result with the heretofore assumed exchange contract. (075-68, 99).

Response:

BPA recognized the potential impacts of PNW-PSW seasonal power exchange contracts, which were not modeled in the Draft EIS. The Final EIS analysis includes generic seasonal power exchange contracts, in which the PNW provides summer capacity and energy to the PSW in return for equal capacity and energy in the winter.

06e2 Concern expressed that Colstrip would be called upon to produce more power if too many firm contracts are negotiated, thus jeopardizing air quality (103-23).

Response:

Analysis of the effects of long-term firm contracts on generation at the Colstrip coal-fired plant, and resulting air quality impacts, are presented in Chapter 4.3 of the Final EIS. Studies prepared for the Final EIS show only very small increases in generation at Colstrip due to long-term firm contract conditions different from the Existing Contracts. The largest projected increase in generation was 5 average annual MW. Air quality impacts from changes in generation at coal plants were universally shown to be negligible by the analysis in the Final EIS.

06e3 The Draft EIS claims long-term firm contracts will reduce fisheries impacts and decrease new resource development -- this is contrary to past experience. (069-17)

Response:

Analyses prepared for the IDU Draft and Final EIS predict that many types of long term firm contracts (particularly capacity/energy exchanges) help reduce the level of resource development in each region. This is because the PNW's excess peaking can be traded for some of California's baseload energy, reducing the PNW's need to build baseload plants and California's need to build peaking plants. Additional firm loads during the spring provide increased flow levels for anadromous fish.

06f Years Chosen For Detailed Analysis

06f1 Insufficient information presented to provide assurance that the selection of the sample years was representative of future operations. (019-07)

Response:

The selection of study years was guided by the principle that they should cover a long period (but within the period for which BPA's analytical models, such as SAM, provide useful data), and should reflect a range of the load, resource, and Intertie conditions in which the Intertie will be used. The first of the Draft EIS study years (1987) was chosen as a near-term year in which the PNW would

continue to have a large firm surplus, and the Intertie would not yet have been upgraded. The second year (1992) was chosen as a year just after Intertie upgrades are completed, while the PNW still has a substantial firm surplus. The third year (1997) was chosen because it represents a year after the Intertie is upgraded, when the region is closer to load/resource balance. The fourth study year (2002) represents a period towards the end of the study horizon of BPA's analytical models. By 2002, the PNW should be in load/resource balance, while in California, loads will have grown substantially.

In order to distinguish the effect of extraneous influences from the effect of Intertie policy or capacity decisions, BPA's principal analytical model, SAM, uses a simulation method. For each study year, 200 runs are prepared for each Intertie alternative. For each run, the model randomly selects water conditions, loads varying around a projected mean, and thermal resource forced outages. The model then averages the results of the 200 runs in order to determine the expected outcome for that year. In this way, the model assures that the study reflects the expected value of likely conditions in the study year. For the same reason, in preparing the Final EIS, BPA decided to use 1988 as the first study year, in order not to confuse the modeled study year (which factors out the effects of anomalous water, load, and resource conditions) with the actual conditions occurring in 1987. The other study years were all moved forward one year.

06f2 A second commenter thought an actual generation year, rather than 1987, would better portray current conditions. (069-25)

Response:

See response to 06f1.

06g New Resource Analysis

06g1 BPA should make clear that simply allowing new resources to have access to the Intertie would not result in new resource development. In addition, denying access for new resources will not eliminate development, or the possible sale of such resources out of the region over existing or new Interties using non-BPA Intertie capacity. (075-73)

Response:

In the absence of any controls on access to the Intertie, upgrading the Intertie system is, effectively, the same as expanding the amount of load that can be served by resources in each region. Whether expanding the Intertie will lead to new resource development in the PNW depends on many factors, including the cost of resources and load growth in both regions, and the type of access granted to new resources (e.g., hourly versus long-term assured delivery). BPA's analysis, however, shows that

absent any controls on access to the Intertie, market conditions could lead to substantial development of new resources in the PNW to serve the southwest over the expanded Intertie. It is true that new resource development to serve extraregional markets could always occur over the Intertie capacity controlled by PGE and PP&L. The Final EIS assumes that a base level of firm power sales would be made over those shares of the Intertie and would be supported by existing and new resources.

06g2 The connection between the IAP and new hydro development in PNW, CA, and PSW should be elaborated upon. (103-17)

Response:

The IDU Final EIS considers several different marketing options for use of the Intertie and includes new hydro development as a Pacific Northwest resource. That resource is included in the set of available resources at an estimated price of development. The model that produces an optimal mix of resources in the Pacific Northwest to serve certain load and contract situations develops new hydro projects when it is most cost-effective to do so. Section 4.4, Tables 4.4.2 and 4.4.3 show the predicted effect of various alternatives on the development of new hydroelectric resources in the Pacific Northwest. Pacific Southwest resource development was considered generically in Section 4.4.3.

06g3 Three commenters believed BPA's use of the LCMM for this analysis was inappropriate since there is no guarantee resources will be developed in a least-cost fashion and there are many factors (e.g., environmental effects and costs, fish and wildlife mitigation costs, PURPA, other laws) not taken into account by the LCMM. New approaches to the analysis or modification of the model to take into account these factors was recommended. (044-03; 047-12, 49, 63; 069-07, 26, 27)

Response:

The LCMM is a regional model. Given a potential regional supply of various cost-effective resources, the model selects the combination of those resources that meets anticipated regional load growth at least- cost. There is no reason to expect that the various regional entities responsible for meeting the demand for electricity would select a final mix of resources that did not include all cost-effective resources. Nor would one expect that mix to be other than least-cost. It is impossible to model all of the complex interrelationships associated with resource acquisition decisions. The LCMM selects resources on the basis of least-cost. The resource supply curves input to the LCMM indicate amounts of resources available at particular prices. The development of these supply curves takes into account those factors that affect resource availability. As additional information concerning for example, environmental or fish and wildlife mitigation costs becomes available, resource supply

curves will be adjusted accordingly. Currently, this information is not universally available. Environmental cost case studies done for a few selected resources have shown environmental costs to often be negligible when compared to total costs of resources. The results of the LCMM provide one piece of information required for actual acquisition decisions. However, the results of the LCMM do provide the necessary assessment of what would likely happen to a particular selection of resources given alternative Intertie configurations.

06g4 All assumptions regarding new acquisitions may be invalid given the uncertainties and constraints described in the EIS regarding small hydro development, and assumptions pertaining to small hydro deferral benefits (136 and 181 aMW) may be invalid. (047-33, 48).

Response:

See the response to comment 03n3.

06g5 Many uncertainties such as those mentioned in 4.2.2.3 of the draft EIS are not discussed further nor reflected in the assumption that 736 aMW of new small hydro will be in place by 2002 with existing Intertie capacity. (047-47, 60).

Response:

BPA's Least Cost Mix Model was used to develop the projected level of hydro development included in the Draft EIS. As stated in the response to comment 06g4, the assumptions used in the Least Cost Mix Model have been updated for the Final EIS. Detailed information on the assumptions used is available from BPA upon request.

06g6 The source and derivation of the 736 aMW figure needs to be included in the EIS. (047-11, 40)

Response:

See response to comment 03n3.

06g7 The new resource analysis is flawed by not including PNW combustion turbines. Add 500-1000 MW of new combustion turbines into an alternative plan to test effects on such a system. (075-71, 98)

Response:

Currently, the region plans resource acquisitions to minimize cost under conditions of critical water. The new resource analysis conducted for the IDU Final EIS assumes this planning criterion to remain unchanged. The intent of the IDU EIS is to measure certain effects associated with alternative Intertie policies and configurations on the regional system as currently operated and

structured. To consider an alternative planning criterion such as minimizing cost under average water conditions with the addition of large amounts of new combustion turbine capacity is beyond the scope of the IDU EIS. That is not to say that an alternative resource plan would not affect the results of the IDU EIS. Such an option is beyond the scope of the IDU EIS and is being analyzed from a technical perspective in other studies, since it would not be directed to an IDU analysis per se, but to an analysis of system operating impacts associated with alternative resource configurations.

06g8 BPA states that with long-term sales and maximum Intertie capacity, the development of 236 aMW of new resources could be avoided. Commenter concludes that the Third AC will not necessarily be responsible for avoided resource construction. (097-10)

Response:

The new resource analysis prepared for the Final EIS indicates that Intertie capacity would have little effect on resource development in the context of BPA's proposed IAP.

06g9 Assess new resource effects associated with denying access for seasonal capacity and capacity/energy exchanges, particularly hydro incentives. (075-72; 047-13)

Response:

Resource development issues associated with several levels and combinations of firm contracts are discussed in Section 4.4 of the Final EIS.

06g10 The "December 1984 assessment of planned regional resources" should be discussed and compared with the Council's Energy Plan. (047-62)

Response:

See the response to comment 03n3.

06g11 The EIS mentions but does not discuss the Intertie stimulating potential for power farming in the NW in the future. (PCF-2-10-14)

Response:

The Final EIS examines the effect of various Intertie decisions on new resource development, and discusses, generically, the effects on the environment of the development of new resources of various types (see Section 4.4).

06g12 If least cost mix is not assumed in the analysis, the EIS should describe the need for expanded Intertie and the consequences for NW power resource development. (PCF-2-09-02)

Response:

The least cost mix model is used to determine new resources needed to meet PNW loads. Least-cost resource development is a reasonable assumption given utilities' desire to minimize production costs, and in the PNW, the Northwest Power Planning Council's role in facilitating least-cost supply. If expanding the Interties were to lead to more capacity/energy exchange contracts or long term power sales, then PNW resource development might be affected. The Draft and Final EIS economic studies assumed 2550 MW of long-term firm contracts with the existing Intertie system and an additional 600 MW capacity sale when the 3rd AC/COTP is added. For the environmental analysis, the 600 MW capacity sale was also assumed on the DC Upgrade. These amounts are based on analysis of the projected California market and PNW supply.

06g13 The EIS does not discuss the consequences of long-term contracts on NW resource development. (PCF-2-09-05)

Response:

Section 4.2 of the Draft EIS and Section 4.4 of the Final EIS address the new resource development consequences of long-term firm contracts.

06g14 If LCMM used is accurate, the Draft EIS does not adequately address the impacts of small hydro development. (087-27)

Response:

Section 4.5.3.3 of the Draft EIS contains a brief discussion on the impacts of hydroelectric development on fish and wildlife resources. The potential environmental effects of future small hydroelectric projects cannot be specifically discussed since the siting and design of such projects is unknown. The Final EIS discussion is adequate given the subjectivity of the development.

06h Operation Of PNW Coal Plants

06h1 The policy should encourage expanded markets for power generated by coal resources. (005-02)

Response:

Regional and extraregional buyers are likely to purchase power generated by coal-fired plants if that power is cost-effective and dependable.

It is anticipated that the proposed policy could foster these goals by providing a stable framework within which power producers can operate.

06h2 Commenters expressed a need for BPA to look at ways to reduce environmental impacts of PNW coal plants and to focus on ways to change the tradeoff between the NW's dirtiest, cleanest, and least expensive complexes. NRDC appended a report "Burning Coal for Export: Environmental and Economic Dimensions of Northwest Intertie Sales to California." The report contends that the vast majority of coal-fired electricity generated in the PNW from 1982-1985 was sold for export. In addition, analysis shows that the Northwest system does not operate in either an economically or environmentally optimal basis. For example, Centralia, one of the more expensive and dirty coal plants, was run far more than economically optimal, while Colstrip 1 and 2, among the cheapest and cleanest plants, were run less than economically optimal. The report concludes that BPA use the IAP to encourage more rational and environmentally sound dispatch of generation. (076-04, 12, 21; 078-02, PCF-1-01-01, 02)

Response:

See response to 03a1.

06h3 Table 4.2.2 in the Draft EIS shows that under the DC upgrade alternative, generation in the Pacific Northwest would increase approximately 100 aMW for hydro and 60 MW for coal, for a total increase of 160 MW. Tables 4.2.3 and 4.2.4, however, show that for the same Intertie alternative, generation is reduced by 106 MW in California and 250 MW in the ISW. How can 160 MW of increase in the Pacific Northwest offset 356 MW (106 E 250) of generation in California and the ISW? Similar apparent discrepancies exist for the other two Intertie alternatives, 3rd AC/COTP and Maximum Intertie. (019-29)

Response:

As noted on page 4.2-6 of the Draft EIS, during the course of the analysis for the Draft EIS, several improvements were made to SAM, some of which affected the Intertie study results. Some of the data presented in Chapter 4 were not fully consistent, although none of the data were so inconsistent that they changed the relative environmental effects of the various alternatives analyzed. For the Final EIS, the improvements to SAM developed for the Draft EIS have been adopted. In addition, in part in order to assure consistency among data, for the IDU Final EIS, BPA used its in-house model, the Marketing LP, for analysis of resource operations in the ISW and California, rather than Independent Power Corporation's ELFIN model. The results presented in the Final EIS are consistent and provide a reasonable analysis of the environmental effects of alternatives.

06h4 Commenter felt policy would require a CA entity to purchase thermally generated power from a PNW seller with a PNW transmission allocation even when another utility in the PNW had available more efficient (and environmentally more desirable) hydro generated resources. Inefficient and contrary to a national policy of minimizing environmental impacts and preserving precious natural resources. (049-01)

Response:

Thermal and hydro resources are normally run simultaneously in the PNW and this is in no way inefficient or contrary to national policy. During periods of spill the PNW thermal plants are normally displaced by the lower cost hydro energy and under these conditions thermal energy would not usually be on the Intertie. The proposed LTIAP is designed to equitably allocate access to Intertie capacity, not to give California preferential access to PNW hydro generation.

06h5 Investigate environmentally preferable alternatives to current operating procedures in order to reduce coal-related pollution from export sales. (078-02)

Response:

See the response to comment 03a1.

06i Other

06i1 Show in the EIS that surplus hydroelectric generation can be used in the PNW to reduce nuclear fuel consumption. (042-03).

Response:

Using nonfirm hydroelectric energy to displace nuclear generation is one possible use of that nonfirm energy. Because nuclear fuel costs are so low, the potential savings from using hydroelectric energy to displace nuclear generation are small. In addition, because nuclear refueling is usually done on a fixed schedule, using nonfirm hydroelectric energy to displace nuclear generation would have to be coordinated with the plant's previously planned refueling cycle. Nonfirm energy would have to be forecast to be available for an extended period of time to justify using it to displace nuclear generation. Because of the low potential savings, nuclear generation would be displaced only after displacing PNW coal plants (whose fuel costs are higher) and serving the California market (which produces higher revenue). Due to the small probability of occurrence, and its low potential benefits, nuclear displacement was not assumed to occur in the IDU Draft EIS analysis.

06i2 Figure 4.2.5 is not a reasonable representation of the proposal. Use actual data. (042-20)

Response:

Figure 4.2.5 of the Draft EIS portrays the general principle of how shifting energy into peak load hours is valuable to buyer and seller. BPA believes the figure is a reasonable representation of a common market circumstance and that the figure is a useful illustration of how energy sales can be shaped into peak hours.

06i3 In reference to the footnote on page 4.2-6, BPA should identify any inconsistent data, provide an explanation of the inconsistency, and estimate the impact. (075-64)

Response:

See response to 06h3.

06i4 In reference to Section 4.2, a more comprehensive discussion of conservation should be prepared, in which some of the widely separated discussions in the EIS would be placed, and in which the discussion would be expanded to more fully consider how conservation might be affected by the development of various Intertie expansion and access alternatives. (090-39)

Response:

Conservation is only one of many factors potentially affected by Intertie decisions. The IDU Draft EIS addresses conservation as one of several types of power sources. The analysis was structured to provide an indication of the impact of Intertie decisions on the development and operation of various power sources. This was the primary purpose of Chapter 4.2. In subsequent sections, the potential impact of changes in the development and operation of various types of power resources is considered. Therefore, the effects of changes in the development of conservation are addressed in a variety of locations throughout the text. This procedure was used to assist in focusing attention on specific types of affected environmental parameters, rather than on the resource operation or development actions affecting those parameters. While it would be possible to reorganize the presentation of material around resource types, it is believed that this would detract from the integrated understanding of environmental impacts fostered by the current structure of the document.

Because of conservation's very nature, Intertie decisions are not expected to influence the savings achieved by conservation measures already in place. However, the effects of Intertie decisions on the development of new conservation are addressed, along with effects on various types of generation resources, in

the Draft EIS in Volume 1, Section 4.2.3.3, "New Resource Development" and in Section 4.4 of the Final EIS.

06i5 BPA should include sensitivity analyses for alternative Intertie pricing, full costs, Canadian competition, load growth and load/resource balance forecasts, and the installation of combustion turbines as likely future Northwest resources. (075-24)

Response:

For the Final EIS, BPA prepared a number of environmental and economic sensitivity studies. A description of these studies is provided in Appendix B, Part 6. The issue of combustion turbines is not dealt with in this EIS. See response to 6g7.

B07 LAND USE AND NONRENEWABLE RESOURCE EFFECTS

07b Attempts to mitigate the effects of [constructing Intertie lines or upgrading existing lines] on other resources, such as visual impacts, aesthetics, recreation, wildlife, and air and water quality could increase impact on land base available and currently used for economically valuable natural resources uses. (108-03)

Response:

The potential environmental impacts of the physical facilities of the Intertie expansion projects discussed in this EIS are analyzed in separate environmental documents. The COTP EIS/EIR, prepared by the Western Area Power Administration and the Transmission Agency of Northern California, with BPA as a cooperating agency, examines the potential environmental impacts associated with completing the COTP in California and Oregon and the related system upgrades in Oregon and Washington. The DC Terminal Expansion Environmental Assessment (EA) and Supplemental Environmental Assessment examine the potential physical impacts of upgrading the DC Intertie. BPA and the other Federal agencies involved in the decisions to upgrade the Intertie through either project will rely on information contained in this EIS as well as the COTP EIS/EIR and the DC Terminal Expansion EA in assessing the environmental impacts of the Intertie upgrade proposals.

07c The EIS should contain a discussion of the uses of renewable resources versus nonrenewable resources. (068-18)

Response:

The EIS examines the consumption of nonrenewable resources in Section 4.3.1. See also response to 00d6.

07d The proposed Intertie may affect the production and use of coal reserves in New Mexico. (026-01)

Response:

It is possible that decisions about Intertie policy or capacity may affect the level of generation by coal-fueled plants in the Inland Southwest (including New Mexico), and thus may affect the production and use of coal. Section 4.3 of the Final EIS addresses this issue and quantifies expected changes in the consumption of coal for the Inland Southwest. It appears that the only coal plant in New Mexico likely to be affected substantially by Intertie decisions is the San Juan coal plant.

07e Tables in Chapter 4 err in their reporting of oil consumption by a factor of 1 billion. (042-07)

Response:

Footnotes for some of the tables in Chapter 4.3 incorrectly defined the abbreviation "Bbls: as "billion Barrels." The mistake has been corrected in the Final EIS.

B08 AIR QUALITY EFFECTS

08a Air Pollution from PNW Coal Plants

08a1 Provide comparisons of the air quality effects of various NW coal-fired generating plants. (035-04)

Response:

Section 4.3.2 and Appendix G of the Final EIS include information on the relative levels of pollution from each PNW coal plant and how the predicted level of pollution from each plant would vary according to Intertie decisions analyzed in the EIS.

08a2 Investigate means of mitigating adverse air quality impacts within the respective regions affected by any of the options. (064-04; 093-03).

Response:

The Final EIS analysis predicts that the changes in ambient air quality among the Intertie decision cases would not be large enough to require mitigation. Each generating facility, through licensing procedures, must meet mandated pollution control standards and permit conditions. Each plant would continue to operate within its environmental requirements or face enforcement action.

08b Relationship Between Intertie Sales and Air Pollution

08b1 Simply increasing transfer capability between regions will not in itself change air quality one way or another. Pricing of PNW power, BPA rate predictability and reasonableness, the ability to

negotiate long-term power sales all affect how additional Intertie capacity will be used. Reasonable assumptions regarding patterns of use are necessary in accurately evaluating the environmental consequences. (074-10)

Response:

It is true that simply increasing transfer capacity will not by itself lead to the interregional sales that, in turn, will lead to changes in air quality. However, it is equally true that unless the utilities in the PNW and California that must finance Intertie additions predict that such sales will occur, the Intertie upgrade projects will not be initiated. BPA believes that the studies for the Draft and Final EIS are based on reasonable assumptions about the relevant variables. In addition, the Final EIS includes sensitivity analyses examining other values for several key variables (see Section 4.1.3).

08b2 Air quality impacts in Utah from transfer of surplus to California would if anything go down because of decreased emissions from the Intermountain Power Project. (023-01)

Response:

BPA's analysis of the effect of Intertie sales on thermal generation in the Final EIS predicts that coal generation at the Intermountain Power Project would not be substantially affected by Intertie decisions.

08b3 Page 4.4-20, first paragraph, should be changed as follows: ". . . central California, and would indirectly serve southern California. Some of the PNW Power brought in over COTP would displace power produced at plants in the Los Angeles area. Nonetheless, fewer people would . . . Expansion project" Delete "However . . . would result from the Third AC/COTP." Leave the last sentence as is. (068-24)

Response:

The requested wording change has been made.

08c Technical Points

08c1 BPA should have performed its air quality analysis using hourly information, considering the remarks in 2.2.1.4 of the draft EIS. (075-44)

Response:

The air quality analysis did address the maximum hourly average concentration downwind of each power plant in the PNW and ISW. The maximum hourly average ozone concentration was estimated for each basin in California. These were worst case analyses and did

not incorporate a complete year of hourly data. The analysis focused upon the worst case hourly average and the maximum annual average concentration as indicators of air quality impact. These are commonly used parameters because they are readily comparable to ambient air quality standards.

08c2 BPA should have used a regional model, such as RIVAD or RTM, to assess acid deposition in the Western states. (075-74)

Response:

Acid deposition is covered in Volume 1, Section 4.3.2 of the IDU Final EIS in considerably more detail than in the draft. The complex transport, transformation, and removal processes involved in acid deposition were modeled at Argonne National Laboratory using a regional transport approach.

08c3 Application of annual average concentrations to a large number of receptors to assess air quality impacts was meaningless. Gaussian models are not meant for regional application. (075-76)

Response:

In the revised air quality analysis, the average number of receptors has been dropped and the maximum annual average concentration at a receptor has been calculated.

08c4 A commenter pointed out that the SO_2 to SO_4 conversion rate used in the analysis was not reported in Appendix B. (075-101)

Response:

The SO_2 to SO_4 conversion rate was assumed to be 1 percent per hour as indicated in Appendix G.

08c5 Currently in California short-term air quality standards (O_3 and PM-10[3]) are being violated, not long-term standards. A seasonal model should be used. (075-75b)

Response:

The effects of seasonal changes in meteorology and power plant operations are addressed in an analysis of ozone concentrations for spring, summer, and fall for the Los Angeles Basin as described in Volume 1, Section 4.3.2 in the Final EIS.

08c6 The argument for a reduction in exposure of a population to air pollution from Intertie capacity and policy changes is unsubstantiated and incorrect. Reductions in NO_x emissions in California could lead to increased exposure to ozone. In addition, an increase in SO_2 and NO_x emissions in the PNW may be detrimental from the standpoint of acid deposition in the Cascades. (075-77)

Response:

It is true that reductions of NO_x emissions in Los Angeles could produce an increase in ozone concentrations under some conditions. It is also true that an increase in SO_2 and NO_x emissions in the PNW could lead to increased acid deposition. In any case the total changes in ozone levels arising from the calculated shifts in power plant operations are quite small. For 11 of the 12 worst case ozone days used in the analysis ozone concentrations decreased for reduced NO_x emissions. In the PNW, the levels of increase in ozone are small, and the effects on acid deposition would be difficult to discern from the natural variability in acid deposition.

08d Other

08d1 Two commenters asserted that BPA should act to prevent air pollution in the Los Angeles basin by selling power to displace fuel burning there. (035-03; 099-02)

Response:

In fact, BPA has, and will continue, to market substantial quantities of surplus power to utilities serving the Los Angeles Air Basin. This power is typically used to displace gas or oil fired power plants in that region, thereby reducing average emission levels from those power plants.

08d2 Another commenter believed air quality impacts in California associated with firm contracts could be reduced if the capacity exchanges traded equal amounts of capacity and energy. (075-78)

Response:

A contract which seasonally exchanges equal amounts of capacity and energy would be considered a seasonal power exchange contract. Seasonal power exchange contracts were not included in the draft EIS. BPA is aware of possible environmental impacts in California and the Final EIS does include generic seasonal power exchange contracts.

08d3 The air quality analysis precludes a reasonable assessment of air quality impacts by decision package. (075-75)

Response:

Results of the air quality analysis are discussed in Volume 1, Section 4.3.2 of the Final EIS, and are tabulated in Appendix G. A large number of cases was analyzed to determine differences in air quality, and the reader can draw on these cases to assess the air quality impacts of the decision packages. However, air quality differences shown between cases were universally very small. For this reason, air quality impacts of the decision

packages were not generally discussed in Volume 1, Chapter 2 of the Final EIS.

08d4 BPA should provide a summary of emission estimates for all decision packages along with emission projections for all other sources. (075-75a)

Response:

See the response to comment 08d3. Appendix A of the Final EIS indicates current emissions for IDU EIS study areas. Since emissions by other sources will not vary in response to BPA Intertie decisions, projections of emissions from other sources were not specifically considered in the EIS air quality analysis.

08d5 The DC TEX EA is unjustified in concluding no significant effect for acid deposition or trace element concentration. Not knowing how to measure does not excuse us from undertaking research. Even small proportional increases in generation may translate into significant absolute impacts -- BPA should research this. (INC-03-08)

Response:

Research on acid deposition is a strong component of our national atmospheric research programs. However, significant investigation into the development of new and improved techniques for measuring acid deposition is outside the scope of this EIS. Additional analysis and discussion of acid deposition and trace elements has been added for the Final EIS and is in Volume 1, Section 4.3.2.

B09 WATER USE AND FISHERIES IMPACT RELATED TO THERMAL PLANT OPERATIONS

09a The EIS needs to present quantitative data to support conclusions that impacts to water quality due to intertie capacity and policy changes will be insignificant. (075-79)

Response:

Information on the effects of hydroelectric operations on water quality is presented in Volume 1, Chapter 4, Section 4.2.4. Information on the consumption of water in the operation of thermal power facilities is presented in Chapter 4, Section 4.3.3. Additional text and tables have been added to Section 4.3.3 of the EIS further describing and documenting the effects of Intertie Capacity and policy changes on water use, supply, quality, and impacts on aquatic life.

09b Will the proposed IAP reduce generation at Pittsburg and Contra Costa power plants during certain times of the year, and possibly reduce the entrainment mortality of striped bass larvae and juveniles? (075-81a; 103-19, 20)

Response:

The analysis for the Final EIS, which used the Marketing LP model to project changes in California generation, did not produce plant specific changes in generation, unlike the Elfin model used for the Draft EIS. Presumably alternatives which are projected to produce increases in displacement (i.e., decreases in generation) at California generating projects, and especially those alternatives which tend to displace northern and central California resources, would affect operations at the Pittsburg and Contra Costa plants such that they are displaced to a greater degree. However, there is only an indirect relationship, in general, between plant operating levels and cooling water pumping. So while there is a potential for a reduction in entrainment mortality at these plants, a significant reduction is not likely.

09c Expand discussion of impacts on fish and wildlife resources as a result of increased production/transportation and operations of coal, oil, and gas generating plants in the PNW and in CA. (103-05)

Response:

The discussions in the Draft EIS of impacts on fish and wildlife resources as a result of increased production/transportation and operations of coal, oil, and gas generating plants are brief and qualitative due to the subjective nature of this development related to Intertie activities.

09d Address potential adverse impacts on the Sacramento and San Joaquin Rivers and the Delta, particularly regarding anadromous fish. (103-15)

Response:

Additional material has been added for the Final EIS in Volume 1, Section 4.3.3 that further describes the effects on surface waters including those around the San Francisco area.

09e Discuss potential adverse impacts to the fish and wildlife resources of Moss Landing Harbor due to changes in operation of the Moss Landing Plant. (103-16)

Response:

Studies at Elk Horn Slough have indicated that although the power plant does entrain organisms and emits a thermal plume, there are no overall, significant impacts. Any effects of power plant operation are overshadowed by other, more extensive modifications, such as historical removal of tide lands by dikes and the opening of the Slough to extensive tidal currents. These currents create

more flushing action than the power plant pumping (personal communication, 1987, John Oliver, Moss Landing Marine Laboratory). Changes in operation at this power plant should not have any adverse effect on fish and wildlife resources in the area.

09f Acid deposition is identified as a potential impact to surface waters in the Western states, yet no quantitative analysis was performed to analyze the effects of emission changes on water quality. (075-81b)

Response:

Additional discussion of acid deposition in California and the Pacific Northwest has been added for the Final EIS in Volume 1, Section 3.2. Analysis discussed in Section 4.3.2 indicates that the percentage change in sulfur deposition resulting from shifts in Intertie operation are very small. The percentage changes in water quality are also presumably small although the cause-effect relationships are still not firmly established.

B10 FISH EFFECTS

10x General

10x1 The IAP is not linked to evaluation of fishery impacts. It should be. (PCF-2-04-01)

Response:

The LTIAP is linked to the evaluation of fishery impacts. SAM was operated to simulate expected hydrosystem operations with different Intertie capacity and policy options. The resulting SAM output of physical data was then analyzed for fish passage impacts using the FISHPASS. Other methods of analysis were employed for other potential anadromous and resident fish impacts.

10x2 P. 2-4: Last sentence in bullet #3 should read "Access to hydroelectric resources is an issue because of potential impacts to fisheries and wildlife resources." (069-15)

Response:

Suggested language change has been adopted.

10x3 Alternatives should be based on water flow available after judicial and federally mandated water flows required to protect fish and wildlife are provided for. (070-06)

Response:

Judicially and Federally mandated water flows must always be considered and provided for no matter which Intertie decision alternative is chosen.

10x4 Table 2.1: No protective measures are provided for fish and wildlife under packages #1 and #6. This seems to be because BPA will have no control through this policy over the development of new Non-Federal resources harmful to its fish and wildlife program. (075-56)

Response:

The comment is correct. Under the Draft EIS alternative package #1, BPA would not have a policy governing intertie access. Therefore, fish and wildlife protection provisions would not be in force. Under alternative package #6, BPA would return to pre-IAP practices which did not include fish and wildlife protection concerns.

10x5 Anadromous and resident fish will be adversely affected by expansion of the Intertie. (105-01; 072-01)

Response:

Impacts to anadromous and resident fish were re-evaluated for the Final EIS and results are reflected in Final EIS tables in Volume 1, Section 4.2.3.

10x6 The LTIAP issue paper proposed the addition of a new standard for protection of environmental values ". . . no adverse impact on fish and wildlife." This new standard was not included in the Draft EIS. (047-25)

Response:

The "new standard" mentioned does not affect load on the system. If a new resource interferes with BPA's efforts in fish and wildlife protection, that new resource is allowed access to the system at the cost of decrementing the resource operator's overall load capacity on the Intertie equal to the amount produced by the new resource. This type of accounting diminishes the operator's incentive to add new resources which adversely affect fish and wildlife.

10a Fish Protection Provisions

10a1 Consistent with Fish and Wildlife Program

10a1A BPA should keep provisions in its Policy to protect fish. One commenter particularly supported the prohibition of hydropower generators that have new impacts on fish and wildlife. (PCF-2-08-08; PCF-3-02-07; 038-01; 036-02)

Response:

The IAP fish and wildlife provisions have been rewritten. The revised IAP prohibits access to new hydro harmful to fish through

the use of "Protected Areas." See Administrator's Decision Document.

10a1B One commenter supported the objectives of section C(3)(c)(3) of protecting BPA fish and wildlife expenditures and limiting risks to Federal projects only. (040-02)

Response:

The IAP fish and wildlife provisions have been rewritten. The revised IAP prohibits access to new hydro harmful to fish through the use of "Protected Areas." See Administrator's Decision Document.

10a1C PNGC and IPC support PNUCC's comments on the fish and wildlife provisions (080-01; 057-03)

Response:

The IAP fish and wildlife provisions have been rewritten (see Administrator's Decision Document).

10a1D According to the Ninth Circuit (1985), Federal agencies are obligated to exercise their authorities in a manner that will protect -- not degrade -- the habitat needed to support anadromous fish. (087-01)

Response:

The IAP fish and wildlife provisions have been rewritten. The revised IAP prohibits access to new hydro harmful to fish through the use of "Protected Areas." See Administrator's Decision Document.

10a1E BPA's approach to analyzing the consequences of the Intertie as departures from the status quo is not acceptable. Three changes are necessary to cure this conceptual flaw: discussion of the cumulative effects of hydropower system operations, analysis of the institutional effects of contemplated actions, and measures to mitigate for these effects. (072-05)

Response:

BPA's analysis of potential Intertie effects on fish and wildlife fully accounted for the cumulative effects of the hydroelectric system. FISHPASS modeling fully accounted for all known effects of the hydroelectric projects on fish passage, taking into account the cumulative nature of this issue. Measures to mitigate adverse impacts, if necessary, will be discussed in the IDU Final EIS. The effect of Intertie development and use on fishery institutional arrangements varies with alternatives. Most alternatives have such insignificant effects on fish production that fishery institutions would not be likely to see any change.

10a1F The conditions allow access to Federal resources that are not in compliance with the Fish and Wildlife Program: this should be adjusted to include all resources desiring access. In addition, Appendix IIb of the program should be recognized as one of the conditions for granting access. (PCF-2-04-02; 078-07)

Response:

BPA has not included Federal projects because Section 4(h)(11)(A) of the Act already requires BPA to market energy from Federal projects in a manner that provides equitable treatment for fish and wildlife. Therefore, there is no need for BPA, through its own policy formulation, to direct its own actions required elsewhere by law. The IAP fish and wildlife provisions have been rewritten. The revised IAP prohibits access to new hydro harmful to fish through the use of "Protected Areas." See Administrator's Decision Document.

10a1G The Draft EIS should state specifically how Intertie development and use will be constrained so as not to impede development and implementation of the required comprehensive fish/energy plan. (081-04)

Response:

BPA development and operation of the Intertie must be accomplished under the direction of the Act including the Act's directions about the fish and energy plans developed by the Council.

10a1H The areas that the Council has listed to be protected from dam development must not be endangered by Intertie sales. (065-08)

Response:

The IAP fish and wildlife provisions have been rewritten. The revised IAP prohibits access to new hydro harmful to fish through the use of "Protected Areas." See Administrator's Decision Document.

10a1I Analysis of three types of institutional impacts are necessary to discuss how the IAP will affect the future development of the Council's Fish and Wildlife Program and attainment of the Program's proposed interim goal: impacts on the ability to supply levels of spill and flow greater than currently called for in he program, impacts on the ability to provide fish protection with system flexibility, and implications for decisionmaking strategy for basin production planning. (072-11)

Response:

BPA's development and use of the Intertie would not limit the implementation of the Council's Fish and Wildlife Program. Flows and spills in the FCRPS affecting salmon and steelhead are

established not by BPA's power marketing desires, but by the Corps of Engineers (Corps) in operations of its projects. Should the Corps need to vary these fishery operations, BPA's power marketing would be adjusted accordingly.

10a2 Compliance Presumption

10a2A There should be requirements, not presumptions, that existing resources satisfy fishery conditions in the Policy. A requirement could be demonstration as well as reporting and certification of continued compliance in the conditions. Violation of a certification should lead to an enhanced penalty, such as disqualification of the utility from Intertie access for a period of time or a substantial monetary penalty. (PCF-2-04-03, 06; 103-34; 072-38, 39; 063-01)

Response:

The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been eliminated. See Administrator's Decision Document.

10a2B BPA should require declaration of specific resources for which Intertie access is being requested: the declaration should contain enough information to determine consistency with LTIAP, NW Power Act, and plans of appropriate fish and wildlife agencies and tribes. (069-46)

Response:

The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been eliminated. See Administrator's Decision Document.

10a2C BPA should commit FTE and money to investigate compliance with fishery conditions as requested by fisheries agencies and tribes; should also conduct random investigations to verify effectiveness. (072-27)

Response:

The IAP fish and wildlife provisions have been rewritten. The revised IAP prohibits access to new hydro harmful to fish through the use of "Protected Areas." See Administrator's Decision Document.

10a2D One commenter felt the presumption of compliance remains appropriate unless and until a conclusion to the contrary is sustained by proper authorities. (059-09)

Response:

Comment noted. The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been eliminated. See Administrator's Decision Document.

10a3 Institutional Issues

10a3A The EIS should contain discussion of institutional impacts. (PCF-2-09-06; 047-24)

Response:

Please see p. 4.2.1-1, Volume 1, Final EIS for a discussion of the institutional conflicts stemming from competing uses of the hydrosystem.

10a3B BPA should not create a new regulatory process to protect fish and wildlife, but should participate in existing ones. (079-08, 09; 082-03, 42; 027-11)

Response:

BPA drafted the LTIAP to rely as much as possible on existing regulatory mechanisms so as not to duplicate the responsibilities of other governmental bodies. BPA will utilize these existing regulatory mechanisms to the extent possible, while ensuring its responsibilities for fish and wildlife protection under the Act are met. See Administrator's Decision Document.

10a3C BPA has cited no statutory authority for denying access to the capacity of resources which it deems harmful to fish and wildlife. (091-03)

Response:

BPA's statutory authority for denying access to a resource as specified in the LTIAP is the Regional Act, specifically Section 4(h)(10)(A) and 4(h)(11)(A). These references are included in the Final EIS. BPA has supplementary authority in the National Envirnonmental Policy Act, §101(b)(4), "to use all practicable means, consistent with other essential considerations of national policy, to improve and coordinate Federal plans, functions, programs, and resources to the end that the Nation may . . . preserve important historic, cultural, and natural aspects of our national heritage, and maintain, wherever possible, an environment which supports diversity, and variety of individual choice."

10a4 Preemptive Right For Resources Harmful To Fish And Wildlife Program

10a4A Subsection F(1) gives BPA preemptive rights that are far too broad. The focus should be narrowed to only the unloaded portion of the Intertie. (PCF-2-02-06; 056-34; 090-31; 082-33)

Response:

Comments noted. The IAP fish and wildlife provisions have been rewritten. The revised IAP prohibits access to new hydro harmful to fish through the use of "Protected Areas." See Administrator's Decision Document.

10a4B Support preempting Intertie access to market BPA generation available from water releases required to enhance fish migration. One commenter suggested the following change to the last sentence in Section F(1):

> . . . BPA reserves the right to preempt this allocation, in part or in whole, should BPA require additional Intertie Capacity in order to [take actions] make sales from generation available to BPA from operations to protect Fish and Wildlife resources within the Columbia River Basin. (058-05, 28; PCF-2-005-04)

Response:

Comments noted. The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been rewritten.

10a4C Include an allocation of power to serve during years of extreme low flow to prevent damage, especially if an extreme demand for power were to occur during the same period. Damage includes the important economic impact of stream and lake levels to recreation and tourism in Montana, as well as impacts upon fisheries. A balanced load-resource plan would be preferable to costly mitigation resulting from failure to provide for such contingencies. (021-03)

Response:

The owners/operators of Federal projects in the Columbia River Basin, i.e., the Corps, and the Bureau of Reclamation establish the constraints for operations at their projects. These constraints include flow and reservoir levels to protect nonpower uses. BPA markets the electric power that is generated. Therefore, allocating power for protection of recreation is not necessary.

10a4D A utility should not be excluded from use of the Intertie if its resources negatively impact regional fish and wildlife programs. Instead, legal alternatives should be pursued to obtain a just solution through the court process. (022-05)

Response:

Section 4(h)(10) of the Act requires BPA to use its funds and authorities to protect fish and wildlife in the Columbia River

Basin. BPA proposes to use its transmission responsibilities in the LTIAP to act consistently with its fish and wildlife responsibilities. It is not necessary for BPA to pursue court resolution of issues within the responsibilities of the BPA Administrator. See Administrator's Decision Document.

10a4E Paragraph I.3.e.(2). Expenditures in lieu of modifications to remove adverse impacts may be inconsistent with the Fish and Wildlife Coordination Act, NEPA, NWPA, and other applicable laws. Resource agency and tribal involvement should be incorporated into this decisionmaking process. (047-75)

Response:

The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been eliminated. See Administrator's Decision Document.

10a4H Alternative IAP removes illegitimate conditions for access which discriminate on the basis of fish and wildlife considerations. (091-16)

Response:

BPA's proposed policy language to protect fish and wildlife resources is not illegitimate. Under Section 4(h)(10)(A) of the Act, BPA must use its authority to protect, mitigate, and enhance fish and wildlife resources adversely impacted by the development and operation of any hydroelectric resource. BPA's fish and wildlife protection language in the IAP is proposed to extend this legislative mandate to BPA's actions.

10a4I Allocation reduction for fish and wildlife concerns will not stand in court. (085-04)

Response:

BPA proposed the access policy's fish and wildlife protection language in accordance with Section 4(h)(10)(A) of the Act. The comment is noted.

10a5 Terminology Of Provisions

10a5A The use of the term "substantial adverse impact" and "substantial decrease" in describing unacceptable levels of impact does not reflect a policy that allows "no adverse impact on fish and wildlife." These conflicts should be resolved. (047-26)

Response:

The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been eliminated. See Administrator's Decision Document.

10a5B Several comments questioned BPA's use of the words "substantial" and "significant" in the policy. Substantial implies an impact large in absolute terms. Significant should be used to permit BPA to consider the potential impacts and their importance in their appropriate context as well as inconsistency with the Council's Fish and Wildlife program. Also, one commenter felt that the ODFW, IDFG, WDFG, CRITFC, and the NWPPC should set standards for levels of impacts that can legally occur. Another commenter suggested an adequate definition of the term "substantial" as follows: Any activity that may result in mortality or injury to anadromous salmon and steelhead resources or loss of natural habitat of any anadromous salmon and steelhead resources except when an owner or operator of the new hydroelectric plant proposes to modify an existing facility or project in such a manner that can be shown to restore, enhance, or improve anadromous fish populations within that river system. (072-43; 044-12, 13, 15; 065-06)

Response:

The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been eliminated. See Administrator's Decision Document.

10a5C Rewrite Section C.3.c(1)(2)(3): "At any time the Administrator determines that an existing or proposed PNW Resource within the Columbia River has the potential to substantially and adversely impact fish and wildlife in a manner that results in a substantial decrease in the effectiveness of, or a substantial increase in the need for, expenditures or other actions by the Administrator to protect, mitigate, or enhance fish and wildlife; or otherwise substantially interferes with the obligations of the Administrator under the NW Power Act to adequately protect, mitigate, or enhance fish and wildlife including taking into account in each relevant stage of decisionmaking processes to the fullest extent practicable the Fish and Wildlife Program adopted by the Council pursuant to the NW Power Act; the Administrator shall take all appropriate and necessary action with the applicable licensing or regulatory state and Federal bodies to ensure elimination of the substantial adverse fish and wildlife impacts or restrictions of generation until compliance is provided". (085-07, draft dated 12/23/86)

Response:

The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been eliminated. See Administrator's Decision Document.

10a5D P. 4, C.3.c.(1): recommend this be changed to read "The construction or operation of a qualified Pacific Northwest resource that will have, in the views of appropriate fish and wildlife agencies and tribes, an adverse impact on fish and wildlife resources." (069-52)

Response:

The IAP fish and wildlife provisions have been rewritten. The revised IAP prohibits access to new hydro harmful to fish through the use of "Protected Areas." See Administrator's Decision Document.

10a5E C.3.c.(3) "Suggested change (delete between < >): The operation of <Existing> Pacific Northwest Resources whose use will have substantial adverse impacts on Fish and Wildlife <in a manner that results in a substantial decrease in expenditures or other actions by the Administrator to protect, mitigate, or enhance Fish and Wildlife>, or otherwise substantially interferes with the obligations of the Administrator". (058-15)

Response:

The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been eliminated. See Administrator's Decision Document.

10a6 Extend Beyond Columbia Basin

10a6A Many commenters felt that the fish and wildlife provisions of the policy should extend beyond the Columbia Basin and should also include Federal projects. (044-16; 047-66a; 069-45, 56; 072-40a; 075-80)

Response:

BPA's authority to protect fish and wildlife resources is provided by Section 4(h)(10)(A) of the Act. This authority is specifically limited to the Columbia River Basin.

BPA has not included Federal projects because Section 4(h)(11)(A) of the Act already requires BPA to market energy from Federal projects in a manner that provides equitable treatment for fish and wildlife. Therefore, there is no need for BPA, through its own policy formulation, to direct its own actions required elsewhere by law. The IAP fish and wildlife provisions have been rewritten. The revised IAP prohibits access to new hydro harmful to fish through the use of "Protected Areas." See Administrator's Decision Document.

10a6B Since the Draft EIS (pg. 27f) shows that the FCRPS will have a negative effect on some anadromous fish stock, why are protection features of the policy addressed only towards new and existing non-Federal hydro facilities? (047-42)

Response:

See comment 10a6A.

10a7 Enforceability

10a7A Commenters were concerned about adequate and enforceable conditions in the policy, and the lack of enforcement means for existing resources. The preferred means of enforcement is for BPA to refuse access for a utilities' entire allocation if a resource is damaging fish and wildlife. (047-41, 66, 74; 072-37; PCF-2-04-05)

Response:

The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been rewritten.

10a7B BPA should explain its legal authority to enforce compliance, and should better define references to sanctions for noncompliance or delete. (054-12; 071-23)

Response:

The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been rewritten.

10a7C A fish and wildlife policy on Intertie access which include enforceable provisions should be developed consistent with purposes of the NW Power Act and the Council's fish and wildlife program. (070-08)

Response:

The IAP fish and wildlife provisions have been rewritten. The revised IAP prohibits access to new hydro harmful to fish through the use of "Protected Areas." See Administrator's Decision Document.

10a8 Remedies/Noncompliance

10a8A Many comments stated that Section I(3) was inappropriate, places BPA in a regulatory role (better handled by FERC), and should be deleted. (056-37; 082-36; 084-06)

Response:

See response to 10a4H

10a8B Support BPA's provisions to protect fish and wildlife and support BPA's proposal to decrease a utility's share of the Intertie by amount of noncomplying resource. One commenter felt a stiffer sanction should be imposed -- decrementing by a multiple of the capacity of an offending resource. (044-11; 072-46)

Response:

The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been rewritten. A section in the Decision Document addresses the sufficiency of enforcement mechanisms.

10a8C We recommend that to protect BPA, access be under the condition that the owner and/or operator indemnify BPA for any future fish and wildlife costs. (040-03)

Response:

The provision this comment refers to has been rewritten. BPA can intervene in the FERC licensing process to protect its natural resources and fiscal interests. BPA does not believe an indemnity would be necessary, particularly with the use of "protected areas," because access to the Intertie will be prohibited for resources that increase BPA's fish and wildlife costs.

10a8D We suggest that BPA attempt to establish a remedy for noncompliance with the provisions of the LTIAP other than a "refusal to accept schedules" as set forth in Subsection I(2)(b)(2). (074-02)

Response:

The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been rewritten.

10a8E Develop a method of spot checking the declarations of utilities. Develop an enforceable disincentive to discourage users of the Intertie from inflating declarations. (082-40)

Response:

"Use or pay" provisions are automatic incentives to prevent utilities from inflating declarations.

10a8F Section I.3.f.2; change the decremental provision from one of a straight capacity reduction of the allocation to one of a reduction of the allocation by ratio of the New Hydroelectric Plant capacity to the declaration. (090-35)

Response:

The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been rewritten.

10a8G Expenditures in lieu of compliance with fishery conditions should be removed from policy, particularly where wild and natural stock are affected. Responsible agencies and tribes should be consulted in determining whether offsite mitigation measures are appropriate. (PCF-2-04-04; 072-48)

Response:

The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been eliminated. See Administrator's Decision Document.

10a8H Recommend that the time allotted to determine if a resource has adverse impact on fish and wildlife be made within 30 days. (047-78)

Response:

The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been eliminated. See Administrator's Decision Document.

10a8I Compliance procedure and the details of an appeal process should be included in the LTIAP and discussed in the Draft EIS. (072-40)

Response:

The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been eliminated. See Administrator's Decision Document.

10b Mitigation

10b1 Mitigation Measures

10b1A The EIS should discuss adequacy and enforceability of all mitigation alternatives, including fishery agencies' and tribes' recommendations. (PCF-2-09; 047-22)

Response:

If any mitigation measures are necessary for the impacts caused by various Intertie alternatives, they will be developed giving full consideration to fishery agency and tribal recommendations. Mitigation, if needed, must be enforceable in achieving the desired results.

10b1B The discussion of proposed mitigation measures is inappropriate and insufficient particularly since NEPA requires inclusion of mitigation measures not already included in the proposed action or alternatives. No discussion of mitigation actions is presented to respond to the potential need indicated by both AC and Maximum upgrades [overall decrease in fish survival]. A range of potential mitigation measures should be included. Specific habitat mitigation measures should be identified and the suitability of those measures to offset impacts discussed. (047-29, 53, 56; 019-17; 087-15, 25; 085-07; 072-29; 103-08, 12)

Response:

Mitigation is appropriate when expected impacts are such that a significant adverse result would occur. It is expected that construction of a Third AC or the AC in combination with the DC Terminal Expansion would cause slight, but adverse effects. However, when these effects are compared in the context of the expected increases in fish survival due to upcoming installation of bypass systems, they do not appear significant.

10b1C How would existing fish and wildlife mitigation plans be carried out if the no action alternative is adopted? EIS should demonstrate that BPA has adequately complied with provisions of existing F&W Program. (019-18; 070-09)

Response:

The conduct of existing fish and wildlife mitigation plans and BPA "compliance" with the Fish and Wildlife Program are not pertinent subjects of the EIS. The implementation of fish bypass measures by the Corps of Engineers and Mid-Columbia PUD's is pertient to the EIS and is fully discussed in the Final EIS.

10b1D The Draft EIS does not supply the Administrator with enough information to make an adequate determination in the Record of Decision that all practicable mitigation measures have been considered. (072-24)

Response:

Mitigation measures are not expected to be necessary in the Final EIS for anadromous fish. Mitigation measures are discussed for Hungry Horse reservoir for the potential effects of long-term marketing.

10b1E Reliance on additional hatcheries does not address the fundamental issues of protecting habitat and assuring adequate flows to wild stocks. Proposed mitigation resulting in wild stocks of fish being converted to a hatchery-dependent resources is not acceptable mitigation. The Draft EIS should identify increases in hatchery production proposed and the foreseeable effects on the status of natural production. (072-44; 087-24)

Response:

BPA agrees that hatchery construction is not appropriate mitigation for wild fish stocks that are managed as such. BPA has not and will not propose such mitigation.

10b1F Negative impacts of the IAP on anadromous fishstocks may be greater in relation to wild stocks of fish in upriver areas than on lower Columbia River stocks. (070-11)

Response:

BPA's analysis of IAP options show no effects to upriver wild stocks, particularly if most or all planned fish bypass facilities are installed.

10b1G Mitigation measures should include increased levels of spill and flow protection. Only increased mainstem passage protection measures are capable of adequately mitigating for the adverse spill and flow effects of the Intertie on wild and natural stocks. (072-26)

Response:

BPA agrees that mitigation of adverse passage effects on wild and natural stocks should be alleviated with measures that improve passage survival. Such measures, if needed, however, need not be limited to spills and flows. For example, increased fish transportation or predator control would likely improve fish survivals to a much greater extent than spills and flows and at lesser cost.

BPA has not seen adverse effects of Intertie alternatives on system flows.

10b1H The Draft EIS does not describe availability of mitigation measures to offset turbine related mortalities should the Intertie be expanded prior to installation of mechanical bypass at Ice Harbor, Lower Monumental, and The Dalles dams and prior to improvements in existing bypass systems. (087-16)

Response:

The adverse effects of certain Intertie cases on fish survival are in most situations very minor relative to the anticipated increases in fish survival due to fish bypass facilities. Should an adverse Intertie expansion be initiated prior to certain bypass systems being installed, the adverse effect would be very small and only temporary, until the bypasses are constructed. BPA does not believe an interim period of a few years with such impacts would be significant, if the bypasses are ultimately constructed and the benefits they provide for fish passage achieved.

10b1I BPA too concerned with prospect that actions of an individual developer/project would adversely impact actions or expenditures by Administrator. Impacts attributable to an individual project should be mitigated by its developer. (079-10)

Response:

BPA has included in its draft LTIAP the "protected areas" concept. These provisions should protect fish and wildlife expenditures of the Administrator from adverse hydroelectric

development that might be stimulated by Intertie development and use. See Administrator's Decision Document.

10b1J Explain the viability of mitigation and the net effects to fisheries among the Intertie options (093-02)

Response:

BPA does not see mitigation being necessary for anadromous fish due to Intertie options.

10b1K The Draft EIS enumerates a number of measures as mitigation but there are many problems associated with many of these measures that could seriously reduce their effectiveness. In addition, BPA appears to be double counting measures already in place to mitigate for past damages. This is not appropriate and should be eliminated. (110-04)

Response:

If any mitigation is required for proposed Intertie actions, it would only be implemented following coordination with fishery entities such that its effectiveness in reducing any adverse impact would be assured.

BPA is not attributing ongoing mitigation actions, for past hydrosystem damages to fisheries, as mitigation for Intertie related effects. BPA is taking into account the anticipated improvements in fish survival due to planned fish passage mitigation measures to understand the future context in which Intertie effects would occur. For most stocks, these anticipated improvements would be very large relative to the Intertie effects, making them insignificant.

10b2 Mitigation Alternatives

10b2A BPA does not present alternative ways of mitigating or reducing the harm that its document predicts will occur. (044-09)

Response:

A discussion of mitigation is only important if impacts to anadromous fish stocks is considered significant. BPA does not anticipate its Intertie actions to cause significant adverse effects, provided certain bypass facilities are constructed as planned. Even if potential Intertie effects occur to a greater and significant extent than expected, the Northwest Power Act requires an ongoing and dynamic mitigation program for the hydroelectric system. This program would likely be adjusted to achieve any necessary additional increases in fish passage survival.

10b2B We recommend that proposed juvenile fish bypass performance standards be adopted by the BPA and incorporated into the EIS. (047-23)

Response:

BPA's adoption of fish bypass performance standards is not relevant to an Intertie EIS. Fish bypass performance is a responsibility of the Corps of Engineers and not BPA. Additionally, in conducting its analysis of potential Intertie actions, BPA has included what it believes would be the most likely levels of future bypass performance to ascertain fishery impacts. BPA adopting standards would not necessarily affect what these expected performance levels would be.

10b2C A monitoring system should be operating at each dam in order to determine actual effects on fish. (065-07)

Response:

BPA annually funds extensive smolt monitoring by the Fish Passage Center and anticipates funding considerable research to measure fish passage survival at and between hydroelectric dams. BPA believes, however, that it will be difficult to measure fish survival so precisely so as to discern the minor effects of the Intertie.

10b2D Add "avoidance of the impact where possible" to the mitigation list on p. 4.5-28. (069-36)

Response:

BPA has considered "avoidance of the impact where possible" in its review of Intertie alternatives and projected fishery impacts.

10b2E The NW Power Act adds on additional duty to mitigate impacts on salmon and steelhead. FERC has interpreted the equitable treatment standard to include a duty to mitigate the impacts of the mid-Columbia PUD projects. Consider and adopt the proposed sliding scale accounting procedures for the mid-Columbia segment of the Water Budget. (075-25; 087-22)

Response:

The accounting procedures for the Water Budget are not relevant to the Intertie environmental assessment.

10b2F Evaluate and address the acquisition of Snake River runoff through a cooperative agreement using Idaho Power Company's Brownlee storage project. (087-23)

Response:

BPA entered into an agreement with the Idaho Power Company in 1987 to pay for their participation in the in the Water Budget. BPA is considering such an agreement for 1988 taking into account costs, water conditions, and the fishery benefits that were achieved in 1987.

10b2G Evaluate the 70/50 spill program [as potential mitigation] as the Corps' [spill] plan is likely to change in the future. (087-20)

Response:

BPA has evaluated and considered the 70/50 spill program proposed by fishery entities. In general, BPA finds the program very expensive for the minor benefits it would achieve in fish passage.

10b2H EIS should note programs, such as hatcheries at Sherman Creek and on Spokane Arm, and describe how they will be integrated. (019-16)

Response:

The integration of hatcheries at Sherman Creek and on the Spokane Arm are not affected by Intertie actions.

10c Consultation

10c1 Commenters from fisheries agencies and public interest groups suggested that BPA should verify the results of the fisheries analysis with the Northwest Power Planning Council, fishery agencies, Indian tribes, or some other neutral third party. (PCF-2-08-07; PCF-3-02-06; 031-04; 065-03, 05; 069-06)

Response:

The development of analytical techniques used by BPA to assess the potential effects the Intertie could have on anadromous fishery resources was coordinated with fishery groups. Results of modeling efforts have been shared with these same groups. BPA fisheries staff have invested considerable time explaining analytical methods and results with fishery entities and environmental groups.

10c2 If operation, modification, or mitigation expenditures are to be made pursuant to Section I(3)(e) of policy, direct participation of fish and wildlife agencies and tribes is needed. (069-57)

Response:

The fish and wildlife language in the IAP has been rewritten. The provision this comment refers to has been eliminated.

10d Modeling Analysis

10d1 General

10d1A Several commenters from fisheries agencies and Tribes believed that the SAM and FISHPASS fisheries analyses suffer from a variety of weaknesses. Deficiencies include: use of point estimates; no discussion of uncertainties inherent in modeling analysis; little or no presentation of support data; use of unrealistic assumptions and values; use of absolute mortality estimates. These deficiencies are further compounded since many values will change substantially for Final EIS. (PCF-2-09-07; 069-05; 087-14)

Response:

The SAM and FISHPASS models used the most current and best available data for the IDU Final EIS fisheries analyses. Several sensitivity analyses have been added to the IDU Final EIS to show the output variability associated with sensitive input parameters. The IDU Final EIS FISHPASS analyses also use more conservative assumptions for transportation and planned spill than used in the IDU Draft EIS. The analyses use the current Fisheries Transportation and Oversight Team (FTOT) transportation guidelines in place of full transport assumptions. Planned fish spill at Federal projects has been eliminated in the analyses upon completion of fish bypass systems. Additional support material for the SAM and FISHPASS models is cited in the IDU Final EIS in addition to a discussion on the limitations of the FISHPASS model. Ranges and distributions of survival changes for all fish stocks are also provided in the Final EIS. See response to comment 10d6A.

10d1B SAM may model the PNW hydroelectric system differently from real operations, and thus the Draft EIS analysis may mask impacts to fish. (069-24)

Response:

See 10d1A.

10d1C Results are displayed as averages or means rather than as a range of figures. (047-18)

Response:

See 10d1A.

10d1D Results fail to show the range of error associated with the output of the model. (047-59b)

Response:

See 10d1A.

10d2 Additional Fisheries Impacts Information Needed

10d2A Results were presented for three study years only 1992, 1997, 2002. Impacts in interim years (especially the next few years) might be significant and should be analyzed. (049-01; 060-13)

Response:

For the Final EIS, BPA has examined impacts in years 1988, 1993, 1998, and 2003. BPA believes these years provide sufficient representation of impacts in the intervening 5 year periods.

In the next few years, any impacts would be due to Intertie policy only. Later, in the 1990's effects of Intertie expansions would be realized. The FISHPASS analyses show policy options have insignificant effects on fisheries survival.

10d2B Results should be presented in the same units -- display fish impacts in a range and show actual survival rates as well as percent changes between alternatives. (047-32; 069-22)

Response:

The Final EIS displays absolute survival rates estimated by FISHPASS in addition to relative change in survival between Intertie cases and the No Action case. It should be recognized, however, that the capability of FISHPASS to provide accurate estimates of absolute survival is limited. The comparative survival rate is the more valid statistic to examine.

10d2C No specific information or figures used in the program to project the impact on fisheries were made public in the EIS. (065-01)

Response:

Specific information and values used in the FISHPASS model are presented in Volume 4, Appendix E, Part 3 of the Final EIS and in the Corps of Engineers' model documentation titled, "FISHPASS Model concepts and Applications" March 1986.

10d2D Tables and discussion (4.5-10 to 17) do not provide information necessary to determine if both spring chinook and yearling fall chinook have been included in the analysis. (047-52)

Response:

For the purpose of modeling anadromous fish stocks using FISHPASS, the yearling category includes yearling spring and fall chinook and assumes their survival to be the same.

10d2E SAM needs 200-300 simulations to obtain stable results, not 20. Commenters have reservations about results because of "random pick" for the 20 years when what is needed is careful selection when these few years are used. (INC-03-09)

Response:

Based on comments received, BPA has doubled the number of years used in the FISHPASS model. Analyses of anadromous fish survival have now been conducted using 40 water years. BPA believes 40 randomly picked water years provides sufficient means to analyzed potential effects of the Intertie.

10d3 Long Term Firm Contracts/Hourly Analysis

10d3A Hourly analysis of long-term firm contracts, under each upgrade scenario, should be conducted to assess potential impacts to anadromous fish. It is also unclear if nonfirm allocation options have been included in the long-term firm contracts scenarios. (047-50, 54; 072-35)

Response:

Hourly analyses were not conducted as part of the Intertie fisheries assessment. BPA conducted a test analysis using an hourly SAM model; further use of the model was rejected because (1) hourly results were similar to those of the monthly SAM model; (2) modeling hourly impacts in study years far into the future were not believed to be worthwhile due to the high degree of operational flexibility in hourly hydrosystem operations; and (3) BPA did not believe the hourly SAM model was sufficiently developed to be relied upon for environmental assessment.

The Final EIS will clearly show the nonfirm allocation options assumed with various long-term contract scenarios.

10d3B The marketing opportunity created by the IAP could increase hydro operation and cause harm to fish and wildlife. (103-33)

Response:

The marketing/hydro operations associated with potential access policies have been analyzed and are described in the Final EIS.

10d3C Does Table 4.5-16 display the effect of the DC upgrade assuming access for long-term firm contracts? Include in tables departures from the existing situation caused by capacity upgrades under different access provisions, such as the effect of maximum capacity and long-term firm contracts. (072-33)

Response:

The Final EIS displays the effects to anadromous fish of possible combinations of access policy, Intertie capacity, and marketing. See Volume 1, Section 4.2.3.4 of the Final EIS.

10d4 Assumptions Used

10d4A A commenter questioned the Fish Guidance Efficiencies (FGEs) used in the FISHPASS model, stating that they are overly optimistic. It is recommended that projected FGEs be based on the Corps' latest bypass construction schedule and tested FGEs for steelhead. Where tested FGEs are not available estimates for yearling fish should be used for steelhead. FGEs used in the base case analysis should be presented. Changes should be made to Table C.3. Another commenter objected to knowingly presenting an impact analysis in Table C.3 that is based on faulty data. (047-64, 65; 069-43)

Response:

The FISHPASS analyses will continue to use the most current data available for projected Fish Guidance Efficiencies (FGE). Sensitivity analyses look at a range of FGE values to deal with uncertainty regarding their performance. The FGE values in Table C.3 in the Draft EIS were used for all alternatives including the base case. These values have been updated in the Final EIS.

10d4B The turbine mortality rate for Rock Island (Table C.1) is too low - recommend 11 percent for powerhouse 2 and 15 percent for powerhouse 1. (069-41)

Response:

BPA used a mortality rate of 6 percent for Rock Island Dam in its FISHPASS analysis based on research results provided by the project manager for that dam. To examine the sensitivity of model results to assumptions about turbine mortality, studies were made examining model results using turbine mortality values of 25 percent more and 25 percent less than the expected value. These studies showed that Intertie effects are not dependent on highly accurate turbine mortality values.

10d4C In Appendix C, an 80 percent survival rate should be assigned to transported spring chinook based on available data comparing the adult return rates of transported and nontransported fish. (072-36)

Response:

The effect of transportation survival assumptions on the results of changes in smolt survival is examined in the Final EIS sensitivity analyses. These studies reduce transportation survival to approximately 50 percent for all fish stocks.

10d4D BPA should not assume maximum fish transportation; present guidelines provide for in-river passage of spring chinook under certain flow conditions. The transportation assumption also masks hydrosystem impacts since it assumes fewer fish pass through dams. (047-15, 51)

Response:

The Final EIS assumes current Fisheries Transportation and Oversight Team (FTOT) transportation guidelines in the FISHPASS analyses.

10d4E Analysis uses a number of faulty assumptions and the averaging of impacts over a number of years obscures potentially significant annual effects. Therefore, tables showing impacts on Columbia River anadromous fish are inaccurate. (044-04)

Response:

The analysis for impacts on juvenile anadromous fish did not rely on average changes in survival. The Draft EIS reported separately, for each stock entering the mid-Columbia, Snake and Mainstem Columbia rivers, the median relative change in survival and the frequency of relative decreases in survival exceeding one percent and five percent. This data was presented in tabular form for each alternative, for three separate contract years (1992, 1997, and 2002). Additionally, the maximum change in average stock survival and the maximum single year decrease in survival for any stock was reported for each alternative analyzed. It was also noted that a wide range of additional data was calculated for each stock. This data was too voluminous to put into the Draft EIS, but was available for review. The Final EIS includes an additional contract year (1988) and uses 40 simulations per contract year in place of 20 that were used in the Draft EIS. The Final EIS also incorporates more data for each stock in the tables of changes in fish survival. The Final EIS tables contains for each stock and contract year, relative change in survival, the mean and median relative change in survival, the maximum and minimum relative change in survival, the frequency on relative increases and decreases in survival greater than 1 percent and 5 percent. Uncertainty associated with modeling assumptions is addressed with sensitivity analyses.

10d5 Uncertainty Of Models

10d5A NEPA requires BPA to disclose the limitations of its analytical tools; the EIS does not reflect the considerable uncertainty about many of the assumptions used in FISHPASS, including those derived from the Mainstem Passage Advisory Committee, or show the range of error associated with the model. (072-15, 17; 087-09)

Response:

The Final EIS addresses the uncertainty and sensitivity of the FISHPASS input parameters with a series of sensitivity analyses. A discussion of these results and limitations of the model is included. The sensitivity analyses performed by the Mainstem Passage Advisory Committee (MPAC), of which BPA participated, are not relevant to the use of FISHPASS for looking at relative

changes between different hydro-operations. MPAC's analyses were for the sensitivity of absolute survival parameters. BPA's sensitivity analyses for the Terminal Expansion Supplemental EA for relative changes in smolt survival associated with changes in passage parameter assumptions, showed that relative changes in survival between two alternatives is much less sensitive to input parameter assumptions than is the absolute survival under one particular alternative. For the analysis of intertie alternatives in the Final EIS, the relative change in survival is the value of concern.

10d5B Given the uncertainty of many of the assumptions used in the FISHPASS model, it is not appropriate to present point estimates. FISHPASS uses a number of parameters which at present have limited support in available data. Analysis using absolute mortality estimates should be deleted. (072-15, 16; 087-03)

Response:

See 10d4A.

10d6 Sensitivity Analyses Needed

10d6A Commenters from fisheries agencies and Tribes suggested that the EIS analysis should address the sensitivity of the FISHPASS model to input parameters by including additional sensitivity runs or by describing sensitivity analyses prepared by other entities, such as the Mainstem Passage Advisory Committee, or selected by an interagency committee of fisheries agencies and Indian tribe representatives. Specific parameters suggested for sensitivity analysis include: spill efficiency, turbine mortality, reservoir mortality, transport mortality, fish guidance efficiency, spill distribution, seasonal distribution, spill survival, bypass survival, collection survival, and interactions among these variables. (069-19; 072-18, 19; 087-02, 04, 05, 06, 07)

Response:

The Final EIS provides extensive sensitivity analyses to address the uncertainty of the FISHPASS model results. Sensitivity analyses are provided for: (1) key FISHPASS parameters; (2) bypass system assumptions; (3) SAM assumptions. The sensitivity analyses conducted by the Mainstem Passage Advisory Committee addressed changes in absolute values from FISHPASS and are not applicable to the IDU EIS which uses comparative values from FISHPASS.

10d6B Given the sensitivity of the FISHPASS model to input parameter values, the Final EIS should include a "worst case analysis" and alternate methods of simulating hydrosystem impacts. (072-19; 105-05)

Response:

See 10d4A.

10e Significance Thresholds

10e1 General

10e1A The Draft EIS's thresholds for significance are arbitrary and poorly documented and explained. The EIS should include information on the development of significance levels and the analyses conducted to test sensitivity of important parameters. Projected impacts of the maximum upgrade represent substantial and adverse impacts that should be prevented or mitigated. (PCF-2-09-08; 090-40; 069-32; 047-17; 044-14)

Response:

Due to public comments, BPA has modified its flagging criteria or thresholds for significance. For the Final EIS, the flagging criteria will not be applied to potentially critical stocks. The Final EIS fully discusses sensitivity tests conducted on important model parameters and their relationship to findings of significance.

10e1B The determination of the significance of impacts to particular stocks should not be related to trends in increased escapement. (047-55; 072-23; 103-30)

Response:

The status of a particular fish stock, and specifically its trend in escapement is information pertinent to determining whether Intertie impacts are significant. This information is critical contextually relative to the extent of impact.

10e1C The Draft EIS's conclusion that a delay of one day in fish migration time is insignificant is misleading and inappropriate, since current travel time is longer than what is biologically acceptable. (072-10; 087-21; 103-21; 070-15)

Response:

The IDU Final EIS does not make significance conclusions regarding a one day delay in migration. The significance of changes in flow (travel time) and spill are evaluated with the FISHPASS model using the best available scientific data.

10e1D The determination of significance fails to consider the goal of improved fish protection that fishery agencies and the Council are working toward. (047-59; 081-01)

Response:

In determining significance, BPA has considered the region's goal to improve fish protection. The analysis of significance considered effects of the Intertie on anticipated improvements in mainstem fish passage.

10e1E BPA reports the projected impacts of the DC Terminal Expansion to be insignificant, but the impacts of the other alternatives as possibly requiring mitigation. The significance of relative losses cannot be judged. (069-13)

Response:

The significance of relative changes in survival can and should be assessed relative to stock status, harvest, trends in run size, and anticipated future levels of survival.

10e1F A representative of Northwest utilities suggested that the impacts on fisheries cannot be determined to be significant since the measures of significance are within the "noise level" of the models. The indicators of significance should be raised to levels which are measurable by the models. (085-01, 03, 04, 05, 06)

Response:

BPA believes the criteria used to assess significance are valid relative to the FISHPASS model. The model is the best available tool to determine comparative survival changes. There is uncertainly as to the "noise level" of the model, but sensitivity tests indicate that small changes in system stock survival as estimated by the model may not be important.

10e1G A representative of Northwest utilities agreed with BPA's conclusion that there would be no irretrievable or irreplaceable loss of fisheries. (085-08)

Response:

Comment noted.

10e1H "The Draft EIS evaluates alternative expansion and use scenarios that would maintain the status quo, or increase salmon and steelhead damage. None of these are acceptable under the Pacific Northwest Power Act or pre-existing obligations. (081-02)

Response:

BPA does not believe the status quo on anadromous fish will prevail into the future. Large increases in smolt survival are anticipated.

10e1I "The Draft EIS ignores the current depressed condition of the Region's fish runs and resulting harvest restrictions, and assumes that current conditions and fishway requirements are acceptable." (047-20)

Response:

The significance criteria do not ignore the current depressed condition of many fish runs and do not assume that existing passage conditions are acceptable. The Final EIS displays anticipated increases in stock survivals and how various Intertie alternatives affect these increases.

10e2 Impacts Understated

10e2A The Draft EIS and policy understate the significance of impacts to anadromous fish. (047-03; 087-10)

Response:

The Final EIS displays potential impacts in detail and discuss their significance to individual stocks in detail (see Volume 4, Appendix E, Part 7).

10e2B Certain stocks of fish may be more affected than what the averages indicate. (105-04)

Response:

The average impact is the most expected effect. The fisheries analysis also, however, examined changes in survival in the best and worst water conditions for fish passage and looked at the frequency of survival changes greater than 1 percent and 5 percent.

10e2C Independent analysis done (for the DC TEX) implies statistically significant decreases in survival (51.5 percent of the comparisons show a statistically significant difference between existing and Terminal Expansion capacity). (INC-03-01; 087-08)

Response:

A statistically significant decrease in survival does not necessarily equate to a significantly adverse impact. Any net decrease in future fish survival was determined to be significant only if it occurred to a potentially critical stock. For most stocks, particularly the potentially critical ones, BPA anticipates substantial increases in future survival. Certain Intertie alternatives would decrement this increase to a small degree.

10e2D DC TEX EA conclusion of no significant impact on Hanford Reach fish is wrong because the EA's test results indicate there are such effects. (INC-03-02)

Response:

An examination of the results of the flow test used to determine whether Intertie options could jeopardize the hydrosystem's ability to balance fall and spring flows at Hanford shows no real changes. Additionally, an agreement between BPA, Grant PUD, and fishery agencies is currently being emplaced which will provide a very high degree of protection for Hanford fall chinook.

10e2E A much higher percentage than 50 to 30 percent of migrants pass through turbines at dams without juvenile bypass facilities (p. 3-35). (047-45)

Response:

Agreed. At dams without bypass systems or sluiceways, turbine passage can be as high as 97 percent when spill is not occurring.

10e2F Analysis does not reflect future increase in downstream juvenile migrants. Future losses of juveniles would thus be greater. Adult returns are a more appropriate measure than survival rates of juveniles. (INC-03-06)

Response:

The analysis does not focus on the idea that more juvenile fish will be migrating in the future. The change in juvenile survival rate, no matter how many migrates are in the river, is believed the more critical evaluative measure, particularly in a system where cummulative effects are so important.

10e3 Cumulative Impacts Analysis Needed

10e3A The EIS should consider cumulative impacts on fish over the course of several years/life cycles. Such analysis is required by NEPA and by section 1204(b)(1) of the Council's Fish and Wildlife Program. (065-09; 072-07, 08, 14; PCF-2-09-10; 047-19)

Response:

BPA considered using a life cycle model, but rejected the need for two reasons: (1) no model was available at the time of analysis that had sufficient data to make the analysis meaningful; and (2) any adverse impacts of Intertie options were small compared to anticipated increases in survival due to planned fish passage facilities.

10e3B Examination of cumulative effects should lead BPA to abandon its definition of significance thresholds. (072-09)

Response:

The FISHPASS model was utilized because it allows for analysis of cumulative effects of all hydrosystem operations on fish survival. Significance criteria are then important to judge survival impacts within the context of existing and future population status, and management goals.

10e4 Critical Stocks

10e4A The number of wild fish migrants continues to expand as escapement levels increase to meet interim and long-term management goals. How will these fluctuations affect modeling results? (069-40)

Response:

The modeling conducted for Intertie analysis examines survival rate, not total numbers of smolts surviving. As naturally produced smolts continue to increase, they will be exposed to a survival rate through the hydrosystem as determined in the modeling process. With survival rates increasing in the future more smolts will survive through the system compounding the growth of natural populations.

10e4B Provide an additional description by species and location, in Section 4.5, of how an occurrence of a "significant impacts" would reduce the number of returning adults. (060-12)

Response:

The Final EIS is very descriptive of effects to individual fish stocks (see Volume 4, Appendix E, Part 7). Adult returns were not examined, however, since smolt survival is the primary concern affected by Intertie alternatives.

10e4C Incorrect to imply that chinook stocks potentially affected by Intertie development and use do not restrict harvest opportunities, P. 4.5-27. Discuss restrictions negotiated in US-Canada Treaty on Alaskan and Canadian fisheries. (069-33)

Response:

BPA does not believe the potential effects of the Intertie relative to anticipated survival increases will be significant enough to require an impact discussion on U.S./Canada Treaty requirements.

10e4D Commenter feels there is inadequate information available to place reliable significance levels on increases or decreases in mortality of upriver wild chinook runs. (070-12)

Response:

BPA has conducted extensive sensitivity tests to ensure that modeling results are better understood given that input information and model construction are not precise. These tests support the primary model results that Intertie options would have insignificant effects on survival of upriver chinook stocks.

10e4E The draft IDU EIS fails to present a meaningful picture of the relationship of upriver chinook stocks to historic and current fisheries. Acknowledge the once tremendously significant commercial harvests of spring and summer chinook and that no commercial fisheries intercept these fish due to their depleted conditions. (087-11)

Response:

The Final EIS contains an analysis of the status of individual stocks. This stock status will indicate, where appropriate, the condition of certain fisheries.

10e4F The draft indicates that spring chinook appears to be making a strong recovery (p. 45-27); this ignores the naturally spawning component of the spring chinook run and Pacific Salmon Treaty obligations directing the rebuilding of naturally spawning chinook. BPA should recognize spring chinook as a critical stock. (087-12)

Response:

In the Final EIS, BPA has recognized many spring and summer chinook stocks as potentially critical and has evaluated potential Intertie impacts based on their depressed stock status.

10e4G Sockeye runs are characterized by erratic swings in year-to-year escapements and it is highly misleading to present only recent escapement data for sockeye as indicating the health of that stock. Request that these fish also be treated as a critical stock. (087-13)

Response:

Due to the trend in sockeye run size in recent years and harvest actions directed at the species, BPA has not considered Columbia River sockeye stocks as critical.

10f New Hydroelectric Development Impacts

10f1 Commenters from fisheries agencies stated that the EIS should examine the potential fisheries impacts and cumulative impacts (including water diversion, construction, and erosion impacts), due to the development of small hydroelectric projects in response to incentives provided by the IAP or Intertie upgrades. Should

include a discussion of the impact of this small hydro development on fish restoration and fishery management programs/plans. This analysis should be presented in Table 2.1 of Chapter 2 and in the fisheries analysis of Chapter 4.5. (PCF-2-09; 044-06; 047-14, 35, 36, 39, 44; 069-03; 078-08)

Response:

BPA is proposing use of the "protected areas" concept in the LTIAP to eliminate incentives to hydro development damaging to fish and wildlife in the Columbia River Basin.

10f2 Information on new hydro development impacts on fisheries should include information on size, location, and operating characteristics of plants that could present problems to fishery resources. (097-13)

Response:

The Final EIS cannot contain an exhaustive listing and analysis of all potential hydro projects. The Proposed LTIAP contains "protected areas" to ensure projects damaging to fish and wildlife are not constructed in the Columbia Basin for Intertie use.

10g Power Operations Impacts

10g1 Impacts Beyond Columbia Basin

10g1A Address any possible adverse effects that increases power generation would have in the winter months on anadromous fish resources in CA. (103-06)

Response:

For the most part, significant changes in operation at California power plants involve decreased, rather than increased, generation. When increases do occur, the effects are not be judged to be significant.

10g1B The EIS does not evaluate impacts on fishery resources outside mainstem Columbia and Snake River Federal projects. Analysis should include examination of potential impacts on fisheries on tributary streams, at non-Federal projects, and outside the Columbia Basin. (047-16, 59c; 072-34; 069-02, 12, 14, 28)

Response:

See 05b2.

10g1C One comment stated that all projects considered in EIS are Federal. Relationships between private owners and BPA are unclear and therefore limit the EIS decisionmaking capabilities. (070-16)

Response:

It is not true that all projects considered are Federal only. In fact, the modified version of FISHPASS used in BPA's analysis included mid-Columbia PUD projects. Privately owned projects on the Snake river and other projects which affect resident fishes are considered qualitatively in the Draft EIS on pages 4.5-30 to 4.5-41. Currently, no model exists that allows quantitative analysis of impacts to resident fish. However, BPA has funded two long-term projects on Libby and Hungry Horse reservoirs to address the effects of reservoir fluctuations on resident fishes which will be operational in Summer 1988.

10g2 FD Sales Effects

10g2A We do not see any indication that BPA has assessed effects of FD on fish and wildlife resources. We recommend only resources certified to have no impact by responsible fish and wildlife agencies and tribes be granted access under FD. (069-47, 53)

Response:

BPA has included the "protected areas" concept in its Proposed LTIAP. If such areas are established by the Northwest Power Planning Council, then a mechanism would be in place to determine which new power resources would be granted Intertie access. For existing resources, such considerations are already included in the Council's Program.

10g3 Spill

10g3A Comments from fish and wildlife agencies and Indian tribes stated their concern that Intertie decisions could reduce the level of spill (other than planned spill). This is particularly a concern at hydroelectric facilities where bypass facilities have not been installed (especially at The Dalles, Ice Harbor, and Lower Monumental, where bypass installation has been postponed until the mid-1990s) and spill is the only means of downstream migrant protection. (024-01; 033-01, 02; 072-04)

Response:

BPA's fisheries impact analyses of intertie decisions takes into account the loss of spill other than planned spill. The SAM model determines spill beyond planned spill resulting from flow in excess of turbine capacity and spill due to a lack of market or Intertie capacity.

10g3B Increasing access to the Southwest market will increase the cost of spill, which may lead the Council to reduce the survival standard for downstream migration. The 90 percent standard now used by the Council is already considered inadequate by many. (024-02)

Response:

It is true that the Power Planning Council must balance the needs of the power resource and the fish and wildlife resources of the region. There is no indication, however, that the Council would reduce the current survival standards for downstream fish migration. On the contrary, the survival standards have increased each of the past three years.

10g3C Spills provided by the Mid-Columbia PUDs under a Stipulated Agreement have frequently been supplemented by surplus Federal spill. Intertie expansions may result in less such spill being available for fish protection. (024-03)

Response:

See 10g3A.

10g3D Adequate treatment of fisheries impacts requires an impact analysis of the COE's spill plan. (069-31)

Response:

The Corps of Engineers' spill plan is a system constraint which affects the amount of power that can be produced. The intertie alternatives would not alter these constraints. An impact analysis on constraints would be meaningless. Increased levels of planned spill would only reduce fisheries impacts associated with intertie decisions.

10g3E Upgrading the Intertie may unreasonably constrain spilling water for anadromous fish originating in the upper reaches of the Snake River Basin. (070-01)

Response:

See 10g3A.

10g3F Impact Analysis [p. 4.5-16] overstates both the existing losses of power to spill and fish survival at three dams; analysis should assume either: (1) bypass systems are installed at Lower Monumental, Ice Harbor, and The Dalles and no 1986 spill plan; or (2) the 1986 spill plan with no additional bypass systems. (060-06)

Response:

The Final EIS assumes no planned spill upon installation of bypass systems.

10g3G Potential for spill is greater resulting in more frequent occurrences of higher levels of nitrogen supersaturation. (060-11)

Response:

The potential for spill during the spring and summer downstream migration of anadromous fish is less under the Intertie upgrade alternatives. Thus there would be fewer occurrences of high levels of gas supersaturation.

10g3H P. 4.5-15; will planned spill remain unaffected if Council elects to adopt higher passage survival standard? Perhaps 92 and 94 percent level should also be analyzed. (069-30)

Response:

An analysis of intertie decisions with higher levels of planned spill would only show less fisheries impacts associated with the proposed actions. This is because increased planned spill would prevent the elimination of a portion of the overgeneration spill that would be reduced under the intertie decisions. The Council rejected the adoption of the 92 and 94 percent spill levels in the 1985-86 "fast track" amendment process for the Fish and Wildlife Program and subsequently rejected the adoption of the 70/50 percent guidance efficiency standards in the 1986-87 amendment process. The Final EIS takes a conservative analysis of fish impacts by not including hypothetical planned spill levels above the 1987 Corps of Engineers' spill plan.

10g3I BPA should consider a program of planned spills at all Federal projects as necessary to attain 70 percent guidance efficiency of spring migrants and 50 percent guidance efficiency of summer migrants. (087-17)

Response:

See 10g3H.

10g4 Reduced Reservoir Levels Or Flow Rates

10g4A Alternatives which would reduce reservoir levels could be counterproductive to those projects that are attempting to mitigate for historical anadromous fish losses. (019-15)

Response:

The potential effects of reservoir drafting on anadromous fish species are fully presented in the Final EIS.

10g4B Greater reservoir drawdowns at Libby Project would reduce the probability of complying with measure 804(a)(7) in the Council's Fish and Wildlife Program. (060-09)

Response:

SAM results do not indicate any significant change in drawdown at Libby reservoir.

10g4C P. 4.5-28; Draft EIS fails to mention or analyze incubation requirements after spawning but prior to emergence. Are average flows in April an appropriate statistic for analysis? (069-37)

Response:

Incubation requirements are such that changes in hydro system operations would not cause any problems.

10g4D Page 4.5-28, 29. The analysis should divide April into two periods to assess potential impacts on emerging fall chinook in the Hanford reach. (047-57)

Response:

The Final EIS divides April and uses the first half of April in the test for potential impacts.

10g4E Draft EIS indicates no significant change in ability to meet Water Budget in Lower Granite Dam; however, the Water Budget has never been met there and no indication that it will be met in future. (070-13)

Response:

The Water Budget in the Snake River has been met in the past although flows have not been consistent nor sustainable. A 1987 storage agreement between BPA and Idaho Power helps to alleviate some of the problems associated with meeting the Water Budget. Unfortunately, that still does not solve the problem entirely. The fact is that Brownlee and Dworshak reservoirs can store only about 10 percent of the Lower Granite total volume runoff, and at full load can supply only about 45 percent of the required fisheries flow of 85 kcfs at Lower Granite, the remainder of which comes from uncontrolled stretches of the Clearwater and Salmon Rivers. Water set aside for the Water Budget is a firm constraint and BPA will continue to provide as much water as possible through the reservoir system to meet that constraint regardless of the alternative chosen for IDU. Whatever occurs under natural conditions is out of BPA's control. Whether the Water Budget is met or not, is not affected by Intertie options.

10g4F BPA should model existing proposals for a sliding scale water budget scheme in the Mid-Columbia and the IDFG's proposed minimum/optimum flow water budget scheme for the Snake River. Also examine the proposed sliding scale for spills between the 90 percent survival standard and a 70/50 yearling/subyearling fish passage efficiency standard. (072-12)

Response:

Various possible Water Budget and spill schemes are too speculative at this time for consideration in the IDU EIS.

10g4G Pp. 4.5-15-4.5-24; system flexibility to accommodate future flow requests by the tribes and fish and wildlife agencies to protect fish, could be reduced with the expanded power sales. Analysis does not reflect this. (103-29)

Response:

Analysis shows flow changes may be associated with Intertie alternatives that have either positive or adverse effects, both however would be insignificant.

10g4H Pp. 4.5-10-4.5-14; evaluate range of flow needs with a corresponding evaluation of impacts. (103-28)

Response:

The Final EIS contains data on potential flow changes due to various Intertie alternatives.

10g4I The analysis does not address the amount by which the flow did not meet the cutoff criteria. Each increment of reduced flow dessicates more redds so that missing the criteria by one or two thousand cubic feet per second (cfs) has much less impact than missing the criteria by five or ten cfs. (047-58)

Response:

The analysis of impacts to redds followed a 5 kcfs increment, similar to that used by all concerned parties involved with spawning issues in the Hanford Reach.

10g4J Table 4.5-6; we suggest BPA first option may at a minimum have a serious impact on migrants entering the Wells pool. Reduced flow will be realized at 4 Mid-Columbia dams and increase likelihood of exceeding the 30-day fish travel limit. (069-29)

Response:

The current options for the formula allocation policy in the Final EIS show no substantial effect on flows. Additionally, juvenile fish migrating from the Mid-Columbia River are anticipated to have greatly improved survival rates in the future due to planned fish bypass facilities.

10g4K The community around Lake Roosevelt particularly concerned about lake level. Stability, due to its effect on fish reproduction, shoreline vegetation for the food chain process, and shoreline erosion. (009-03)

Response:

Analyses show no significant change in drawdown of Lake Roosevelt. See Volume 1, Section 4.2.1 of the Final EIS.

10g4L The DC TEX could increase the problem of low pool elevations in May at Lake Pend Oreille. Fishermen may not be able to get their boats into the water because the ramps do not extend far enough down. Request that BPA consider ramp extension as a mitigation measure. (INC-03-10)

Response:

Potential impacts to recreation resulting from Intertie decisions, including elevations at Lake Pend Oreille are discussed in Volume 1, Section 4.2.2.1.

10g4M Using only May for the Water Budget may bias the analysis. (INC-03-03)

Response:

The analysis of the Water Budget in the Final EIS considered April 16-30 and May for the Mid-Columbia and May for the Lower Snake. BPA believes that this is the most appropriate way to model the Water Budget and that it is consistent with the actual implementation in past years.

10g4N The mean change in period average flowrate is not a sensitive enough statistic to detect changes damaging to fish. (INC-03-04)

Response:

BPA does not believe evaluating flow effects in increments less than monthly are worthwhile for Intertie actions. Data do not exist on the extent to which fish passage is effected by short-term flows. Also, flexibility in system operations and variance in natural runoff in future years are so great that modeling less than monthly flows would not be meaningful.

10g4O Why did BPA use 10 kcfs instead of 5 in assessing potential impacts due to flow changes at Priest Rapids Dam? (INC-03-05)

Response:

The 10 kcfs flow increment was the flow increment at which a 1-day increase or decrease in travel time could occur. Changes in travel time through the hydrosystem of less than 1 day were not believed to be meaningful given the knowledge of travel time requirements.

10g5 Peaking

10g5A P. 3-35; many stranded juvenile salmonids also die as shallow pools or gravel bars become dewatered. Draft EIS acknowledges potential peaking related losses but this problem needs to be further explored and, if needed, mitigation alternatives identified. (069-23)

Response:

See Response to 10g5B

10g5B Potential impacts of daily hydroelectric peaking operations stranding juvenile salmonids was not fully discussed and potential effects of peaking on adult salmonid passage was ignored. (069-04)

Response:

The maximum change in daily peaking operations is addressed in Volume 1, Section 4.2.1 of the Final EIS. This analysis shows little change relative to current peaking operations. Additionally, BPA is not aware of any data which would allow quantification of impacts from peaking operations, other than at Vernita Bar, in the mainstem Columbia and Snake Rivers. Consequently, consideration of such impacts was not included in the EIS.

For adult fish, peaking limitations are established by the project operators. If problems occur, these limitations can be altered by the operator for any Intertie alternative BPA might adopt. BPA's power operations must be conducted within nonpower constraints. BPA is not aware that any Intertie operations would alter adult fish passage at the dams.

10h Indian Treaty Fishing Rights

10h1 The EIS should examine potential impacts on the opportunities for the Indian tribes to exercise their treaty fishing rights. (060-14; 070-02; 103-26)

Response:

BPA has not examined Indian Treaty fishing rights since fish survivals and therefore fish runs are expected to increase dramatically in future years.

10i Transportation

10i1 The assumption of maximum transportation is unrealistic and violates FTOT guidelines. Analysis should include FTOT transportation guidelines and/or no transportation. (072-20, 21, 22)

Response:

The comment questions the assumption of maximum transportation being realistic. Although BPA believes this to be a valid assumption for the future, the Fish Transportation Oversight Team (FTOT) guidelines would provide a more conservative environmental analysis. BPA therefore uses the FTOT guidelines in the IDU Final EIS analyses.

10i2 Transportation of chinook smolts may not be warranted and should not be assumed in the analysis. (070-10; 087-19)

Response:

See response to 10i1.

10i3 The assumption of maximum transport at Lower Granite and Little Goose dams has such a major impact on the outcome of the analysis that it merits detailed treatment. The assumption of maximum transport is unrealistic. (072-20)

Response:

See response to 10i1.

10j Resident Fish

10j1 Commenters concerned about impact to resident fish due to expanded Intertie. Quantitative information regarding specific impact on resident fish should be presented in the EIS. Specific effects on each species of resident fish should be addressed. (103-32; 105-06)

Response:

BPA has used SAM to quantify potential changes in reservoir elevations due to Intertie alternatives. Presently, the ability to equate changes in elevations to fish production is not available. BPA has been funding studies at Libby and Hungry Horse reservoirs to achieve this capability. When these studies are completed, BPA will analyze drawdown effects.

10k Other

10k1 Urge BPA to reassess its anadromous fish analysis. (044-05)

Response:

BPA has modified its anadromous fish analysis to better clarify impacts to potentially critical stocks.

10k2 Of primary environmental significance is the need for conservation for anadromous fish, and for protection of the extensive investment which BPA has made in programs and features which seek to preserve, conserve, and enhance such resources. (045-06)

Response:

BPA has fully considered the significance of Intertie options on conservation of anadromous fish and protection of extensive investments in rehabilitating fish runs.

10k3 2-17. We would not recommend adoption of Decision Package No. 5 because of its large negative impact on Pacific Northwest anadromous fish nor could we recommend adoption of any Decision Package which results in negative effects to anadromous fish. (047-43)

Response:

Comment noted.

10k4 Draft EIS does not adequately address the Fish and Wildlife Coordination Act. (070-05)

Response:

Comment noted.

10k5 BPA should identify the likely completion dates of bypass systems at Mid-Columbia PUD projects in relation to the probability of Intertie upgrade. This will alert FERC which can direct implementation of those measures. (087-18)

Response:

The Final EIS contains the dates BPA assumed Mid-Columbia bypasses would be completed.

10k6 P. 4.5-48; mention juvenile losses associated with intake screening structures, adult losses caused by delay or injury at the power house discharge, and nitrogen supersaturation. (069-38)

Response:

BPA has used a mortality of 2 percent for loss of fish due to intake screening and bypass systems. Mortality rates associated with adult passage at powerhouses and associated with nitrogen supersaturation are not known. Both of these rates, however, would be reduced due to increases in Intertie capacity since spill would be reduced.

10k7 No alternative evaluates the impact on Idaho wild salmon and steelhead runs and dependent economies. (081-03)

Response:

The Final EIS discusses effects specific to natural stocks of Idaho salmon and steelhead. Idaho's fishery dependent economy is not considered since effects of the Intertie would not significantly effect future improvements in run size.

10k8 Does the 1.5 percent "mean" decrease in survival populations transfer into a 1.5 percent decease in the economies of the PNW that are tied to the importance of fishing industries? Will there be an accumulative effect? (049-02)

Response:

The Intertie alternatives would not decrease current fish populations in the Columbia River Basin. Some alternatives would reduce planned increases in these stocks.

10k9 Any changes in reported data on Mid-Columbia hourly fish passage distributions (Table C.2) should be justified biologically and presented. (069-42)

Response:

The FISHPASS model was limited to analyzing three different hourly fish passage distributions and, therefore, representative distributions had to be used for some of the Mid-Columbia fish stocks that were slightly different from available data. The values used in the analyses are given in Volume 4, Appendix E, Part 3 of the Final EIS. Sensitivity analyses on passage distributions have shown that the FISHPASS results are not dependent on highly precise fish distribution data (MPAC, 1986).

B11 VEGETATION AND WILDLIFE EFFECTS

11a The EIS contains no information regarding the potential environmental effects on Oregon's commercial forest lands that may result from expanding Intertie system. (108-02)

Response:

The potential environmental impacts (including those to Oregon's commercial forest lands) of the physical facilities of the Intertie expansion projects discussed in this EIS are analyzed in separate environmental documents. The COTP EIS/EIR, prepared by the Western Area Power Administration and the Transmission Agency of Northern California, with BPA as a cooperating agency, examines the potential environmental impacts associated with completing the COTP in California and Oregon and the related system upgrades in Oregon and Washington. The DC Terminal Expansion Environmental Assessment and Supplemental Environmental Assessment examine the potential physical impacts of upgrading the DC converter terminals. BPA and the other agencies involved in the decisions to upgrade the Intertie through either project will rely on information contained in this EIS as well as the COTP EIS/EIR and the DC Terminal Expansion EA in assessing the environmental impacts of the Intertie upgrade proposals.

11b There is no attention given to the consumptive loss of habitat resulting from development of solid waste disposal sites required for coal burning power plants. (075-82a)

Response:

Additional discussion of the land requirements of solid waste disposal has been added to Volume 1, Section 4.3.1, in Table 4.3.15.

11c The EIS should address any consultation conducted under the Endangered Species Act. (103-09)

Response:

Information for the biological assessment is being gathered and efforts are being coordinated with the USFWS. At this time, only one threatened and endangered species, the bald eagle, has been identified as potentially affected. Please see Volume 1, Section 4.3.4 of the Final EIS and Volume 4, Appendix J for the list of threatened and endangered species and draft of Biological Assessment.

11d P. 4.6-1; model water level changes in the upper reaches of some of the mainstem reservoirs in the Columbia River to assess effects on islands and other important wildlife habitats. Analyze by month or season for waterfowl nesting, mammal denning, and other wildlife activities. (103-22)

Response:

Run-of-river mainstem Columbia River projects are fluctuated within their normal operating limits. Any water level changes experienced would be within the range of elevations presently in use and within the additional restrictions set by Corps of Engineers for fish and wildlife enhancement. While daily fluctuations may increase slightly this should not affect wildlife activities significantly. See also response to 14d4.

11e The EIS fails to discuss bird collisions with transmission lines. (075-82b)

Response:

Impacts resulting from the physical construction and existence of transmission lines are not addressed in the EIS. However, the topic of bird collisions with transmission lines is addressed in the California/Oregon Transmission Project Environmental Impact Statement, which is incorporated by reference into the Intertie Development and Use Environmental Impact Statement. Bird collisions related to the DC Upgrade are not a significant impact (Terminal Expansion Environmental Assessment, February 1985, page 13).

B12 RECREATION EFFECTS

12a Upper Columbia

12a1 Concerned about Lake Koocanusa and its tributaries. Lake Koocanusa should continue to reach full pool as early as possible in the summer, and drawdown delayed as late in the year as possible, as the weather permits a great deal of recreation through mid-October. (010-01)

Response:

The Corps of Engineers will continue to set its guidelines for the operation of Libby Dam independent of BPA's Intertie decisions. The amount and timing of drawdown of Lake Koocanusa will follow established planning criteria under all alternatives. Potential impacts to recreation at Lake Koocanusa within those guidelines are discussed in Volume 1, Section 4.2.2 of the IDU Final EIS.

12a2 The IAP would result in lowering Lake Roosevelt beyond the level needed for flood control and leaving it lowered longer than necessary, negatively impacting fishing, recreation, and economic development plans for this region. (039-01)

Response:

Lake Roosevelt is frequently operated lower than needed for flood control. This is a prudent operating strategy and prevents the unnecessary loss of large amounts of energy due to spill resulting from drafting for flood control. However, the plant is normally operated above refill curves and this is not expected to change. The IDU Final EIS examines potential impacts to recreation and fisheries resulting from Intertie decisions. These issues are discussed in Volume 1, Sections 4.2.2 and 4.2.3. Reservoir elevations and the resulting availability of recreation facilities were compared among alternatives.

12a3 The water level tables released for short term use are not being adhered to, leaving considerable doubt as to how believable the 20-year projections might be. (039-02)

Response:

The studies used to determine possible environmental effects of Intertie decisions represent the best available estimates of future operations of Federal storage reservoirs, while observing current operating criteria set by project owners. The data generated are useful for comparing alternatives. It is recognized however, that actual system operations may differ from those predicted, depending on actual circumstances.

12a4 The EIS does not provide information on impacts to the upper Columbia area, nor was enough study done to determine effects on Lake Roosevelt. (041-01, 02)

Response:

The IDU Final EIS examines potential impacts on Lake Roosevelt elevation in Volume 1, Section 4.2.1. Additional information on recreation and fisheries impacts is provided in Sections 4.2.2 and 4.2.3. More detailed reservoir level data are provided in Appendices C and D.

12b Need For Quantification

12b1 The draft EIS fails to identify where (site specific), when (frequency), how, and to what extent impacts on recreation will occur. Include a clear presentation of the existing conditions and future conditions due to the proposal on a site-specific basis, in terms of on-the-ground impacts to natural resources and recreational resources. Downstream impacts on river recreation should be included.

The EIS should identify the number of recreationists affected, and present mitigation measures. Mitigation costs should be anticipated on a worst-case basis. (019-01, 02; 075-84)

Response:

The IDU Final EIS presents visitor usage information by reservoir in Volume 1, Section 3.2.8. Because data on the relationship between reservoir elevation and visitor usage by site were not available for all reservoirs studied, the IDU Final EIS contains an analysis of potential recreational impacts of each alternative by using a "recreation index" (Section 4.2.2 and Appendix C). This method utilizes site-specific boat ramp elevations or visitor usage data combined with predicted end-of-month reservoir elevations. These indices were used to evaluate the impact of reservoir elevation on recreation. A general discussion of downstream recreation is included in Section 4.2.2. Our analysis indicates that recreation will not be significantly affected by our proposal, therefore, mitigation is not required.

12c Other

12c1 Greater peaking at Libby during the day would adversely affect the sport fishery. (060-10)

Response:

It is not expected that there will be significant increased peaking at Libby as a result of Intertie decisions. It is assumed that at Libby the maximum amount of peaking allowed by the Corps of Engineers will be used under all alternatives.

12c2 Recreational and scenic values, water quality, and other environmental values should be protected from export energy development. (078-06)

Response:

Comment noted. Resource development to serve BPA loads must meet criteria developed by the Northwest Power Planning Council in accordance with the Pacific Northwest Power Act. That Act includes provisions designed to assure consideration of environmental values.

B13 IRRIGATION

13a Columbia Basin Project

13a1 Sections 3.2.9.2 and 4.7.4 do not address potential impacts on plans for the second phase of the Columbia Basin Project. The EIS should acknowledge any immediate or potential effects on long-term water resource commitments. The water's future irrigation use for the Columbia River Basin Project must be explicitly treated as a firm constraint on allocation of Columbia River water for other uses including power production for the Intertie system, and the impact of any alternative which might conflict with that use should be clearly presented. (019-22, 23; 041-03)

Response:

Volume 1, Section 3.2.8.2 in the IDU Final EIS discusses plans for Columbia Basin development. As explained in Section 4.2.2.2, the analysis included irrigation depletions, which were fixed over time, being somewhat high in the near-term and low in the long-term. This does not affect incremental results of the alternatives. An economic analysis of Columbia Basin development indicates a reduction in benefits of the DC Upgrade of about $3.6 million and a reduction of benefits of Maximum Capacity of about $17 million (present worth in 1987 dollars).

13a2 On September 24, 1986, flow at Grand Coulee Dam was 49,700 cfs. If the Phase II Irrigation Project were presently pumping from Lake Roosevelt Reservoir, 11,500 cfs would equal in excess of 23 percent of the total flow causing a significant impact to the stability of Lake Roosevelt/lake level. The EIS should present information concerning the 11,500 cfs planned for diversion under Phase II. (009-01, 02)

Response:

The coordinated planning process considers the need for water withdrawals and electricity for irrigation. Adjustments are made throughout the hydro system to accommodate the necessary withdrawal. For the Columbia Basin Project, water is pumped from Lake Roosevelt into Banks Lake then diverted for irrigation. Thus, the incremental withdrawal for future Columbia Basin development, would not necessarily concurrently affect the Lake Roosevelt lake level.

The maximum pumping rate from Grand Coulee into Banks Lake is approximately 20,000 cfs. This will not change as a result of irrigation expansion. The additional diversion expected from irrigation expansion is approximately 4,200 cfs in September.

The alternatives for future Columbia Basin development are being considered by the Bureau of Reclamation. The environmental effects of these alternatives will be examined in the Bureau's Columbia Basin Project EIS.

B13b Other

13b1 Although Draft EIS Section 4.7.1 states that "Intertie decisions should not affect irrigation," no substantiation is provided nor are any commitments made to that effect, leaving the possibility that the Intertie system could negatively affect future irrigation; moreover, the EIS does not address the consequences of such effects. (019-24)

Response:

The criterion used to evaluate potential adverse effects on irrigation was a minimum elevation of 1240 ft. at Grand Coulee at the end of May. This elevation corresponds to that required by the Bureau of Reclamation for irrigation purposes. Studies for both the Draft EIS and Final EIS indicate no difference among alternatives in meeting this constraint. See also response to comment 06a8.

B14 CULTURAL EFFECTS

14a Level Of Analysis

14a1 It is premature to conclude there would be no impacts on cultural resources because BPA did not analyze actual impacts on cultural resources. (019-03)

Response:

Although Intertie decisions would not change the range in which reservoirs operate, certain alternatives, particularly firm marketing alternatives, may change the potential for wave erosion and accessibility of cultural resource sites (Volume 1, Section 4.2.2.3). Because BPA did not come to the conclusion that there would be no effect on cultural resources as a result of Intertie decisions, a process for mitigation of potential impacts is being developed. See Section 4.6 of the Final EIS for a complete discussion of this process.

14a2 The IDU Draft EIS is not clear concerning the anticipated effect of fluctuating reservoir levels and wave erosion on significant cultural resource properties. (075-83)

Response:

As indicated in the Draft and Final EIS, fluctuation of reservoir levels can result in repeated wetting and drying of organic artifacts both on and below ground. It was also pointed out that most organic artifacts within the zone of pool fluctuation have already undergone substantial deterioration and that their research potential would probably be limited. The effects of erosion on the exposure and displacement of artifacts was also discussed. These effects will occur within the zone of reservoir fluctuation regardless of the Intertie decisions. Furthermore, the Intertie decisions are not expected to extend the zone of reservoir fluctuation. Hence, analytic concern was directed toward the likelihood of an increase or decrease in the number of sites potentially affected by both reservoir fluctuation and erosion under the Intertie decisions. Expanded discussions of the method by which the indices that were used to measure differences in the number of sites subjected to these effects under various Intertie decision scenarios are provided in more detail in the Final EIS, Volume 1, Section 4.2.2.3 and Volume 4, Appendix C, Part 6.

14a3 The available data (Draft EIS page 3-23), of cultural resources surveys at Lake Roosevelt reflects conditions of up to 20 years ago and is largely incomplete because historical sites were not considered equally with prehistoric sites. Additionally, reservoir dynamics are such that site conditions have changed markedly in many cases. (019-06)

Response:

See comment to response 14a1.

14b Need For Field Surveys

14b1 Reservoir impacts to cultural resources are not necessarily as simple and linear as implied by the BPA analysis. Impacts must be assessed on a site-by-site basis. Completion of surveys is needed in order to locate, identify, and evaluate cultural resources in the affected reservoirs. (019-04; 075-85, 92)

Response:

A Progammatic Agreement for historic preservation will provide for full identification of historic properties potentially affected by BPA power marketing activities, evaluation of those properties, and appropriate mitigation programs. See Volume 1, Section 4.6 of the IDU Final EIS.

14b2 The archeological surveys of Grand Coulee and Hungry Horse must include the resurvey of previously investigated areas because of improvements in surveying methods and changes in site conditions since the original surveys. (019-10a)

Response:

See the response to Comment 14b1.

14c Mitigation

14c1 Public Laws 89-665 and 93-291 commit BPA to fund surveys and mitigation, in cooperation with BOR or Corps, to assure compliance with agency policies and practices. BPA should identify the elements of a proposed interagency Memorandum of Agreement with the Corps that would provide funding support to project owners to accomplish appropriate mitigation in place of the interagency cultural resources management plan proposed on page 4.7-13. (019-11, 14; 060-18)

Response:

See the response to comment 14b1.

14c2 Mitigation measures proposed in the EIS are too generalized. (019-08)

Response:

As provided in the Programmatic Memorandum of Agreement, mitigation measures for preservation of important historic properties will be specified in mitigation Action Plans, to be prepared following reconnaissance and evaluation of potentially affected cultural resources.

14c3A A benefit/cost analysis of site protection measures versus data recovery should be completed before adoption of either option. (019-10c)

Response:

BPA acknowledges the appropriateness of such a cost/benefit analysis. If the Bureau of Reclamation or the Corps of Engineers consider such analysis appropriate after resource survey and evaluation, it should be included in mitigation Action Plans to be prepared in accordance with the Programmatic Memorandum of Agreement discussed above (see Volume 1, Section 4.6 of the Final EIS).

14c3B Interpretation at appropriate agency visitor centers or regional museums should be included as a mitigation measure. (019-12)

Response:

See the response to 14c2.

14c3C Changes in reservoir operation and restrictions to protect cultural resources should be mitigation measures, since, for example, rapid drawdown through elevations containing sites can reduce wave and current erosion. (019-13)

Response:

The Corps of Engineers and Bureau of Reclamation set the project operating limits for their reservoirs. The Corps of Engineers and Bureau of Reclamation are involved in the development of the Programmatic Memorandum of Agreement. See the response to 14c2.

14c3D How will individual project owners be compensated for required mitigation efforts for cultural resources stemming from BPA policy decisions? (060-16)

Response:

The Programmatic Agreement discussed in Volume 1, Section 4.6 of the IDU Final EIS will provide for this compensation.

14c3E All operational impacts since the passage of the National Historic Preservation Act, assignable to power production should be mitigated under the IDU proposal, since it is impossible to differentiate the impacts of IDU from earlier reservoir operations impacts. (019-09)

Response:

The Programmatic Agreement discussed in Volume 1, Section 4.6 of the IDU Final EIS will provide for mitigation of potential impacts on historic properties at the five Federal storage reservoirs, commensurate with the percent of costs normally returnable from commercial power revenues for each reservoir.

14c4 Discussion of mitigation measures in section 4.7.5.4 is inappropriate since it assumes that mitigation, if required, will occur in the context of individual agency cultural resources programs. (060-17)

Response:

The Programmatic Agreement discussed in Volume 1, Section 4.6 of the IDU Final EIS will provide procedures for preservation of historic properties. The project operating agencies (i.e., the Corps of Engineers and the Bureau of Reclamation) are parties to the Agreement.

14d Other

14d1 No consideration is given for potential impacts to the rights and resources of the affected Indian Tribes. (103-25)

Response:

The Programmatic Agreement for preservation of historic properties, being developed in consultation with affected Indian tribes, will include provisions for relocation of Native American burial sites discovered during resource reconnaissance or survey evaluation.

14d2 Discuss a plan for Native American consultation on cultural resources sites. (060-20)

Response:

See response to comment 14d1.

14d3 The discussion of cultural resources (Draft EIS page 3-23) Grand Coulee Dam (Lake Roosevelt) does not include discussion of the Kettle Falls Archeological District (KFAD). (019-05)

Response:

A discussion of the Kettle Falls Archaeological District is included in Volume 1, Section 3.2.9 of the IDU Final EIS.

14d4 Greater fluctuations in Lake Rufus Woods will increase erosion, resulting in more exposure of archeological sites such as Indian graves. (060-15)

Response:

Lake Rufus Woods is behind Chief Joseph Dam, a run-of-river project owned by the COE. Run-of-river projects have little storage capacity and are operated on a short-term basis to meet power and nonpower requirements. Forebay fluctuations at these projects are common--a project may operate throughout its operating range on a daily or weekly basis. As discussed in Volume 1, Section 4.2.1, elevations at downstream projects may fluctuate a few tenths of a foot due to Intertie decisions. In the context of normal operations this is insignificant and no impacts to cultural resources at run-of-river projects are anticipated.

B15 ECONOMIC EFFECTS

15a Structure/Format Of Economic Analysis

15a1 The EIS, in both the summary and the main text, did not report a loss of $249 million on the 3rd AC. (PCF-2-10-04; 042-14)

Response:

Volume 1, Chapter 4.8 of the Draft EIS discusses the value of the Third AC project under two major assumptions (no firm contracts

and long-term firm contracts), and reports the value of the Maximum upgrade (i.e., the Third AC plus the DC Terminal Expansion Project) in both cases. The value of the Third AC as a "second-added" Intertie upgrade can be determined by subtracting the net present values reported in the Draft EIS for the DC upgrade from the net present values reported for the Maximum upgrade (leaving the net present loss of $249 million assuming no firm contracts and a $187 million benefit assuming long-term firm contracts). The Final EIS clearly shows the projected present value of the upgrades under a variety of assumptions in Section 4.5 and in the Summary.

15a2 Take seriously the undependability of your estimates of economic cost-benefit projections in these studies. (PCF-3-05-03)

Response:

Volume 1, a series of sensitivity analyses of key variables is included in Section 4.5 of the Final EIS and Volume 4, Appendix I.

15a3 The economic analysis should consider the Intertie expansion projects as they would likely be operated, with the Third AC loaded before the DC upgrade capacity, rather than in order of completion. (079-15)

Response:

The PSW market is not split into parts so that Interties could be attached to each separate market. Which tie is operationally loaded first will depend upon what market is available. See also 02b7.

15a4 Reference (pp. 2-3) to a net present value of $104 million for the Third AC/COTP may be misleading since this calculation is made exclusive of the DC Terminal Expansion project. (097-01)

Response:

Volume 1, Chapter 4.5 of the Final EIS shows the value of the 3rd AC/COTP both as a "first-added" and "second-added" facility (i.e., built before or after the DC Terminal Expansion Project).

15b Impacts of LTIAP on PNW or CA Rates

15b1 Several comments were made with regards to the various decision packages and the apparent lack of data to support conclusions reached by BPA in the EIS. Commenters questioned dismissal of the "Pre-IAP" option, and the corresponding BPA revenue increases under the options of NTIAP and BPA-First given the data presented. In addition, it was felt that BPA did not evaluate the economic impact of the proposed LTIAP as presented in Volume 2. (073-11, 20; 075-18, 19, 46)

Response:

Many factors could influence the ways in which both the costs and benefits of Intertie decisions could flow through to ratepayers in either the Pacific Northwest or California. These factors range anywhere from weather conditions to materials costs, contractual agreements, market conditions for alternative fuels, and so forth. BPA has attempted to provide an indication of the direction in which various factors might be expected to impact ratepayers. However, any attempt to specify the quantitative magnitude of effect of Intertie decisions specifically to changes in rates would be unrealistic and misleading.

15b2 To the extent secondary revenues is a criterion in the selection of the LTIAP, the analysis does not support the LTIAP selected at the maximum Intertie expansion studied. (073-23)

Response:

Selection of the LTIAP will be based on many factors. See Volume 1, Section 4.5 for economic analysis.

15b3 SAM treats the PNW as a single-owner system. It is unclear how the analysis can tell the revenue effect on the BPA versus non-Federal utilities of different nonfirm allocation methods and other IAP policy options. (073-30)

Response:

SAM is a regional model. The PNW was treated as a single utility. The Regional impact of various IAP options can be measured in changes to secondary sales, curtailment costs, production costs, and displacement benefits. Appendix I reflects impacts to BPA and the method of analysis.

15b4 The results of the Supply Pricing Model analysis used to derive estimates of rate impacts of nonfirm allocation options should be contained in the final EIS. (073-36)

Response:

The Final EIS contains expanded informaton on the economic consequences of Intertie decisions. This information is not presented in terms of rate effects, however.

15b5 The IDU Draft EIS finds that BPA wholesale power rates change negligibly with the transmission projects, with nonfirm allocation options, or long-term firm contracts. If the various LTIAP options do not materially affect BPA revenues, the proposed LTIAP is unsupported. (073-03; 075-47)

Response:

The revenues are impacted favorably for BPA as shown in Volume 4, Appendix I, Part 3 of the Final EIS. However, impacts on rates are likely to be small. See response to comment 15c2.

15b6 BPA cannot design revenues for sales over the Intertie to "increase revenues" in excess of its revenue requirement. To the extent the revenues from sales over the Interties increase, the revenues from sales within the PNW must decrease. The Draft EIS should state the correct relationship of revenues from its various customers and do the correct analysis of the effect of the different options on its rates. (073-09)

Response:

In BPA's judgment the degree of variation in uncontrollable factors influencing the economic impacts of various Intertie decisions would preclude a precise analysis of the effects of Intertie decisions on Pacific Northwest power rates. To carry this analysis a step further to the point of attempting to forecast the effects of rate impacts on the Region's economic growth, would produce a result with little reliability. To present such information in the EIS as representative of BPA's expectations would be misleading and inappropriate.

15b7 BPA should present an economic analysis not only of the Intertie upgrades, but also for each access policy scenario and should include an assessment of benefit distribution among the regions. (075-86)

Response:

Economic analyses of the effects of formula allocation and long term firm marketing are presented in Volume 1, Chapter 4, Section 4.5. Additional information on these analyses is provided in Appendix I, contained in Volume 4 of the Final EIS.

15c Impacts Of Intertie Upgrades On PNW Or CA Rates

15c1 The need for the project (3rd AC) must be determined based on benefits to the region. The EIS should analyze likely income and rate impacts to the region from the proposed power line. (031-01; PCF-3-02-02; PCF-2-11-06; 105-03)

Response:

The economic benefits of the California/Oregon Transmission Project are presented in Volume 1, Section 4.5 of the Final EIS. An analysis containing a projected division of these benefits between the Northwest, California, and Canada is presented in Appendix I. Although it is not possible to precisely predict the effect of the COTP on Northwest power rates, any effect would be

quite small. To place this effect in perspective, the current annual revenue requirement for BPA alone is approximately $3 billion. Correspondingly, the net present value of the Third AC, assuming that it is used primarily for economy energy sales is projected to be $661 million over the life of the project.

15c2 The proposed Intertie could increase or decrease electric rates to NW. (026-02)

Response:

The effect of the proposed California/Oregon Transmission Project on electricity rates in the Pacific Northwest would be very slight. Analyses presented in Volume 1, Section 4.5 of the Final EIS indicate that, depending on a variety of factors, the net present value of the proposed project could range between -$388 million and $2.8 billion over the life of the project. Amounts of this magnitude would have relatively little effect on Northwest rates given the total revenues that would be recovered by Northwest utilities over the life of the project. Currently, BPA alone recovers approximately $3 billion per year in power revenues.

15c3 Analysis should be undertaken to determine whether deferral of any 3rd AC activity would help mitigate some of BPA's proposed rate increase. If deferral helps, then the project should be deferred as long as it takes. (097-03)

Response:

Recovery of the cost of BPA's capitalized investments is spread over the estimated life of the investment. Therefore, the cost recovered in any given year represents only a portion of the total cost. Furthermore, this cost can be offset either fully, or in part, by the additional revenues received by BPA as a result of the existence of the investment. In those cases where investments result in a positive net benefit, such as anticipated for the California/Oregon Transmission Project, the revenue recovered as a result of the investment actually exceeds the repayment requirement for the investment, resulting in a lessened need for rate increases.

15d Costs Included In Analyses

15d1 Capacity costs were not included in the benefit-cost analysis and should be (PCF-2-10-10; 042-18)

Response:

The economic analyses of intertie options include:

-- costs of intertie construction
-- production costs of Pacific Northwest and B.C. Hydro resources (including costs to support capacity sales)

-- benefits of any resource deferrals in California or the PNW
-- benefits of any resource displacement in California or the PNW (net of any return requirements)

15d2 Include in Draft EIS the cost to the PNW of providing 1600 MW of transmission capability the length of Oregon, or the cost to replace the function if currently available lines are used for the third AC. (042-02)

Response:

The economic analysis in the Final EIS includes all costs in the PNW of transmission reinforcements needed for the Third AC/COTP. The cost of existing facilities is excluded since these sunk costs are not normally considered in making a decision as to whether or not the facility additions are economically justified. Volume 4, Appendix I of the Final EIS contains the Plan-of-Service costs.

15d3 All costs of the project(s) under consideration [including those for the Los Banos-Gates line] must be included for a correct analysis. (073-18)

Response:

We agree that all project costs required for use of the Third AC/COTP must be included for correct analysis. A tabulation of the project costs used in the Final EIS is presented in Volume 1, Chapter 4.5. These include 7/16 of the costs for the Los Banos-Gates line. This is the portion of the project costs assumed to be related to the COTP. See the response to 15d1.

15d4 A BPA equation which suggests that benefits of 3rd AC can be described by taking benefits of maximum upgrade and subtracting the value of the DC Terminal Expansion Project (stated on p. 4.8-3 of Draft EIS) is misstated. BPA should do an economic analysis on the basis of how these facilities will actually be operated. (PCF-2-11-05)

Response:

See 02b7.

15d5 The cost estimates of the Third AC provided by TANC are faulty (as pointed out by CPUC staff) because they do not include the cost of the facilities south of Tesla, associated facilities to deliver the electricity to TANC members, nor the cost of capitalized interest (AFUDC). (073-17a)

Response:

Delivery facilities not in the Plan-of-Service for the COTP are not included. AFUDC costs are incorporated. A portion of the

cost (7/16) for the Los Banos-Gates transmission line is included in the economic analysis. At this time it is uncertain whether or not the line will be built.

15e Relationship Of Surplus Capacity/Firm Contracts To Value Of Upgrades

15e1 The justification for the Third AC relies heavily on BPA's ability to execute long-term contracts. What level of firm contracts is required to make the Third AC economical? (097-01; 077-11; 063-07; 090-41; PCF-2-10-07)

Response:

BPA did not specifically analyze the contract level required for a break-even point. There has been a substantial increase in the California loads projected by recent California CFM forecasts. This load increase increases the benefit shown by the 3rd AC. Analyses included in the Final EIS examine a variety of relevant variables, including several firm contract alternatives. Please see Volume 1, Section 4.5.

15e2 The assumption that only 2550 megawatts would be marketable on a 6300 MW Intertie is highly arbitrary. The EIS must explain why such a limitation exists, and why total firm contracts are limited to 3150 MW. (PCF-2-10-08; 042-15a; 073-07; 075-88)

Response:

Contracts were limited to the 3150 MW level based on available firm surplus capacity forecasted for the PNW.

15e3 The incremental capacity on the DC line provided by the DC Terminal Expansion project is not suited for long-term firm contracts, thus reducing the value of the DC Terminal Expansion Project relative to the Third AC upgrade. (077-05)

Response:

See response to 02b5.

15e4 Equitable rates for energy received with capacity is an alternative to the Third AC which costs little and should be considered. (042-15b)

Response:

See 02c4.

15f Availability And Value Of Surplus Capacity And Energy

15f1 The duration of surplus energy and capacity was questioned, particularly the duration of the 3150 MW of surplus NW capacity. (PCF-2-10-09; PCF-3-05-04; 042-16)

Response:

The 3,150 MW figure was selected to represent a reasonable upper limit for the long-term firm contracts analysis. Given the configurations of contracts assumed for the IDU analyses it is reasonable to expect that the region could support this level of sales. Detailed forecast information on Northwest loads and resources is contained in BPA's report "Northwest Loads and Resources," December 1987. This document is available from BPA upon request.

15f2 The oil prices have changed since the EIS was published. The economic implications are now significantly different and may change BPA's assumptions about the California market for guaranteed and nonguaranteed sales of electricity. (PCF-2-10-02)

Response:

New oil and gas prices are reflected in the Final EIS, see Volume 4, Appendix B, Part 3.

15f3 BPA's assumptions about the California market for nonfirm energy may be too pessimistic, while its assumptions about the market for firm power may be too optimistic. (031-02)

Response:

Studies covering a range of firm marketing alternatives and California market assumptions were preared to bracket impacts.

15f4 The Draft EIS analysis is based on California benefits in part being derived from the deferral of gas turbines or refurbishments. This is not the correct basis for the analysis. (073-12)

Response: It was assumed that the generic peaking added in the CFM-VI submittals by PG&E, SCE, SMUD systems was made up of combustion turbines. Energy Management Associates in their analysis of the COTP also came to the conclusion that "The combustion/gas turbine alternative proved to be the most cost-effective resource addition . . .", p.107 of Chapter 5 of the COTP, application for a Certificate of Public Convenience and Necessity, Volume 1-A, Appendix B-3 to Exhibit B, Evaluation of the Cost-Effectiveness of the COTP, October 1987, SCE.

15f5 Refurbishments are cited as an alternative, but gas turbine costs were used to value capital additions, even though proceedings at the CPUC find refurbishments to cost less than gas turbines by between 50 and 60 percent. (073-12a)

Response:

The analysis showed that capital deferrals were not called for until the year 2001. By that time, all refurbishments are assumed to have been completed in California and are therefore not deferrable. Therefore, gas turbines were used to value capital deferral.

15f6 Gas turbines are not used per se in resource plans of PG&E and SCE, and wholesale power requirements rates may lead to gas turbines being deleted from municipal utilities' resource plans. (073-12b)

Response:

It was assumed in the Final EIS that the generic peaking added in the CFM-VI submittals by PG&E, SCE, and SMUD systems was made up of CTs.

15f7 The CEC Energy Report 6 states that California does not need capacity until the late 1990s. This is inconsistent with the assumption of the Draft EIS that the Third AC will allow a 600 MW capacity sale to California. (073-12c)

Response:

600 MW of California capacity was not deferred until the year 2001. Until that time, it was assumed that the 600 MW contract would only displace existing resources.

15f8 The energy benefit of the capacity sales is overstated in the Draft EIS, due to too high an estimate of the offpeak/on-peak differential. The differential is less than the 33/20 mills/kWh assumed by BPA. (073-15, 28; 075-89)

Response:

Estimates of the off-peak to on-peak California generation cost differential were re-evaluated for the IDU Final EIS, based on current data. The off-peak/on-peak price differential used for the economic analysis in the Final EIS varies between 9 and 11 mills (in 1987 dollars).

15f9 PG&E thinks that available and useful capacity exists both within the PNW and its surrounding regions so that full use can be made of new Intertie capacity. (075-87)

Response:

The economic analyses of the upgrade projects is based on BPA's analysis of regional surplus 50-hour peaking capability. PNW available capacity forecasts are included in the Final EIS (see Volume 4, Appendix C).

15g Economic Impacts To Other Resources

15g1 The costs and benefits appear to be inflated since environmental and mitigation costs including those for fisheries have been overlooked. (065-02, 12; 069-08, 39; 072-30; 108-04; 047-21, 31; PCF-3-05-01)

Response:

Analyses completed by BPA indicate that increased Intertie capacity would have no significant impact on the environment, including fishery resources. Therefore, there is no need for mitigation as a result of increased Intertie Capacity. The only potential fisheries impacts which might require mitigation occur under long-term contract options and affect Hungry Horse reservoir resident fish. The level of impacts and potential mitigation for these fish are currently under study (see Volume 1, Section 4.2.3.3). Estimates of the potential cost of mitigation for these fish is minor relative to the benefits associated with long-term contracts.

15g2 Overexporting one of the most essential factors for economic prosperity will stifle economy. (098-02)

Response:

The Preference Act requires that BPA energy be offered first to Pacific Northwest consumers, thereby insuring that regional growth will not be restricted due to any regional energy shortage induced by exports. Sales contracts with extraregional purchasers contain language pertaining to preference clauses requiring that power be made available in the PNW on a priority basis and subject to recall if necessary.

15g3 EIS should examine potential impacts on future fish and wildlife plans and on the economics of fishery restoration. (065-04)

Response:

The impacts on fish productivity appear minor. Because of the small impact on fish productivity, it was concluded that the potential economic impact is negligible.

15g4 Analyze impacts on the competitive position of PNW businesses. (063-06)

Response:

The Preference Act requires that BPA energy be offered first to Pacific Northwest consumers, thereby insuring that regional growth will not be restricted due to any regional energy shortage induced by exports. Sales contracts with extraregional purchasers contain language pertaining to preference clauses requiring that power be

made available in the PNW on a priority basis and subject to recall if necessary.

Selling surplus power over the Intertie, which otherwise would go unsold, helps to lower average costs of power to all consumers in the region. Failure to sell the region's surplus over the Intertie would lead to an even greater underrecovery of regional revenues than what is currently being experienced.

A relatively less expensive energy source to California markets does reduce local costs of production to California industries. However, energy-intensive products produced in California, by and large, do not compete directly for sales with energy-intensive products produced in the Pacific Northwest. Such PNW energy-intensive industries as lumber and wood products, pulp and paper products, aluminum, agriculture, etc., are not disadvantaged by sales of surplus hydroelectric energy to California, because California is not a competitive producer of such products, and because sales of surplus PNW energy help keep PNW electric rates low. In industries where direct competition does exist, such as consumer electronics, energy costs, as a share of total production costs, are relatively insignificant, and do not greatly affect the competitive position of Northwest producers.

15h Computer Models

15h1 Examine and explain model of the California market for nonguaranteed electricity. (031-07)

Response:

See 06b1.

15h2 Using the SAM computer model for the complete analysis of firm capacity and energy benefits might avoid the double counting used in the Draft EIS to calculate load shaping benefits with both SAM and hand calculations. (042-04)

Response

BPA does not believe any benefits were double counted. SAM currently does not calculate any displacement benefits due to firm contractual arrangements. These benefits were calculated by hand and included in the analysis. BPA is attempting to incorporate this calculation into the model.

15i Current Prices And Loads And Use Of Sensitivity Cases

15i1 BPA should test the sensitivity of its results due to:

a. Load growth and load/resource balances. (031-03; 047-08, 61; 073-33; 075-97; 077-02; 098-01)

b. Oil and natural gas prices. (031-03; 042-12; 060-07; 065-10; 073-25; 075-90, 98; 077-02; PCF-2-10-02; PCF-3-02-05)

c. QF level. (073-13)

d. Firm contract level. (PCF-02-08-06; PCF-3-02-05; 075-90)

e. Inflation Rate. (073-26; 077-04)

f. Risk analysis. (PCF-2-10-13)

Response:

BPA expanded its sensitivity analyses for the IDU Final EIS in order to examine the economic and/or environmental effects of certain variables including: PSW loads; PNW loads; PSW gas prices; amount of BC Hydro firm sales to the PSW; and BC Hydro price.

15i2 Sensitivity Analyses should examine impacts to revenues from firm and nonfirm sales, extraregional sales, revenues from wheeling, benefits of deferring plants, production costs in the PNW, costs of lines and upgrading the transmission system (breaking out costs in Oregon), and impacts on retail rates. This should include impacts from transmitting power from Canada and from deferring new power plants in the region. (077-01; 042-19; 073-01; PCF-2-08-03; 031-06)

Response:

See 15i1.

15i3 Present the oil/gas forecast data upon which the analysis is based in the Final EIS or a technical appendix. (073-35)

Response:

The oil/gas forecast data upon which the Final EIS analysis is based are presented in Volume 4, Appendix B, Part 2.

15j Impacts On PNW Region

15j1 BPA should provide an expanded economic analysis which evaluates alternative policies and shows how benefits and costs are allocated to BPA, other PNW, and other PSW separately. (075-20)

Response:

BPA has expanded its economic analysis from that presented in the Draft EIS. Analysis of the sensitivity of the economic analyses to variations in basic assumptions, as well as a breakdown of the cost of the California/Oregon Transmission Project, the DC

Terminal Expansion and the Intertie Access Policy, between the Northwest and California, have been prepared. Please see Volume 1, Section 4.5, and Volume 4, Appendix I.

15j2 2.1.1 The PNW would earn $290 million less with the Existing capacity than with Maximum capacity. What would be the difference for BPA? (077-08)

Response:

The proportion of benefit assumed to accrue to BPA as a result of the California/Oregon Transmission Project is discussed in Volume 4, Appendix I.

15j3 It is very difficult to ascertain from p. 4.8-14 whether or not any of the benefits of maximum Intertie expansion flow to the PNW. (097-04)

Response:

Please see Appendix I, Volume 4, of the Final EIS for a regional breakdown of the benefits of the transmission projects.

15k Treasury Payments

15k1 The Draft EIS should acknowledge treasury obligation and consider the impact of various policy alternatives on the Federal treasury. (PCF-2-10-12; 042-11; 052-08)

Response:

Economic analyses of the proposed Intertie actions are presented in Section 4.5 of Chapter 4, Volume 1. However, since BPA is a self financing Federal agency, and is required to repay any borrowings from the Federal Treasury with interest, the Intertie decisions would have no significant effect on the Federal Treasury.

15m Other

15m1 More information is needed regarding projections of income from sales to California and the assumptions that go into those projections, particularly regarding the availability of fossil fuels and competing markets for California. (PCF-2-08-01)

Response:

Please see Volume 4, Appendix B, Part 2.

15m2 To invest $100,000,000 for a transmission facility to transmit energy to Southern California to be sold at less than the cost of generating it will increase the financed deficit, and is directly counter- productive to the stated goal of being consistent with sound business principles. (034-02)

Response:

The economic analysis of the Intertie upgrade sells energy only at or above its cost of generation. In SAM, all resources are economically dispatched. That is, they are run for export if their operating cost plus 2 mills is less than the lesser of .75 of the PSW marginal cost or the rate associated with the IAP condition.

15m3 While the Draft EIS purports to consider allocations based on sales, it in fact contains no meaningful analysis of the economic impacts of this competitive alternative. (052-12)

Response:

The IDU Final EIS contains substantial additional information on the economic impacts of different formula allocation procedures. Please see Section 4.5 of Chapter 4, Volume 1, and Appendix I, Volume 4.

15m4 Additional unquantified benefits are cited in the Draft EIS, such as access to new markets and lower costs to public utilities. This is incorrect and the presentation should be balanced to include the full effect. All of California has essentially been available to PNW sellers before. (073-29)

Response:

In California, nonowners have generally had to pay a markup to purchase PNW energy through owners. By increasing the number of California Intertie facility owners, the Third AC/COTP will increase the number of utilities able to purchase directly from the PNW, and more widely distribute the benefits of inexpensive PNW energy within California.

15m5 The Draft EIS fails to take into account the probable effect of the LTIAP and BPA's ratemaking policies on the California market for PNW power. (074-11)

Response:

The draft IDU EIS addressed the effects of policy options on California. It did not address BPA's ratemaking policy because as affirmed in C.E.C. v. Johnson that policy is not at issue here.

15m6 BPA should make the assumptions necessary to estimate possible regional impacts for the LTIAP options and allow reviewers to comment on the assumptions. (075-91)

Response:

Estimates of the regional impact of the proposed Intertie Access Policy Options, and a description of the assumptions used in the Final EIS analysis are presented in Appendix I, Volume 4.

15m7 The Draft IDU EIS may understate some of the benefits of the Third AC (Section 4.8) since BPA is assuming that net revenues after 2005 to the PNW will not increase after counting for inflation. (077-03)

Response:

It is true that the Draft EIS may overstate or understate benefits by the end-effect assumptions. Analysis for the Final EIS eliminates this problem for the studies which examine impacts of IAP alternatives by limiting analysis to the 20-year study horizon. However, for Intertie upgrade analyses, the studies' last year costs and benefits are extended for the balance of the study, because it is not possible to predict with any greater certainty the benefits of interregional sales so far in the future.

15m8 4.8.2.1.3 The loopflow assumption given here is that capacity is reduced by 300 MW in all cases. Does the EIS slight the problem? (077-12)

Response:

Loopflow impacts are extremely difficult to model. The assumption of a 300 MW reduction for all cases is a very simple approach. However, we believe it is adequate for the purpose of these studies. At this time we do not have any methods that would give us any more technically sound results.

15m9 Wording change: page 4.8-3, last paragraph, change to ". . . utilities, the Third AC/COTP would increase the number of interregional transactions the PNW could engage in." Delete the rest of the paragraph. (068-24a)

Response:

See response to 15m4.

15m10 What are the net benefits of a policy that would allow development of additional large generating capacity in the NW and perhaps British Columbia when there exists abundant generating resources in Inland SW? (026-02)

Response:

BPA's EIS studies do not show new resource development in the PNW or Canada until the late 1990s. By that time, existing resources throughout the study region, including the ISW, will be used at high capacity factors, and new resources will be developed to serve load in each region. BPA's analysis predicts that new resources will not be developed in the PNW or Canada to serve extraregional load except in the Case 3 and "laissez-faire" levels of firm contracts. The analysis that led to that conclusion took into account existing and planned ISW resources in determining California demand.

15m11 The EIS should analyze the benefits and costs, risks, and impacts of a scenario(s) in which there is some non-BPA ownership of an expanded Intertie. (090-37)

Response:

The pre-IAP policy scenario analyzed by BPA provides an indication of the benefits, costs, risks and impacts of a scenario in which access to the Intertie is not controlled by BPA's proposed LTIAP. BPA believes that this approach approximates the situation which would occur if all or a portion of the Intertie were under non-Federal ownership. In addition, BPA is currently evaluating the potential for allowing non-Federal participation in upgrading Intertie capacity (see Volume 1, Section 2.2.3). If BPA decides to propose allowing non-Federal participation in increasing Intertie capacity, appropriate environmental analysis will be undertaken. See also 02c8.

15m12 South to north transfers play an important part in future transactions between the NW and SW and should be dealt with in BPA's LTIAP. (059-11)

Response:

This comment addresses an Intertie Access Policy issue and will be responded to in the Administrator's Record of Decision on the Long Term Intertie Access Policy.

15m13 BPA should consider multiple scenarios since the assumptions used in the models have become critically important in assessing the range of actual results. Also, make reference to the limitations of models. (075-93)

Response:

The analysis for the Final EIS includes both analyses of a variety of combinations of Intertie decisions, and sensitivity analyses of several important variables. The descriptions of the analytical models (in Volume 4, Appendix B) do describe some of the models' limitations.

B16 OTHER MISCELLANEOUS ISSUES

16a You haven't done your job unless you also get a financial impact statement written into this Intertie Policy as to who you are going to tie in with and so forth with regards to PP&L upgrade contract. (PCF-3-01-01)

Response:

The cost of upgrading Pacific Power and Light's 230 kV transmission line between Eugene and Medford, Oregon, has been included in BPA's economic analysis of the California/Oregon

Transmission Project. Please see Volume 1, Section 4.5, and Volume 4, Appendix I for additional information concerning the economic analysis of the California/Oregon Transmission Project.

16b If Bonneville really wants to do a service to the citizens of Oregon, they should think about selling more firm power to PP&L and let PP&L ship this Colstrip No. 4 directly down to Los Angeles. (PCF-3-04-01)

Response:

In all cases, prior to making a sale to California, BPA is required by law to offer the power first to public and then to private utilities in the Pacific Northwest. BPA makes sales to California only when there are no buyers in the Northwest willing to purchase the commodity at the price offered. BPA's Firm Displacement sales are intended to allow sales of BPA power to regional utilities for their thermal displacement. The Pacific Northwest utilities may then choose to run the displaced thermal resources for export sales.

(VS6-WP-PG-5857K)

SUMMARY OF PUBLIC COMMENT FORUMS

IDU Draft EIS

When a draft environmental impact statement is completed and printed, it is circulated to interested members of the public, the media, and governmental agencies. Readers are urged to review the document and the findings and to comment on both, either by letter or in any of a number of public meetings. For the IDU Draft EIS, three public meetings were held in the region to officially take comment into the record. The comments were then reviewed and are answered in this, the IDU Final EIS.

In addition to the public comment forums, BPA also conducted two discussion meetings. The purpose of these meetings was to allow the public to raise questions they might have on the IDU Draft EIS and/or the proposed Long Term Intertie Access Policy (IAP) and get some clarification from BPA so they would be able to better formulate their comments.

The three formal public comment meetings were held as follows:

		Attendance
Oakland, CA	December 9, 1986	39
Portland, OR	December 10, 1986	48
Klamath Falls, OR	December 11, 1986	18

A court recorder took a complete record of each meeting. After a presentation by BPA which included brief summaries of both the proposed Long Term IAP and the IDU Draft EIS findings, the floor was open to speakers. Although the meetings were on both the IAP and the Draft EIS, they were divided into two sessions: one for IAP comments and another for Draft EIS comments.

Oakland, California Meeting

At the first public forum, only two people voiced their opinions on both the IDU Draft EIS and the proposed IAP. This particular meeting took comments on the Draft EIS first, then the IAP.

One commenter stressed the need for the EIS to look at tradeoffs between the use of coal plants and hydro plants in the Pacific Northwest to displace California gas plants. The suggestion was to look at the coal plants and at ways to change the operation scheme within the structure of the coal plants to maximize economic and environmental benefits. Two coal units were suggested--the dirtiest and most expensive to run, the Centralia units, and the cleanest and least expensive, the Colstrip units.

Another concern was the lack of mechanisms to insure that utilities get credit for conservation in the context of power transfers to California.

A commenter felt that the EIS should not assume that the existing intertie allocations within California are given. The commenter felt the appropriate question to ask is what is the economically and

environmentally optimal allocation of export power within the state of California.

BPA was urged to consider a condition on access, for any long-term sale, that BPA would not be bound to develop and pay for any new resources that might be needed to sustain that sale. In addition, the commenter felt that BPA's restrictions on new generating resources should continue even after the Intertie is upgraded to maximum size.

Another commenter wondered why the Draft EIS did not contain an alternative that made the remainder of the Intertie, after BPA's share, available on a competitive basis.

For the IAP, one commenter asked if BPA had determined how much of the Intertie it must reserve under various conditions in order to meet its obligations to the Treasury. It was suggested that these determinations be part of the record with support from detailed analysis.

Back to the issue of BPA being obligated to acquire resources, a commenter urged that a provision be included in the IAP that refuses intertie availability to long-term transactions unless the party involved in the transaction absolves BPA from any obligation to make up the difference if the transaction proves to have been imprudent.

Another commenter responded to the above comment with a question as to when to determine a transaction as imprudent--BPA would have to determine if it was providing Northwest utilities with additional energy for natural load growth or for imprudent transactions.

The other commenter clarified that he felt there were a number of backup mechanisms to make sure that power was available for 20-year transactions that did not require BPA being obligated to provide resources. These mechanisms include: leases on idle oil and gas capacity in California, purchases of interruption rights, and conservation investment.

Portland, Oregon Meeting

A total of seven people commented during the second public meeting. Comments on the IAP were solicited first.

The first commenter, as well as several others, voiced concern over the IAP's lack of firm Intertie access for exchanges. It was suggested that BPA use the same allocation method used for Washington Water Power's exchange with Southern California Edison to prevent any interference with BPA's marketing plans by seasonal exchanges. The commenter further suggested that the WWP/SCE allocation method be applied to all Assured Delivery contracts under Condition 1 until expiration of the Exportable Agreement and be applied under Condition 2 of the proposed IAP.

Another commenter stated that the definition of "Existing Pacific Northwest Resources" was far too restrictive. He felt the definition must be changed to recognize the resources that were operational, under construction, or contracted for as of September 7, 1984.

The same commenter thought the language in Section C.3.2 was too broad and by combining that language with language of I.3.b and d, BPA could deny access for resources violating any statute.

The commenter indicated support of BPA's position on conditions for Intertie access contained in Section C.6.

It was felt that the IAP, as drafted, would oblige BPA to back up firm sales from other Northwest utilities. Commenter wanted to ensure that BPA would have recall provisions in contracts consistent with BPA's statutory obligations.

It was mentioned that Section F.1 gave BPA pre-emptive rights that were far too broad. The commenter felt the focus of this section should be narrowed to only the unloaded portion of the Intertie.

Another comment made was that the Intertie is a regional resource and that BPA is to act as a common carrier and has to take into account the impacts of its actions on all of the other utilities in the Northwest.

A comment was made that BPA's policies are too uncertain and costly. The commenter felt that BPA's policy is very short-sighted and did not take into account the fact that the very revenue BPA was attempting to protect in the near term, with its BPA-first policy, will in the long-run be what is lost.

The commenter, speaking for the nongenerating public utilities, felt BPA should not allow its energy to be displaced on the Intertie by any party except those which own a portion of the Intertie and who are allowed on the Intertie in proportion to their ownership.

The term "use" in Section C.6. was defined by one commenter as the physical scheduling of power and capacity. The commenter wanted to ensure that this definition was incorporated into policy. The commenter also asked that BPA clarify in its policy that it will not attempt to judge the merits of how other Intertie users choose to schedule their lines in determining access to BPA's share of the Intertie.

A commenter pointed out that the policy precluded or excluded utilities from using other Intertie facilities which BPA has access to, during those times when their capacity is not fully usable. A clarification or rethinking of this element of the policy was requested.

Two suggestions were made--one, that BPA explicitly recognize its contracts and relationships with other Intertie co-owners in any definition of the Intertie, and two, that BPA consider making provisions within the Policy to prevent the abuse of assigning net surplus created on paper by an action of contrived reallocation of resources simply for the purpose of gaining Intertie access.

The comment session then moved into comments on the Draft EIS. One commenter believed the EIS needed more information, particularly regarding BPA's projections of income from sales to California and the assumptions that go into those projections (especially those regarding

the availability of fossil fuels and competing markets). The need for more time to review the EIS was brought up. The commenter related several specific recommendations for the EIS. One was that BPA show the project's (3rd AC) range of likely income and rate impacts to the Pacific Northwest. Two, BPA should show that the 3rd AC line is needed for extra firm or guaranteed electricity sales contracts to be signed. Third, BPA should examine and more thoroughly explain its model of the California market for nonguaranteed electricity. Fourth, the sensitivity of results should be tested using the most recent fuel price and demand forecasts in a range of likely firm sales contracts. In addition, the Northwest Power Planning Council should be consulted to verify findings on fish impacts. And finally, the commenter noted support for BPA's fish protection provisions and urged BPA to maintain those in the final policy.

Another commenter thought the need for the proposed action was not adequately described and that the EIS should analyze how much expanded Intertie capacity is necessary under various capacity scenarios. The EIS should describe the need for the expanded Intertie and the consequences for Northwest power resource development if the least cost mix is not assumed in the analysis. The EIS should also discuss the need for and the content of the IAP.

The commenter objected to the assumption that the DC Terminal Expansion Project was not considered an option for decision-making purposes.

It was felt that the EIS did not discuss the consequences of long-term sales for Pacific Northwest resource development, nor did it include a discussion of institutional impacts.

One commenter believed the modeling analysis suffered from several deficiencies regarding fish protections.

This same commenter voiced several concerns about the EIS: thresholds for significance to fisheries are arbitrary; the potential fishery impacts due to the incentive provided by an expanded Intertie for development of non-Federal hydropower are not analyzed; and the EIS analysis does not address sequential continued negative fish impacts over a number of life cycles. In addition, the commenter felt the EIS should discuss the adequacy and enforceability of all mitigation alternatives, including fishery agencies and tribe's recommendations.

Another commenter stated that a large portion of BPA's proposal is based on capacity sales which increase the dams' output on the rivers. This type of operation has significant impact on the dams' capability to produce energy, due to rising tail waters; will increase downstream river fluctuations on a daily basis; will have impacts omitted that were mentioned in the EIS.

Several other points made by the commenter: the cost of the loss of energy was also omitted. Oil prices have changed drastically since the EIS was published which makes most of the economic analysis in the EIS invalid. The computer programs used have not been documented in intermediate steps to fully let the reader know what is being done. And,

the executive summary of the report fails to mention that the dollar figure from the 3rd AC without the firm sales is a $249 million loss. The commenter went on to list additional concerns about the EIS. He felt that most of the data for the Inland Southwest presented in the EIS was meaningless. That the EIS assumes oil production in California will continue through the year 2030 when many oil producing plants in California are aging and are unlikely to be replaced with other oil plants. One commenter felt that it was reasonable for BPA to expect some commitment from the Southwest for capacity sales before cost of construction was incurred. The assumption that only 2550 MW would be marketable with 6300 MW of Intertie capacity was felt to be highly arbitrary. One concern was how long the 3150 MW of surplus Northwest capacity would be available. In addition, the cost-benefit analysis failed to include the cost of the capacity to the Northwest when selling it to the Southwest. The commenter summed up his comments by saying the EIS lacked almost everything that should be in an EIS and should be revised and reviewed by the public again.

Several suggestions were made as to items to include in the EIS: (1) begin to reduce the debt to the Treasury rather than to continue to increase it; (2) undertake risk analysis; and (3) the EIS should fully discuss the potential resource development in the Northwest that the Intertie may stimulate.

Another commenter felt the EIS dramatically overstates the benefits of the DC Terminal upgrade and also understates the benefits of the 3rd AC line. BPA's estimates of the value added by the DC Terminal upgrade and the 3rd AC are improperly calculated. The DC Terminal upgrade increment of the DC line will only be loaded after all existing facilities and the 3rd AC are loaded. During most months, under medium water, the DC Terminal upgrade share will likely be unloaded while the 3rd AC will continue to see some use during those periods, due to the lower losses on the 3rd AC and the fact that the 3rd AC has access to greater amount of markets.

The commenter noted that an equation stated on page 4.8-3 of the draft EIS is incorrect. Further, the commenter felt BPA should do an economic analysis on the basis of how these facilities will actually be operated. The commenter believes that BPA has failed its customers by not performing any economic analysis of the costs versus benefits to Pacific Northwest ratepayers for the Pacific Northwest share of these Intertie facilities.

Klamath Falls, Oregon Meeting

The final public meeting on the IDU EIS and proposed long-term IAP was held in Klamath Falls, Oregon. Comments on the IAP were taken first.

The first commenter stated that BPA had not done its job unless a financial impact statement was prepared and information is provided on who BPA will tie into, particularly with regards to the PP&L contract. The commenter also felt that the lines and capacity alternatives discussed in the EIS were largely for California's benefit.

Another commenter felt BPA should extend the deadline for written comments. BPA should also show the project's range of likely income and rate impacts to the Pacific Northwest, and should show the 3rd AC line is needed for firm or guaranteed electricity sales contracts to be signed. He went on to say that BPA should examine and more thoroughly explain its model of the California market for nonguaranteed electricity. The sensitivity of results should be tested using recent fuel prices and demand forecasts and a range of likely firm sales contracts. In addition, BPA should consult with the Northwest Public Power Council and fish agencies to verify its findings on fish impacts, and the proposed access provisions to protect fish and wildlife should be kept.

A third commenter thought BPA should sell more firm power to PP&L and let PP&L ship power from Colstrip #4 directly to Los Angeles, as a service to the citizens of Oregon.

The comment forum was then expanded to include IDU Draft EIS comments. BPA was encouraged to do serious detailed studies of the economic costs of the proposed changes to fisheries and was urged to take the fish seriously, as well as the income of people who live off the fish.

The commenter felt BPA should protect itself from locking itself into contracts that benefit only non-BPA power agencies. Also, he urged BPA to take seriously the undependability of its estimates in the economic cost-benefit projections in the EIS. The future of rates and the availability of resources and short-lived surpluses were stressed as important considerations.

The commenter also asked for additional time in commenting on the EIS and proposed IAP.

(VS6-PG-1879Z)

PART 2

Hydro Operations Information Paper

Hydro Operations Information Paper

Close of Comment 12/31/87

Letter Number	Commenter/Affiliation
TIE-2-117	Gordon F. Snow, Resources Agency of California
TIE-2-118	John Carr, Direct Services Industries, Inc.
TIE-2-119	Robert G. Whitlam, State of Washington, Dept. of Community Development, Office of Archaelogy & Historic Preservation
TIE-2-120	F. Lorraine Bodi, Attorney, National Oceanic and Atmospheric Administration
TIE-2-121	Gregory Bowers, G.H. Bowers Engineering
TIE-2-122	Mark Crisson, Tacoma Public Utilities
TIE-2-123	Russell Peterson, U.S. Dept. of Interior, Fish & Wildlife Service
TIE-2-124	Jim Jones, Attorney General, State of Idaho
TIE-2-125	Joseph Blum, State of Washington, Dept. of Fisheries
TIE-2-126	Peter Fairchild, California Public Utilities Commission
TIE-2-127	Stuart Gardiner, Pacific Gas & Electric
TIE-2-128	Al Wright, Pacific Northwest Utilities Conference Committee
TIE-2-129	Dan Magers, Idaho Steelhead & Salmon
TIE-2-130	Ed Chaney, Northwest Resource Information Center, Inc.
TIE-2-131	Roy Elicker, National Wildlife Federation
TIE-2-132	R.W. Kendall, Southern California Edison Company
TIE-2-133	Larry Peterman, Montana Dept. of Fish & Wildlife
TIE-2-134	John Keys, U.S. Dept. of Interior, Bureau of Reclamation
TIE-2-135	S. Timothy Wapato, Columbia River Inter-Tribal Fish Commission
TIE-2-136	G.R. Garman, Seattle City Light
TIE-2-137	Hector J. Durocher
TIE-2-138	Einar Wold, National Marine Fisheries Service
TIE-2-139	James Fry, U.S. Army Corps of Engineers
TIE-2-140	C. Dale Duvall, U.S. Dept. of Interior, Bureau of Reclamation
TIE-2-141	Morris Brusett, Northwest Power Planning Council

Hydro Operations Information Paper

Issues List

LTR NO: TIE-2-120 ISS NUM: 00a COM NUM: 1
COMMENT: The materials outlined in the Information Paper will undoubtedly lead to changes in the IDU EIS that warrant preparation of a supplemental draft. Comments submitted on the Information Paper itself cannot substitute for comments on a revised EIS.

RESPONSE: The actions, alternatives, and impacts in the IDU Final EIS are substantially the same as those presented in the IDU Draft EIS published in October 1986. New information coming to light since the draft EIS was circulated to the public in the Hydro Operations Information Paper published in November 1987. While this information was new, it was not significantly different from what was in the Draft EIS. Thus, BPA has exceeded the minimum requirements for public review of its Intertie analysis by publishing new information even though it was not significantly different from the old information.

A new draft EIS at this time would only be redundant of the draft published in October 1986 and the new information published in November 1987. The "environmental landscape" has not changed seriously, and another round of public review would only address the same information that has already been circulated for review.

LTR NO: TIE-2-120 ISS NUM: 00a COM NUM: 2
COMMENT: The draft IDU EIS considered the D.C. expansion to be an established action rather than an optional decision. BPA should either provide a revised draft IDU EIS or a separate draft EIS for public review and comment.

RESPONSE: The IDU Draft EIS proposed operation of the DC Expansion as "decision package no. 3" (Page 2-11), and proposes no Intertie expansions as part of decision packages 1 and 2 (page 2-10). Thus, BPA has in fact presented operation of the DC Expansion as a proposed action in the IDU Draft EIS.

Furthermore, BPA has presented the impacts of operation of the DC Expansion in a number of places in the IDU Draft EIS. For example, Tables 4.4.20 to 4.4.22 show changes in air quality due to the DC Expansion as well as other Intertie capacities.

As a general rule, Federal agencies prepare new or supplemental draft EISs only when changes since release of the draft EIS have been "significant." 40 C.F.R. §1502.9(c). BPA agrees that there have been changes since the IDU Draft EIS was released in October 1986. But these changes do not present a seriously different picture of the environmental

landscape such that a new round of public review is warranted. Because the IDU Draft EIS presented the DC Expansion as one of the proposed decision packages, and because the environmental impacts of the DC Expansion are substantially the same in the IDU Final EIS as they were presented in the IDU Draft EIS, BPA has determined that no new draft EIS or supplement to the draft EIS need be prepared.

LTR NO: TIE-2-120 ISS NUM: 00a COM NUM: 3
COMMENT: BPA may be viewing its internal Intertie schedule as more important than full compliance with environmental review responsibilities.

RESPONSE: In preparing the IDU Final EIS, BPA is complying fully with the regulations implementing the National Environmental Policy Act, 40 C.F.R. Parts 1500-1508. What is required is that the IDU Final EIS "provide full and fair discussion of significant environmental impacts," "focus on significant environmental issues and alternatives," and "be concise, clear, and to the point." 40 C.F.R. §1502.1. BPA believes that the IDU Final EIS meets these criteria and is in full compliance with environmental review responsibilities.

The schedule for proposed actions is not irrelevant. Federal agencies have an obligation to integrate environmental review procedures with other planning processes. 40 C.F.R. §1500.2(c). BPA has done this, and is also mindful of its obligations to administer its programs on a reasonable schedule.

LTR NO: TIE-2-124 ISS NUM: 00a COM NUM: 2
COMMENT: BPA should prepare a revised draft environmental impact statement. Until such a draft EIS has been prepared, the public and agency decisionmakers are deprived of the information needed to make a reasoned assessment of BPA's Intertie program.

RESPONSE: See response to comment TIE-2-120, 00a, 1.

LTR NO: TIE-2-124 ISS NUM: 00a COM NUM: 3
COMMENT: The Information Paper does not comply with the Order in Idaho v. Herrington directing BPA to prepare an Environmental Impact Statement on the DC Expansion Project.

RESPONSE: BPA believes that the IDU EIS does in fact satisfy the Court's order. The Ninth Circuit Court of Appeals ordered BPA on October 6, 1987, to prepare an EIS on operation of the DC Expansion, among other actions. The EIS BPA is preparing is the IDU EIS, which was already under preparation by the time the Court ordered it. The Court had been informed that BPA was preparing the IDU EIS, and the IDU EIS was originally scoped to encompass the operation of the DC Expansion. Thus it was ideally suited to carry out the Court's order.

The Draft IDU EIS was filed in October 1986. BPA continued refining its analysis and in mid-1987 discovered preliminary information that had a bearing on decisions already made for the DC Expansion. In an affidavit filed with the Court on August 4, 1987, BPA Administrator James J. Jura stated that "there is now in place an ongoing decisionmaking process to take this new information into account (the IDU EIS), and that new decisions on the manner and amount of use of the DC Expansion will be made before the DC Expansion will ever be operated." In the Idaho v. Herrington case, BPA informed the Court that BPA was in the process of rethinking its decision on operation of the DC Expansion and asked the Court to remand the decision on operation to BPA for further administrative proceedings. That is when the Court ordered preparation of an EIS.

The IDU Final EIS satisfies the requirements of the Court's order. It is scoped to encompass all the actions, alternatives, and impacts mentioned in the Court's order.

LTR NO: TIE-2-125 ISS NUM: 00a COM NUM: 1
COMMENT: This document is not an adequate substitute for either a separate EIS on the DC Expansion Project or a major revision of your IDU Draft EIS issued on October 31, 1986.

RESPONSE: See response to Comment TIE-2-130, 00a, 1.

LTR NO: TIE-2-128 ISS NUM: 00a COM NUM: 15
COMMENT: There is no need for further analysis concerning the IDU EIS. The output is adequate to finalize the IDU EIS.

RESPONSE: No response necessary.

LTR NO: TIE-2-130 ISS NUM: 00a COM NUM: 1
COMMENT: In an order dated October 6, 1987 the court directed BPA to prepare an EIS on "the DC expansion Project, to consider alternatives in addition to not going forward with the project, including mitigation of damage to the environment." Bonneville purports to comply with the court's order. Instead, Bonneville perpetuates and magnifies the problems that led to the order.

RESPONSE: The IDU EIS will satisfy the requirements of the Court's order. It is scoped to encompass all the actions, alternatives, and impacts mentioned in the Court's order. The IDU EIS was already under preparation by the time the Court ordered it. The Court had been informed that BPA was preparing the IDU EIS, and the IDU EIS was originally scoped to encompass the operation of the DC Expansion. Thus it is ideally suited to carry out the Court's order. See the response to comment TIE-2-124, 00a, 3.

LTR NO: TIE-2-130 ISS NUM: 00a COM NUM: 4
COMMENT: Page 2, footnote 1: Bonneville states that incorporating the results of new computer simulations into a pre-existing IDU Draft EIS "...satisfy[ies] the directives of the court in State of Idaho v. Herrington." We disagree. Deficiencies cannot be remedied by simply inserting the Hydro Operations Information Paper into the IDU Final EIS as proposed by BPA.

RESPONSE: The IDU Final EIS is based on (1) the IDU Draft EIS filed in October 1986; (2) the Hydro Operations Information Paper issued in November 1987; (3) comments received on each of those, (4) the revised draft Intertie Access Policy issued in December 1987, and comments received on it; (5) new data generated by BPA or presented to BPA and related to the proposed actions and alternatives in the IDU Final EIS; and (6) mitigation measures not in the IDU Draft EIS. Thus, the IDU Final EIS does not consist merely of the IDU Draft EIS and the Hydro Operations Information Paper.

LTR NO: TIE-2-130 ISS NUM: 00a COM NUM: 5
COMMENT: Bonneville should build on the substantial effort represented in the IDU Draft EIS, encompass all related actions, work with Idaho interests to develop specific alternatives and mitigating measures that protect Idaho's interests, and reissue it in draft.

RESPONSE: BPA will work with Idaho fishery interests to develop mitigation measures for Idaho fish, if such mitigation is deemed necessary.

LTR NO: TIE-2-130 ISS NUM: 00a COM NUM: 14
COMMENT: Redo and reissue the IDU Draft EIS.

RESPONSE: See response to comment TIE-2-120, 00a, 1.

LTR NO: TIE-2-131 ISS NUM: 00a COM NUM: 1
COMMENT: The Hydro Operations Information Paper is woefully inadequate and cannot substitute for an EIS.

RESPONSE: The Hydro Operations Information Paper was intended only to circulate for public review the latest information BPA had obtained on the effects of the actions and alternatives in the IDU EIS. It was not intended to substitute for an EIS.

In a sense, the Hydro Operations Information Paper is the functional equivalent of a supplement to the IDU Draft EIS: it was the latest information, it was open to 45 days of public comment, and it was sent to all persons and entities who received the IDU Draft EIS. It brought everyone up to date and everyone had a chance to comment on BPA's latest information.

BPA did not actually prepare a supplement to the IDU Draft EIS because that new information was not "significantly" different from the information presented in the IDU Draft EIS.

LTR NO: TIE-2-132 ISS NUM: 00a COM NUM: 1
COMMENT: If the document is intended to qualify as a supplemental Environmental Impact Statement (EIS) then the cover sheet needs to have added a list of responsible agencies, a description of the proposed action, and a designation as to whether the document is draft or final; a list of preparers; a list of agencies, organizations and persons to whom copies of the statement are sent; and an index.

RESPONSE: See response to comment TIE-2-131, 00a, 1.

LTR NO: TIE-2-135 ISS NUM: 00a COM NUM: 1
COMMENT: We believe that the National Environmental Policy Act (NEPA) requires that BPA prepare and circulate a draft environmental impact statement (EIS) addressing "the DC Expansion Project, the impact of trying the DC Expansion Project to the AC Expansion Project, and the new contracts marketing arrangements involving power to be transmitted to the Southwest. The Hydro Operations Information Paper does not satisfy the requirements of the Court's order and fails to fulfill the purposes of NEPA.

RESPONSE: See response to comment TIE-2-131, 00a, 1.

LTR NO: TIE-2-135 ISS NUM: 00a COM NUM: 2
COMMENT: BPA must consider alternatives to the DC Expansion in addition to not going forward with the project. These alternatives have not been described in the Hydro Operations Information Paper and deserve to be reviewed in a draft EIS.

RESPONSE: The alternative of not going forward with the DC Expansion, and of operating the DC Expansion in alternative ways, was analyzed in the IDU Draft EIS. Updated information was presented in the Hydro Operations Information Paper. Any further review of this information, such as presenting it again in a revised draft EIS, would be redundant.

LTR NO: TIE-2-136 ISS NUM: 00a COM NUM: 3
COMMENT: We regard the Information Paper as an update to your Draft Intertie Development and Use Environmental Impact Statement (IDU EIS).

RESPONSE: Comment noted.

LTR NO: TIE-2-138 ISS NUM: 00a COM NUM: 12
COMMENT: Recommend that mitigation alternatives be addressed, clearly and in detail, in the forthcoming draft or revised EIS.

RESPONSE: Please see information on mitigation in Sections 4.2.3.3.2 and 4.2.2.5 of Volume 1.

LTR NO: TIE-2-140 ISS NUM: 00a COM NUM: 1
COMMENT: The data, assumptions, and model changes are of such magnitude as to make, in our opinion, the reissuance of the Draft EIS a necessity.

RESPONSE: On the question whether to revise or supplement the IDU Draft EIS, BPA is following the regulations of the Council on Environmental Quality(CEQ). Their regulations require a revised draft or a supplement to a draft if there were "significant" new circumstances or information bearing on a proposed action or its impacts, or if there were substantial changes in the proposed action. 40 C.F.R., Section 1502.9(c). The comment itself acknowledges that there is no significant difference in information between the IDU Draft EIS and the Hydro Operations Information Paper.

BPA has determined that under the CEQ's regulations there are no significant new circumstances or information bearing on the proposed action or its impacts, and no substantial changes in the proposed action. The proposed actions are the same in the Hydro Operations Information Paper as were in the IDU Draft EIS. The environmental information is substantially the same in the Hydro Operations Information Paper as in the IDU Draft EIS. Thus, under the CEQ's regulations, BPA need not prepare either a revised draft or a supplement to the IDU Draft EIS.

The commenter also suggests that changes in BPA's models and assumptions make a new draft EIS necessary. Even if these changes were substantial, a new draft EIS would not be necessary. Courts have ruled that a new draft EIS is necessary only if there is new information or a change in circumstances that is "serious" (State of Wisconsin v. Weinberger, 745 F.2d 412 (7th Cir. 1984) (supplement required only if "new information provides a seriously different picture of the environmental landscape such that another hard look is necessary"; emphasis original)). Because the changes in BPA's models and assumptions have not created a "seriously different picture of the environmental landscape," BPA has determined not to publish a new draft EIS.

LTR NO: TIE-2-122 ISS NUM: 00b COM NUM: 1
COMMENT: We commend the Bonneville Power Administration's (BPA) efforts to model the operation of the hydrosystem and agree with BPA's conclusions.

RESPONSE: No response necessary.

LTR NO: TIE-2-127 ISS NUM: 00b COM NUM: 1
COMMENT: PG&E is pleased that many of the changes BPA has made in modeling hydro operations address issues PG&E raised in its comments of January 14, 1987 on the IDU EIS.

RESPONSE: No response necessary.

LTR NO: TIE-2-128 ISS NUM: 00b COM NUM: 1
COMMENT: PNUCC is pleased that BPA has updated its analysis and revised its conclusions since July 1987. The data and modeling changes have improved the analysis to better reflect actual operation and coordinated planning. PNUCC agrees with these findings.

RESPONSE: No response necessary.

LTR NO: TIE-2-136 ISS NUM: 00b COM NUM: 4
COMMENT: We are pleased with your statement in the December 1987 Issue Alert (The Intertie) which states that the analyses and comments associated with the Hydro Operations Information Paper will be incorporated in the IDU Final EIS.

RESPONSE: No response necessary.

LTR NO: TIE-2-130 ISS NUM: 00c COM NUM: 13
COMMENT: Bonneville's segmented approach to NEPA analysis, apparent short shrift to troubled Idaho chinook stocks and dependent economies, and apparent preoccupation with inscrutable computer simulations that appear to defy logic, have created a climate of uncertainty and fear that feeds internecine conflict between fisheries and expanded Intertie advocates.

RESPONSE: BPA believes the analysis of anadromous fish for the IDU Final EIS adequately considers Idaho's fish stocks and is performed in a very logical manner. The computer methods employed by BPA are the best available means to discern impacts.

LTR NO: TIE-2-131 ISS NUM: 00c COM NUM: 3
COMMENT: The bottom line is that BPA's Intertie expansion program is a very significant agency decision with the potential to severely impact the Pacific Northwest's fishery and wildlife resources.

RESPONSE: Based on extensive analyses on Intertie options, BPA can not conclude that Intertie decisions have the potential to severely impact regional fish and wildlife resources.

LTR NO: TIE-2-117 ISS NUM: 00d COM NUM: 1
COMMENT: The State of California has no comments or recommendations to offer.

RESPONSE: No Response Necessary

LTR NO: TIE-2-124 ISS NUM: 00e COM NUM: 5
COMMENT: Regional fisheries agencies and tribes have submitted detailed critiques of BPA's analytical methods in comments on the Supplemental Environmental Assessment for the DC Expansion Project and the IDU Draft EIS. Comments on those two documents remain relevant and are incorporated herein by reference.

RESPONSE: BPA is aware of the previous comments submitted by regional fishery agencies and Tribes throughout the years of analysis associated with Intertie alternatives. BPA has adjusted its analysis, where appropriate, based on these comments.

LTR NO: TIE-2-130 ISS NUM: 00e COM NUM: 3
COMMENT: I wish to incorporate into these comments by reference NRIC's January 16, 1987 comments on the Intertie Development and use Draft Environmental Statement, our August 5, 1986 comments on the Supplemental Environmental Assessment, Terminal Expansion, July 1986, our April 3, 1987 Brief of Idaho Intervenors and related memoranda and affidavits in Case Nos. 86-7704 and 86-7705 before the Ninth Circuit Court of Appeals.

RESPONSE: Each of the documents mentioned is included in the Administrative Record and is being considered.

LTR NO: TIE-2-135 ISS NUM: 00e COM NUM: 6
COMMENT: The status of agreement before MPAC [regarding input values for use in FISHPASS model] is summarized in the affidavit of Stephanie Burchfield, filed in the case of Idaho v. Herrington, 86-7704, 86-7705, is herein incorporated by reference.

RESPONSE: No response needed in the IDU Final EIS. This affidavit is incorporated in the Administrative Record and will be considered at the time of the decision.

LTR NO: TIE-2-121 ISS NUM: 00f COM NUM: 3
COMMENT: In months of great surplus, nuclear plant generation may be reduced.

RESPONSE: Nuclear plants are baseload resources and, as such, are typically not displaced since their features make short term displacement impractical. Also, since much of the operating cost of nuclear power is fixed, the savings due to displacement would be small.

LTR NO: TIE-2-121 ISS NUM: 00f COM NUM: 4
COMMENT: To assign capacity sales to the Intertie expansion is improper since these sales may be transmitted over existing lines.

RESPONSE: The intent of the additional capacity sale was to address the possibility of new contracts being dependent upon completion of additional Intertie capacity.

LTR NO: TIE-2-127 ISS NUM: 00f COM NUM: 9
COMMENT: BPA's Administrator's Decision Document and IDU EIS should either unequivocally state that no transaction has been identified that causes significant environmental impact or BPA should identify a contract type and associated quantity that could result in significant environmental impacts.

RESPONSE: BPA has expanded its analysis of contract configurations to include substantial levels of exchange contracts. It is believed that the range of analysis comprehends any likely combination of contract scenarios. Attempting to identify that point at which a contract amount of a particular type produces a "significant" environmental impact is not practical. There would undoubtedly be substantial disagreement not only over the method of analysis but also with regard to the determination of the level of impact representing significance.

LTR NO: TIE-2-127 ISS NUM: 00f COM NUM: 20
COMMENT: Explain how the rate structure itself contributes to reduced environmental impact.

RESPONSE: While studies using the new variable nonfirm rate are showing reduced incremental impacts, this does not imply that the rate structure itself is contributing to reduced impacts. It is not possible to draw conclusions about the effects of the variable rate by comparing incremental values alone.

LTR NO: TIE-2-126 ISS NUM: 01a COM NUM: 4
COMMENT: Why is the Exportable Agreement now assumed to lapse?

RESPONSE: The exportable agreement will expire January 1, 1989. There are no plans at this time to replace the agreement.

LTR NO: TIE-2-127 ISS NUM: 01a COM NUM: 4
COMMENT: PG&E thinks that BPA's modeling understates the period during a year that both Conditions 1 and 2 are in effect. PG&E has observed that BPA declares Condition 2 in effect during periods when the energy available to fill the Intertie can be sustained for the next day but not necessarily more than one day. The result is that while BPA is ostensibly allocating the Intertie, it is in effect allocating the California market.

RESPONSE: See response to comment TIE-2-127, 01a, 6, below.

LTR NO: TIE-2-127 ISS NUM: 01a COM NUM: 6
COMMENT: BPA should assume that Condition 2 can occur at levels of surplus energy availability well below Intertie capacity and even below the California market. Resource operation and marketing impacts under allocated conditions should be represented at surplus energy levels as low as 50 percent of Intertie capacity. BPA should further recognize that

hydro-based energy will most likely serve the available market, particularly while oil and gas prices are low, so long as hydro conditions are not well below normal.

RESPONSE: Since SAM is a monthly model, it does not reflect the possible fluctuations in streamflows within a month. Therefore, SAM does underestimate the frequency of Conditions 1 and 2. This is a model limitation that we accepted when we chose to use SAM.

Another model limitation is that SAM is a regional model. Therefore, it does not model the intertie allocation process between Pacific Northwest utilities and the possible games they might play.

These limitations are true in modeling the Proposed Policy as well as the Hydro First and Pre-IAP policies. If we did have an hourly multi-utility model for the Pacific Northwest, it is not obvious that the incremental differences between the policies using such a model would be different from those obtained by using SAM.

If we used a criteria in SAM for determining Condition 2 that you have suggested (50 percent of the Intertie less than or equal to the surplus), the only effect in SAM results would be to reduce BC Hydro's access to the Intertie. From your discussion it would seem that such a criteria is only appropriate when the available SW market is less than the intertie size. This is true only in the early years of the study. There would be little effect on the Pacific Northwest sales to the Pacific Southwest from SAM, since SAM is a regional model. Therefore, the impact of your proposed change would be small on the overall study results. We recognize this area of the model could be improved but we have yet to find an appropriate way to enhance the model short of converting it into an hourly model.

In response to your comment that BPA should recognize that hydro based energy will most likely serve the market, we agree. Hydro block one (use or lose hydro) is dispatched in SAM before any displaceable thermal plants in all the IAP alternatives. This is the majority of the hydro available. However, hydro block two (store or sell secondary) is potentially dispatched differently between the IAP alternatives because of differences in BPA's access to the Intertie and the available hydro conditions.

LTR NO: TIE-2-126 ISS NUM: 01b COM NUM: 5
COMMENT: Page 4: Describe the origin of the assumptions underlying the treatment of the various scenarios of Firm Marketing. Why should the expansion of Intertie capacity automatically be associated with a 600 MW increase in firm sales?

RESPONSE: The contract assumptions in the IDU Draft EIS were criticized for not covering the full range of probable long term firm power contract possibilities. Therefore, BPA revised its contract assumptions to include a wider variety of contracts. A separate analysis of the impacts of allowing assured access was also needed. The intent of the additional capacity sale was to address the possibility of new contracts being dependent upon completion of additional intertie capacity.

LTR NO: TIE-2-126 ISS NUM: 01b COM NUM: 6
COMMENT: What is the mix of firm power sales, seasonal exchanges, capacity purchases and other transactions that comprise each of the three levels of marketing proposed?

RESPONSE: See Volume 4, Appendix B, Part 4 of the Final EIS.

LTR NO: TIE-2-127 ISS NUM: 01b COM NUM: 7
COMMENT: Page 4, PG&E requests that BPA describe the amounts, types, and terms of various power contracts assumed; demonstrate that either the type of contract makes no difference on environmental impacts or that BPA's generic mix reasonably approximates a worst-case set for environmental impact.

RESPONSE: See Chapter 4 of Volume 1 and Appendix B, Part 4 of Volume 4 of the Final EIS.

LTR NO: TIE-2-127 ISS NUM: 01b COM NUM: 8
COMMENT: The scope of BPA's firm marketing environmental impact assessment should recognize the expressed marketing interests of Pacific Northwest utilities. No utility should have to face the prospect that it could be denied transmission access for the transactions it desires because BPA failed to study it in its environmental impact review.

RESPONSE: The scope of BPA's firm marketing analyses has been expanded to include all types of transactions believed to be desired by Pacific Northwest utilities. Please see the discussion of the firm contracts analyses presented throughout Volume 1, Chapter 4, and in Volume 4, Appendix B, Part 4.

LTR NO: TIE-2-118 ISS NUM: 02a COM NUM: 1
COMMENT: No analyses are made of the potential impacts that seasonal firm power exchanges may have on the hydrosystem. We suggest studies as outlined in Hec Durocher's November 12, 1987, letter to you. We recommend adding one additional case to the analysis consisting of 3000 MW of seasonal exchanges.

RESPONSE: Seasonal exchange studies of up to 1000 MW of capacity and 500 MW of energy have been completed by a PNUCC work group and a report has been published. Additionally, the IDU studies included analyses of firm contract configurations including amounts of seasonal exchange ranging from 425 MW to 1,175 MW. (See Appendix B, Part 4.)

LTR NO: TIE-2-118 ISS NUM: 02a COM NUM: 3
COMMENT: We believe the feasibility analysis of the 3rd AC should assume that the principal uses of an Intertie will be for exchanges and additional sales of nonfirm energy.

RESPONSE: Intertie analyses were done under different contract cases to cover a range of possible uses. These vary from a case with primarily nonfirm sales to a case with 3150 MW of additional firm contracts, 1200 MW of which are types of exchanges.

LTR NO: TIE-2-118 ISS NUM: 02a COM NUM: 4
COMMENT: Updated estimates of oil and gas prices should be used in the analysis.

RESPONSE: Results presented in the IDU Final EIS are based on BPA's January 1987 medium gas and oil price forecasts.

LTR NO: TIE-2-121 ISS NUM: 02a COM NUM: 2
COMMENT: BPA can not evaluate the system's ability to export 7900 MW and serve regional markets without making hourly simulations.

RESPONSE: We do not have the modeling capability to perform the IDU Final EIS analysis on an hourly basis. However, we have examined capacity in detail and believe the Pacific Northwest does have sufficient capacity to support a 7900 MW intertie.

LTR NO: TIE-2-123 ISS NUM: 02a COM NUM: 1
COMMENT: The FISHPASS model should not be used to make precise predictions of future smolt survival rates for the "with" and "without" project scenarios. FISHPASS should be used for comparative purposes only. "It seems inappropriate" [for BPA] "to assume that the survival rates which are projected by FISHPASS are numerically accurate when a substantial portion of the input data is considered valuable for comparative purposes only."

RESPONSE: BPA agrees with the comment that FISHPASS results should only be used for comparative purposes due to the variability of the model's input data. In the anadromous fish passage analyses for the IDU EIS and Hydro Operations Issue Paper (HOIP), the FISHPASS model was only used in a comparative mode. The analyses focus on the relative change in survival between the No Action case, and the alternative or alternatives being analyzed. In this manner, the variances in model input data are minimized.

LTR NO: TIE-2-124 ISS NUM: 02a COM NUM: 6
COMMENT: The information paper displays fisheries impacts and "flagging criteria" in purportedly precise terms. This approach masks the pervasive uncertainty of FISHPASS and SAM modeling.

RESPONSE: It is not BPA's intent to overstate the certainty of the impacts predicted by the SAM and FISHPASS models. The IDU Final EIS fully discusses, in qualitative terms, the variability associated with modeling output as well as the results of further, extensive sensitivity tests of model variables.

LTR NO: TIE-2-126 ISS NUM: 02a COM NUM: 7
COMMENT: Page 5, Figure 1: Why were only 20 of the possible 36 combinations of scenarios chosen for examination?

RESPONSE: Please see the Introduction for Volume 1, Chapter 4 of the Final EIS, for a discussion of why BPA chose to analyze only 20 of the possible 36 combinations of Intertie options scenarios.

LTR NO: TIE-2-126 ISS NUM: 02a COM NUM: 8
COMMENT: Page 5: How do the results of the SAM runs and, therefore, the FISHPASS runs change over the four discrete years examined?

RESPONSE: The impact to anadromous fish passage of various Intertie alternatives varies by stock and by contract year. There is no clear trend for all stocks through the years. The IDU Final EIS displays the survival changes for all fish stocks for all 4 years examined.

LTR NO: TIE-2-126 ISS NUM: 02a COM NUM: 15
COMMENT: What increase in uncertainty was caused by only using the first 40 of the 200 runs for each year? Would the use of historical [within month] flow shapes other than those for 1986 have given substantially different results?

RESPONSE: The 40 random simulations of relative changes in fish survival provide a 90 percent confidence level that at least 91 percent of the population lies between the highest and lowest values of the sample of survival changes (simulations) for that year of analysis (Somerville, 1985). Additionally, there were 4 years of 40 simulations (3 years for capacity alternatives) providing a total of 160 (120 capacity) independent fish survival simulations for each IDU alternative which significantly increases the range and confidence level of the analyses. Sensitivity analyses were also performed comparing the survival changes for 40 versus 200 simulations which show 40 simulations is an adequate sample for analyzing changes in survival between two alternatives (see Volume 4, Appendix E, Part 4).

The flow modulator values within FISHPASS for shaping the period average flow values (monthly except April and August which are split) into daily values have very little effect on changes in survival between different IDU alternatives. These values effect only the daily fish distribution timing within a

period. They do not effect daily spill rates which are the major fish passage parameter changing between two IDU alternatives being compared. Sensitivity studies by the Council's Mainstem Fish Passage Advisory Committee (1986) showed that changes in daily fish passage distribution had very little effect on FISHPASS survival rates. A FISHPASS sensitivity study using substantially different flow modulator values showed very minor changes in fish survival rates (Harper, 1987).

Additionally, FISHPASS sensitivity studies for the IDU Final EIS (Volume 1, Section 4.2.3.4.1) show that changes in much more sensitive parameters (i.e., reservoir mortality, spill efficiency, etc.) have little effect on the relative changes in survival between two alternatives.

LTR NO: TIE-2-126 ISS NUM: 02a COM NUM: 17
COMMENT: Page B-1: What is meant by "a no action base case survival?"

RESPONSE: By "no action base case survival," BPA means the survival of a fish stock through the hydrosystem in a "without project" condition. This is the future condition assuming no Intertie size or policy changes, but with all other expected actions such as fish bypass systems installation.

LTR NO: TIE-2-126 ISS NUM: 02a COM NUM: 19
COMMENT: The study years in the draft EIS were 1987, 1992, 1997, and 2002 while in the latest version each of these years was incremented by 1 year. This process seems reasonable with respect to the first year of the simulation but for each of the three "out years" precludes a direct month-by-month comparison of results.

RESPONSE: The number of data updates and changes in modeling in response to reviewer comments would preclude an effective month-by-month comparison of the results of the IDU Draft EIS with those of the IDU Final EIS. Therefore, there is little justification for maintaining the same study years for the purpose of enabling such comparisons. Also, because the start of the study was incremented by one year, incrementing the study years by 1 year gives the same random water conditions for each of the study years.

LTR NO: TIE-2-127 ISS NUM: 02a COM NUM: 10
COMMENT: Recognize and consider the limitations inherent in the modeling process. Recognize a degree of utility independence. Recognize possible associated impacts.

RESPONSE: BPA acknowledges the limitations inherent in its modeling process as well as the ability of other utilities to make decisions in an independent manner. The goal of BPA's analyses was to analyze a range of scenarios within which

these uncontrolled factors would fall. The results presented in the IDU EIS are recognized as projections rather than facts. BPA is well aware of the errors that can occur in forecasts of whatever type. This error factor will be taken into account in arriving at the Intertie decisions.

LTR NO: TIE-2-127 ISS NUM: 02a COM NUM: 11
COMMENT: BPA's use of four selected forecast years suggests BPA ought to at least spot test other years to assure that results in one year are not due to something unique in the modeling for that year.

RESPONSE: SAM was run for 20 years, but due to the enormity of data, only four years were selected to be analyzed in depth. In examining those four years the data has been scrutinized in detail. We have also compared the operations between the years and believe if there was anything unique to one year we would have found and corrected for it.

LTR NO: TIE-2-127 ISS NUM: 02a COM NUM: 12
COMMENT: BPA's statement that it selected for discussion "the changes that have been of greatest importance in terms of their effect on the best study results" is confusing. This suggests that BPA's evaluation centers on cases which already showed little impact. Of greater significance would be the changes that had the most effect on conditions previously identified.

RESPONSE: The reference to "best" study results is confusing and was an inadvertent error in the text. In fact, BPA made every effort to look at decision combinations that defined the full range of potential effects, as well as those that represent likely outcomes within that range. For a full discussion of the criteria used to select scenarios for study, see the beginning of Chapter 4, Volume 1, IDU Final EIS.

LTR NO: TIE-2-127 ISS NUM: 02a COM NUM: 13
COMMENT: McNary 100-Percent Flow Limitation. [What does this] Mean in terms of actual marketing impact. BPA describes this limitation as affecting "discretionary" nonfirm energy sales in winter through early summer. Does BPA's model consider a nonfirm sale in January or February to be discretionary, even though if such power is not sold it may be spilled later. Is a sale that looks discretionary to the model in reality a spill condition sale to the system operator who acts on the best information available at the time?

RESPONSE: In earlier runs, SAM operated the hydroelectric system down to the energy content curve to market nonfirm power. This logic provides a reasonable hydro operation under most conditions.

The problem that arose in the latest studies occurred in the winter months under medium high flows with large Interties and large California markets. Under these conditions, the hydro system in total is drafted quite heavily to supply the total market. This heavy draft out of Grand Coulee and other upstream projects increased flow levels above turbine capacity at downstream projects causing significant amounts of forced spill at those projects. (Some games forced an excess of 500 MW-months in January and February.) Since this hydro operation was discretionary, and the system was below upper rule curve (flood control), it was unreasonable to force this much spill at this time of year.

This is not to be confused with heavy flow conditions which force significant spill to get the system down to upper rule curve.

This operation was damaging to fish (because of flow decreases in subsequent months) and resulted in a less economic operation than was probable. Furthermore, such operation is inconsistent with BPA's actual operating procedures. Therefore, the model was revised to limit flows in the lower Columbia for discretionary nonfirm sales to no more than 100 percent of the turbine capacity of McNary. This limitation eliminates large amounts of forced spill resulting from discretionary nonfirm sales in winter months.

LTR NO: TIE-2-127 ISS NUM: 02a COM NUM: 14
COMMENT: (P. 14) Because this assumption appears to be one of the most important, BPA should study at what point (i.e., what level of allowed spill at McNary) significant environmental impacts will occur. Then the likelihood of spill should be reassessed in light of the observations above.

RESPONSE: See response to comment TIE-2-127, 02a, 13. Limiting the flows to less than 100 percent generation at McNary in the winter increases the likelihood of forced spill later in the year. This produces a non-economic operation. This correction to the model is consistent with good operating practices for fish, economics, and flood control.

LTR NO: TIE-2-127 ISS NUM: 02a COM NUM: 15
COMMENT: BPA should clearly describe how its variable nonfirm rate influenced modeling results compared with its predecessor.

RESPONSE: The difference between the fixed rate logic in SAM and the variable rate logic has to do with how hydro block two (store or sell secondary) is dispatched. Under the fixed rate scenario hydro block two was assigned a dispatch price equal to BPA's standard rate. With the variable rate the dispatch price of hydro block two is based on the SW market price but is no larger than BPA's standard rate and no lower than the

low cost thermal displacement rate. Each month in SAM the forecasted surplus is compared to the SW demand curve and hydro block two is priced at whatever price is necessary to get it sold, but bounded by the above bounds. Therefore, in the IDU Final EIS studies the fixed and variable rate logic is the same in the later years when the SW market is above BPA's standard rate. It is in the earlier years when the standard rate is above the SW market demand curve that the hydro is dispatched differently.

LTR NO: TIE-2-127 ISS NUM: 02a COM NUM: 16
COMMENT: Describe what the marketing and pricing logic is and provide an evaluation of how well this compares to experience.

RESPONSE: The IDU Draft EIS had a description of SAM's modeling and pricing logic. The Final EIS also has a description of this logic in Volume 4, Appendix B and Appendix I at 1.5.2. The derivation of the logic is based on actual experience. However, due to the complexity of the process, actual data from recent years has not been used to test SAM's logic.

LTR NO: TIE-2-127 ISS NUM: 02a COM NUM: 17
COMMENT: BPA incorrectly characterizes the effect of lower fossil fuel prices on California utilities. Lower fuel prices do not reduce the demand or the market to displace oil and gas generation.

RESPONSE: As stated, lower fuel prices do not reduce California utilities' demand for oil and gas displacement. They do, however, reduce the price the utilities are willing to pay for this displacement. The California market is a function of both demand and price. Thus, lower fuel prices do result in the Pacific Northwest serving the California market less often, or insofar as the Pacific Northwest is concerned, in a decreased California market.

LTR NO: TIE-2-128 ISS NUM: 02a COM NUM: 3
COMMENT: PNUCC strongly supports this comparison of the long-term benefits of all Columbia Basin fisheries mitigation or enhancement measures to potential impacts resulting from use of the existing Columbia River hydro system for any energy management purposes including use of an expanded Intertie. On a relative basis, the possible impacts of Intertie use and development are not significant. The FISHPASS model input data are so uncertain that BPA cannot estimate benefits or impacts with the accuracy suggested in the IDU Draft EIS and the Information Paper. Where the results are compared in order of magnitude, PNUCC agrees that such a comparison can be informative.

RESPONSE: BPA will determine whether impacts of the Intertie alternatives are significant upon completion of analysis for the IDU Final EIS. As to the accuracy of the FISHPASS model, BPA believes there is some uncertainty associated with model results (see response to comment TIE-2-123, 04b, 2); but for comparative purposes the model provides important information. BPA has chosen to report the model results as achieved without suggesting the accuracy in these results. We agree the model results are very informative when comparing Intertie effects to impacts of expected fish passage measures.

LTR NO: TIE-2-128 ISS NUM: 02a COM NUM: 4
COMMENT: BPA's implication that the logic in SAM was responsible for the faulty simulation of regional marketing strategies in earlier studies is ill-founded. The problems were caused by inappropriate use of the model, rather than by any intrinsic flaw in the model's logic.

RESPONSE: The logic in SAM did not check for large spill conditions when a large market and large Intertie existed in the winter. The logic was updated to restrict the hydro generation to full gate at McNary during these conditions.

LTR NO: TIE-2-129 ISS NUM: 02a COM NUM: 2
COMMENT: There is far too much uncertainty to rely on BPA computer models for smolt safety in the Columbia Basin particularly in view of past oversights.

RESPONSE: BPA believes its modeling procedures are the best available means to analyze potential Intertie impacts on fishery resources.

LTR NO: TIE-2-129 ISS NUM: 02a COM NUM: 4
COMMENT: Apparently we need another model that takes Idaho stocks both wild/natural and hatchery into account.

RESPONSE: BPA believes current modeling procedures and results fully account for potential impacts to wild, natural, and hatchery stocks, as separate populations, to the extent data exist on their passage through the hydrosystem. If future research distinguishes separate timing of migration patterns for wild, natural, and hatchery stocks, then an improved analytical model would be helpful to predict passage impacts.

LTR NO: TIE-2-130 ISS NUM: 02a COM NUM: 2
COMMENT: The paper: continues to ignore the critical, fragile wild stocks of Idaho anadromous fish and dependent economies which could be jeopardized by Bonneville's proposed actions; continues to rely on a computer model that was never designed to and cannot predict the impact of very small changes in uncertain future hydro operations on anadromous fish stocks; continues to compound the already incomprehensible segmentation of interrelated actions.

RESPONSE: For the IDU Final EIS, BPA examines all critical or fragile stocks independently to ensure no oversights. BPA does not rely on flagging criteria for critical stocks. While uncertainty exists with BPA's modeling procedures, we believe the results, combined with sensitivity tests provide the most meaningful data in determining the significance of any Intertie impacts.

The IDU Final EIS analyzes the individual actions of DC Expansion, 3rd AC Intertie, marketing, and the Intertie Access Policy. It also analyzes these actions cumulatively. By using the strategy of "decision packages," the IDU EIS forecasts the effects of a number of alternative future scenarios of Intertie capacity and use. To the extent that these actions are interrelated, they are analyzed together to obtain an overall picture of their environmental effects.

LTR NO: TIE-2-132 ISS NUM: 02a COM NUM: 2
COMMENT: Changes in the Analysis Between Draft EIS and Current Studies should reference Appendix B which explains these changes in assumptions and in computer logic.

RESPONSE: The Changes in Analysis section does reference Appendix B. See paragraph 3.

LTR NO: TIE-2-139 ISS NUM: 02a COM NUM: 1
COMMENT: We do not consider appropriate the use of percentages to establish "flagging criteria." Use an absolute number of fish as the "flagging criteria" so that your intent is clearly identifiable.

RESPONSE: BPA has chosen to use "change in percentage survival" rather than numbers of juvenile fish lost as the appropriate statistic to measure impact for two primary reasons. First, on a stock by stock basis, number of smolts at risk due to the hydrosystem is not known. Therefore, the reduction in these numbers cannot be calculated. Approximations of total smolts lost through the hydrosystem can be calculated, with stocks aggregated, however, BPA believes this would mask effects to individual stocks.

Secondly, BPA believes that for upriver fish stocks, the loss in stock productivity due to hydroelectric-caused mortality is the greater concern than just absolute numbers of fish. For degraded stocks to be effectively rehabilitated or impacted adversely, changes in productivity are the primary concern. The change in relative survival measured as a percent provides this information.

For healthy fish stocks, which are harvested to a considerable degree, a significant reduction in passage survival would correlate with a large numerical loss of smolts and

corresponding reduction in fisheries. In these cases, absolute numbers of smolts lost would be very relevant. BPA has included this as one of its criteria for judging significance. With respect to Intertie alternatives, BPA is not seeing these types of impacts.

LTR NO: TIE-2-139 ISS NUM: 02a COM NUM: 6
COMMENT: Page 7: Using McNary to define the forced spill limit may be too restrictive.

RESPONSE: Although this operation is more restrictive on the ability to produce such sales, it is closer to the actual operation of the system. We feel that this is not too restrictive and actually results in improved economics.

LTR NO: TIE-2-139 ISS NUM: 02a COM NUM: 7
COMMENT: Page 9, 2nd paragraph: Since surplus situations will not exist after [2006] it would seem logical to extend the time horizon.

RESPONSE: The Pacific Northwest region reaches load/resource balance prior to 1998 so the study horizon already includes situations without firm surplus.

LTR NO: TIE-2-124 ISS NUM: 02b COM NUM: 7
COMMENT: This office, fisheries agencies, and tribes have requested changes in the fisheries analysis designed to take uncertainties into account. We have requested that BPA test a range of possible survival results. (See e.g., Letter from S. Timothy Wapato to Stephen Smith, August 4, 1986). We have requested a full sensitivity analysis of FISHPASS. We have requested that BPA devise ways of verifying the accuracy of FISHPASS or develop alternative methodologies as a cross-check for FISHPASS results. To date, BPA has not fully complied with any of these requests.

RESPONSE: BPA has appreciated the assistance provided by fishery entities in development of the SAM/FISHPASS tool to analyze the potential effects of Intertie options. BPA agrees that uncertainties in model capabilities must be accounted for in judging the importance of modeling results. BPA has performed extensive sensitivity analyses, focusing on those parameters for which model results are most sensitive and/or for which confidence in the accuracy of parameter values is lowest. "Full sensitivity analysis of FISHPASS" and "verifying the accuracy of FISHPASS" as requested by fishery entities has been found by BPA to be either unreasonable or impossible.

LTR NO: TIE-2-124 ISS NUM: 02b COM NUM: 8
COMMENT: The number of stocks exceeding the "flagging" criteria for the DC Expansion Project has gone from 4 to 7 to 40 to 2 at the various stages of BPA's environmental analysis over the last

16 months. These violent swings in output raise serious questions regarding the reliability of the analytical tools that BPA has employed.

RESPONSE: The SAM and FISHPASS models used by BPA are complex and require careful attention in their use. In responding to public comments and changing power, economic, and fishery conditions, BPA has strived to assure its IDU assessment techniques reflect the most current state of knowledge. In doing so, mistakes are occasionally made that are not realized in sufficient time to allow ongoing and frequent disclosure of model results to the public. The goals of providing timely public access to information and assuring careful review of analytical results can conflict. The changes in numbers of flagged fish stocks for which there is concern reflects this conflict. BPA has undertaken thorough review of its modeling procedures and is confident that the current results are accurate and reflect our ability to model potential impacts using current knowledge and assessment techniques.

The changes in the number of flagged stocks did not indicate "violent swings in output" but reflect the high sensitivity of the flagging criteria to indications of the need for additional significance analyses (i.e., small changes in output flagged a large number of additional stocks for further analysis.

Additionally, the number of fish stocks to which BPA has been applying its fish passage survival has also been changing based on continued public comments. There is considerable variability in what the public believes are separate and distinct fish stocks for which protection from hydrosystem operation and harvest management should be considered.

LTR NO: TIE-2-126 ISS NUM: 02b COM NUM: 18
COMMENT: Page B-4: What is the actual change in the availability and utilization of the BCH generation from the draft to the latest version of the analysis?

RESPONSE: The IDU Draft EIS amount of BC Hydro exports to California and the Pacific Northwest is smaller than what is observed in the IDU Final EIS analysis. A comparison of capacity effects (see page 4.2-10, IDU Draft EIS) at maximum Intertie in 1992 shows total export sales of 130 MWs to California; in the IDU Final EIS analysis 474 MWs of export sales were made. BC Hydro sales to the Pacific Northwest, using the same parameters, had 36 MWs of total export sales in the Draft and 108 MWs in the Final analysis. For further explanation of BC Hydro logic changes made since the Draft, see Volume 4, Appendix B - Modeling Changes.

LTR NO: TIE-2-127 ISS NUM: 02b COM NUM: 18
COMMENT: Describe some of the major limitations associated with its models and attempt to choose assumptions that will not miss potential significant impacts.

RESPONSE: Certain System Analysis Model input assumptions strongly impact the results of the analyses. Primary among these are the Pacific Northwest load forecast, the Pacific Southwest load forecast, and the Pacific Southwest gas and oil forecast. Because of the uncertainty involved in these assumptions, sensitivity analyses are included in the IDU Final EIS. The IDU Final EIS also describes, in qualitative terms, the limitations of the FISHPASS model. Results of sensitivity runs of major parameters are included in the Final EIS.

LTR NO: TIE-2-128 ISS NUM: 02b COM NUM: 6
COMMENT: PNUCC finds no basis for the change in the estimate of reservoir mortality (from the IDU Draft EIS) at Mid-Columbia projects from 0.7 percent per day to 3.5 percent per day.

RESPONSE: BPA received comments from the National Marine Fisheries Service questioning the value of 0.7 percent mortality per day which was used in the Draft EIS analyses. Upon review of testimony in the proceedings for the FERC Mid-Columbia Stipulation Agreement, it was decided to increase the rate to 3.5 percent per day. This value was the average of the mortality rates referred to in the proceedings, and when applied to the flow-travel time relationships being used in FISHPASS it provided overall project mortalities consistent with the range of reservoir mortalities being reported by all parties. This rate of reservoir mortality converted to a flow versus mortality relationship is still less than the rates used at Federal projects on the Columbia and Snake rivers. Sensitivity analyses of reservoir mortality rates in the Final EIS (Section 4.2.3.4.1) show that major changes in the mortality rate have very minor effects on the comparative results of the FISHPASS analyses.

LTR NO: TIE-2-130 ISS NUM: 02b COM NUM: 6
COMMENT: Page 9, para. 3: The SAM model was designed to simulate for comparative purposes the gross implications of very broad changes in hydro system operations. These simulations are then input to yet another computer model, FISHPASS. Bonneville proceeds to compound its error by speculating: (a) that its projected worst-case decrease in mean survival is not significant, and that in any event; (b) any decrease would be offset by proposed improvements in survival projected to result from future improvements in juvenile bypass facilities at hydroelectric projects under the Columbia River Basin Fish and Wildlife Program. We disagree on all counts.

RESPONSE: Please refer to responses to comments TIE-2-123, 04b, 3 and TIE-2-124, 02b, 7.

LTR NO: TIE-2-135 ISS NUM: 02b COM NUM: 4
COMMENT: If BPA intends to continue to place such heavy reliance on the FISHPASS model, it must account for the wide variation in input values by considering the consequences of intertie upgrades when alternative input values are utilized.

RESPONSE: BPA conducted several sensitivity tests to account for the variation in input values. These tests encompass those parameters for which research data are thought to be highly variable and for parameters for which model results are most sensitive.

LTR NO: TIE-2-135 ISS NUM: 02b COM NUM: 10
COMMENT: Fish transport assumptions ignore the observed mortality rates.

RESPONSE: BPA believes it has used the appropriate survival values for steelhead and spring chinook in transportation. Controversy exists as to whether significant post-transportation mortality occurs that is not accounted for by the above values. Given this concern, BPA has performed a sensitivity test that assumes a 50 percent post-transportation mortality.

LTR NO: TIE-2-126 ISS NUM: 02c COM NUM: 1
COMMENT: Nowhere is there detailed data as to what the new and replaced data are, what justifications and explanations are associated with the changes in assumptions and what are the individual impacts of the modeling corrections and modifications.

RESPONSE: BPA's primary purpose must be to analyze the environmental effects of its decisions on the environment. An effort has been made to identify changes in the analysis having the greatest impact on results. However, detailed analysis of how each change in analysis affects results is beyond the purpose of the EIS.

LTR NO: TIE-2-126 ISS NUM: 02c COM NUM: 2
COMMENT: To provide the possibility of an informed assessment of the adequacy of the IDU EIS, we recommend that a detailed report be prepared that provides the information necessary to comprehend the report.

RESPONSE: A discussion of BPA's modeling changes and how they affected results is presented in Volume 4, Appendix B, Part 3. Due to the complexity of the IDU analyses, an exhaustive analysis and explanation of the effects of each modeling change on results would have consumed an unreasonable amount of staff effort and space in this document. Some additional information on the effects of modeling changes on study results may be obtained from BPA on request. This data is considered technical

documentation and will not be generally distributed. Supporting information is contained in Appendices and a list of technical documentation, available upon request, is provided at the beginning of Volume 4.

LTR NO: TIE-2-126 ISS NUM: 02c COM NUM: 10
COMMENT: Pages 6 & 7: Provide a comparison of the shape of the California demand curve by month by year in the 1985 analysis and in the latest analysis that reflects an updated oil/gas price forecast and CFM-VI load forecasts.

RESPONSE: Two graphs, one titled "Comparisons of California's Load and Resource Forecasts (CFM-V, 1984 and CFM-VI,1985)" and the second titled "PSW Gas Price Forecast - Draft and Final IDU EIS" can be found in Volume 4, Appendix I of the IDU Final EIS. One graph compares Pacific Southwest load forecasts and the second compares Pacific Southwest gas price forecasts between the IDU Draft EIS and IDU Final EIS.

LTR NO: TIE-2-127 ISS NUM: 02c COM NUM: 2
COMMENT: PG&E would have found it helpful if BPA had described further how the modeling changes had affected results, particularly compared to BPA's July 1987 studies.

RESPONSE: Additional clarification on key modeling assumptions is in the IDU Final EIS, Volume 4, Appendix B. See also the response to comment TIE-2-126, 02c, 1.

LTR NO: TIE-2-127 ISS NUM: 02c COM NUM: 3
COMMENT: Because PG&E cannot clearly understand the significance of the individual modeling changes on the results and on the conclusions, PG&E requests that BPA's Record of Decision (ROD) on the LTIAP and the IDU Final EIS further clarify the significance of key modeling assumptions.

RESPONSE: Additional clarification on key modeling assumptions is in the IDU Final EIS.

LTR NO: TIE-2-127 ISS NUM: 02c COM NUM: 22
COMMENT: Provide data showing the separate Pacific Northwest hydro and thermal generation quantities and the prices at which power is sold under each of the alternative cases.

RESPONSE: Pacific Northwest hydro and thermal generation quantities are contained in the IDU Final EIS. The price at which power is sold depends on such things as the resource being operated, the condition of the Intertie, the market being served, and the type of power being sold (nonfirm or firm surplus). There are no post-processors available to provide this information for specific resources or simulations.

LTR NO: TIE-2-131 ISS NUM: 02c COM NUM: 2
COMMENT: There is no information on fish guidance effectiveness, fish bypass construction schedules, the upcoming annual U.S. Corps of Engineers Spill Program, and the continuation of spill after bypass installation. Benefits to result from the fish programs are unsubstantiated.

RESPONSE: The IDU Final EIS contains documentation of all the parameter values used in modeling runs and sensitivity tests, including fish guidance effectiveness, construction schedules, and the 1987 sliding scale spill program in Volume 4, Appendix E, Part 3. In modeling, spill is not included as continuing beyond bypass construction. The benefits of planned fish improvement measures are substantiated through the use of modeling techniques. BPA believes these estimates are realistic and are consistent with the support and justification for implementing these improvements.

LTR NO: TIE-2-132 ISS NUM: 02c COM NUM: 3
COMMENT: On page 11, the last paragraph describes how hydro generation increases with increased Intertie capacity. A more detailed quantification of these effects would be helpful. We recommend the addition of a table comparing the new results with those shown in Table 4.2.3 of the original IDU Draft EIS.

RESPONSE: Tables in the IDU Final EIS are similar in structure to those in the IDU Draft EIS. Differences in the table entries are due to changes in modeling and data inputs.

LTR NO: TIE-2-132 ISS NUM: 02c COM NUM: 4
COMMENT: Page B-4: We recommend the inclusion of a table showing how these new resources come on line in this analysis.

RESPONSE: The two nuclear plants were brought on line when the region faced a deficit approximating half of the total capability of each of these plants, or about 400 aMW. This methodology resulted in WNP-3 being brought on nearly always in 1999 and WNP-1 in 2004. Only a few cases caused deviation from these dates. A generic purchase contract was assumed to provide the power required to meet deficits prior to the introduction of these baseload plants.

LTR NO: TIE-2-132 ISS NUM: 02c COM NUM: 5
COMMENT: Initialization of Centralia Coal Pile Logic: Page B-5: The term "too large" needs to be defined.

RESPONSE: SAM places the Centralia plant on must-run status whenever the amount of coal stored exceeds an amount which would generate 5000 MW-mos in one year of full operation.

LTR NO: TIE-2-132 ISS NUM: 02c COM NUM: 6

COMMENT: Oil and Gas Price Forecast; California Load Forecast; Variable and Fixed Operating Costs of Existing Resources; Rates for Nonfirm and Firm Surplus; and Pacific Northwest Load Forecast. All these sections (paragraphs 5 & 6 on page B-5 and paragraphs 3, 4, and 5 on page B-6) need tables comparing the inputs used in the original IDU EIS and the inputs used in these new analyses.

RESPONSE: Comparison for the Oil and Gas Price Forecast, and California Load Forecast can be found in Volume 4, Appendix I, the Variable and Fixed Operating Costs of Existing Resources, and Rates for Nonfirm and Firm Surplus can be found in Appendix B, Part 2. The Pacific Northwest Load Forecast is in Section 4.5.5.

LTR NO: TIE-2-135 ISS NUM: 02c COM NUM: 3

COMMENT: The Hydro Operations Information Paper fails to reasonably account for the amount and complexity of technical information relevant to the issues which are addressed in the document. It would have been preferable for BPA to study a range of model inputs and report the range of model outputs. This effort is required by Council on Environmental Quality regulations.

RESPONSE: The Council on Environmental Quality (CEQ) regulations require a "full and fair discussion of significant environmental impacts" (40 CFR 1502.1). A full multivariate analysis--assuming all combinations of variables--is expensive time-consuming, and unwarranted considering the low likelihood of any particular multivariate combination. Bonneville Power Administration (BPA) has analyzed a reasonable number of scenarios that encompass the full range of likely outcomes.

BPA has used the FISHPASS model to analyze the changes in smolt survival between a no-action case and a variety of Intertie decision scenarios. This type of comparative analysis is not dependent on highly accurate simulations of smolt survival, since errors associated with the natural variability of the dependent relationships are, to a large degree, cancelled out by making the same assumptions for these parameters in both of the alternatives being compared. In these analyses all assumptions are the same for each of the alternatives being compared. Only the river operations (spill and flow) were different as a result of different power marketing actions (hydropower operations resulting from the Intertie). In other words, it is not critical to predict exactly the survival level for each alternative being compared, when the difference in survival levels is the value of concern. It is only critical that, in arriving at the survival values, the calculations use consistent assumptions. BPA's comparative analysis used consistent assumptions for the alternatives that were the best available scientific data confirmed and obtained from independent sources.

Statements referring to the sensitivity of the FISHPASS model and the uncertainty involved with the input parameters are not relevant to the change in survival level between alternatives. Such statements are only relevant to the survival value for a single alternative (absolute value). To show this point, BPA provided a sensitivity analysis of the changes in survival between the DC Upgrade and no-action alternatives. This sensitivity analysis made major changes in the following four input parameter assumptions for which the absolute values of fish survival from FISHPASS were believed to be the most sensitive and which research has shown to have the most variability or uncertainty: fish guidance efficiencies, reservoir mortality, transportation level, and transportation survival. While these changes in assumptions each produced substantial changes in absolute survival for each of the individual alternatives, the change in the difference between survival levels for the two alternatives (with and without the DC Upgrade) was very minor. This is because the absolute survival for each alternative being compared changed approximately the same amount as a result of the different assumptions.

LTR NO: TIE-2-135 ISS NUM: 02c COM NUM: 5
COMMENT: We suggest that BPA conduct studies using lesser FGE values representing the low end of experimental results at existing facilities and display these results in a fashion meaningfully comparable to the analyses it performed with the higher FGE's.

RESPONSE: Significance tests have been performed using both lower and higher fish guidance efficiencies in FISHPASS. These results are displayed and considered in impact assessment in the IDU Final EIS. BPA did not use high values for guidance efficiencies in its modeling.

LTR NO: TIE-2-135 ISS NUM: 02c COM NUM: 7
COMMENT: We believe that it would be prudent for BPA to assess alternative turbine mortality input values. Our concern is heightened by our understanding of how the reservoir mortality inputs for FISHPASS were derived.

RESPONSE: Significance tests have been performed using both 25 percent lower and 25 percent higher turbine mortality values. These results are displayed and considered in the IDU Final EIS.

LTR NO: TIE-2-135 ISS NUM: 02c COM NUM: 8
COMMENT: Analyze an alternative partition where per project survival is considered to be .80 for low flow years, .85 for average flow years, and .89 for high flow years for the series of reach survival studies from 1973 to 1980. Using these assumptions to calculate the shape of the reservoir mortality curves utilized in FISHPASS and then utilizing those new reservoir mortality curves in analysis of Intertie impacts is likely to significantly affect the study outcomes.

RESPONSE: BPA has used what it believes are the best available data on turbine mortality and reservoir mortality. BPA believes it has used this information in the best available assessment technique, FISHPASS. As new data become available on turbine and reservoir mortality and any possible interactions, newer models will need to be developed. It is not reasonable to do this method development at this time. The Final EIS includes sensitivity analyses for reservoir mortality which increase and decrease the most expected values by 50 percent.

LTR NO: TIE-2-135 ISS NUM: 02c COM NUM: 9
COMMENT: Concerns relative to the treatment of reservoir mortality are further heightened by the "input data updates" described at page B-8. This level of information is hardly sufficient to allow us to make meaningful comment.

RESPONSE: BPA has always made its data and assessments available for public viewing and explanation. BPA will again provide these data in the IDU Final EIS.

LTR NO: TIE-2-135 ISS NUM: 02c COM NUM: 11
COMMENT: We recommend that BPA conduct and present for comment alternative analyses which utilize mortality rates of .67 for transportation from Lower Granite and Little Goose dams and .33 for transportation from McNary Dam. Recommend that these analyses utilize alternative inputs described above for reservoir mortality, turbine mortality, fish guidance efficiency, and spill effectiveness.

RESPONSE: BPA has conducted extensive and appropriate sensitivity tests. BPA sees no purpose in reducing survival values for transported fish when data have been collected that show high survival rates. BPA has made and reports one sensitivity test that assumes a 50 percent post-transport mortality level. See Volume 4, Appendix E, Part 6.

LTR NO: TIE-2-135 ISS NUM: 02c COM NUM: 12
COMMENT: In our August 4, 1986 letter we requested that BPA consider alternative spill efficiency values concurrently with changes in other parameters. We refer you to Table 3 in that letter and request that you analyze impacts of Intertie upgrades using the spill efficiency values described therein.

RESPONSE: BPA has performed model analyses using what it believes to be the best available parameter values supported by necessary sensitivity runs. These sensitivity analyses include spill efficiency increases and decreases of 50 percent. We believe these analyses provide BPA and the public with sufficient information from which to estimate the impacts of the Intertie decisions.

LTR NO: TIE-2-135 ISS NUM: 02c COM NUM: 19
COMMENT: Proper and detailed documentation of the FISHPASS model is required.

RESPONSE: The IDU Draft EIS contained documentation of FISHPASS. This has been provided again in the IDU Final EIS. Additionally, BPA has made available to CRITFC considerable amounts of data and documentation. This information has also been provided to CRITFC during Corps of Engineers' spill planning processes.

LTR NO: TIE-2-135 ISS NUM: 02c COM NUM: 20
COMMENT: We recommend that FISHPASS model be tested with contrived data, and more importantly, with historical data to compare model results with actual historical data.

RESPONSE: Verification of FISHPASS with field studies would, if feasible, be very desirable. Unfortunately, fishery entities have stated that studies for the purpose of model verification are low priority and that research design is problematic. BPA will continue to pursue the collection of research data that could have application in system models.

LTR NO: TIE-2-136 ISS NUM: 02c COM NUM: 2
COMMENT: We encourage BPA to expand the discussion regarding effects to anadromous and resident fish.

RESPONSE: The IDU Final EIS contains a more expansive discussion of Intertie effects on fisheries resources.

LTR NO: TIE-2-138 ISS NUM: 02c COM NUM: 3
COMMENT: We are concerned about the apparent omission of a "worst case" condition in the Paper. That the modeling analysis shows a reduction in survival is itself indicative that much greater reductions in survival may actually occur. Present a worst-case analysis, as required by the National Environmental Policy Act.

RESPONSE: BPA believes that what is required is a reasonable assessment of foreseeable environmental effects. Federal agencies only prepare "worst-case scenarios" where information is unknown. 40 C.F.R. §1502.22. Rather than conjure a "worst case," BPA has developed state-of-the art forecast methodology to obtain the best possible information. No "worst-case" is needed because there are no gaps in knowledge. The best available scientific information was used in the analyses and sensitivity tests were performed on the key input parameters.

BPA does not believe that since current analysis shows small survival reductions that much greater reductions may actually occur. BPA has used reasonable parameter values that in actuality may be higher or lower. To assume impacts would have a greater probability of being larger than modeled is

not, we believe, a valid conclusion. They could just as likely be less than modeled. BPA believes it has been conservative in its analysis since, if mortalities are larger than expected, ongoing research and development programs would most likely find means to improve survival as they have done over the past several decades.

LTR NO: TIE-2-138 ISS NUM: 02c COM NUM: 5
COMMENT: What fish guidance efficiencies were used to estimate survival improvements? Does the 40 percent refer to the year 2003? The basis for projected increases should be presented for public review and comment prior to the IDU Final EIS and it should be made clear by what year the improvement is expected.

RESPONSE: The improvement in passage survival due to planned mitigation measures occurs over the period 1988-2003, with most improvement by 1997. These data are displayed in more detail in the IDU Final EIS. The fish guidance efficiencies assumed for these improvements are also contained in the IDU Final EIS. The efficiencies are those used to justify the installation of these improvements. Most are based on research data and are the minimum level acceptable to fishery entities.

LTR NO: TIE-2-138 ISS NUM: 02c COM NUM: 11
COMMENT: Page B-8, paragraph 3: Reservoir mortality for COE project reservoirs is not presented. Assumptions and values that are different from the Draft EIS should be presented and provided for public review and comment.

RESPONSE: The reservoir mortalities used for COE reservoirs are the same as in the IDU Draft EIS.

LTR NO: TIE-2-139 ISS NUM: 02c COM NUM: 2
COMMENT: The findings in this document are presented in narrative form only and more detailed data should be provided to support the position being taken by BPA.

RESPONSE: The Hydro Operations Information Paper was intended as a summary document only. Detailed data concerning the analyses summarized in the Hydro Operations Information Paper are presented throughout the IDU Final EIS.

LTR NO: TIE-2-139 ISS NUM: 02c COM NUM: 9
COMMENT: Page 13: Provide sufficient detail for the reader to determine what criteria were used in these FISHPASS runs.

RESPONSE: The IDU Draft EIS contained the parameters used in FISHPASS. These have been updated and are included in the IDU Final EIS.

LTR NO: TIE-2-139 ISS NUM: 02c COM NUM: 11
COMMENT: Page 16, Table 1; Page 17, Table 2; Page 18, Table 3: Provide the reader with a description of how program benefits (1988-2003) were determined.

RESPONSE: The means by which program benefits (fish bypass improvements) were calculated are included in the IDU Final EIS, Volume 4, Appendix E, Part 5.

LTR NO: TIE-2-140 ISS NUM: 02c COM NUM: 2
COMMENT: Much more summary data needs to be included in the document. The data needed to support the impact conclusions reached on the various alternatives, in most cases, are not included in the document.

RESPONSE: The material in Volume 1 of the IDU Final EIS includes much more summary data than presented in the IDU Draft EIS. More detailed data has been moved to Volume 4, Appendices. A list of additional technical documentation available from BPA on request is identified at the beginning of Volume 4 of the IDU Final EIS.

LTR NO: TIE-2-140 ISS NUM: 02c COM: 11
COMMENT: Page 20, first paragraph, last sentence: This is one example of many where additional information that would normally be included in the Draft EIS is needed to support the statement regarding balanced flow management.

RESPONSE: Considerable discussion on Hanford Reach spawning was in the IDU Draft EIS. The IDU Final EIS also explains this information in detail.

LTR NO: TIE-2-118 ISS NUM: 02d COM NUM: 2
COMMENT: We certainly are not comfortable with a net present value of benefits, both for the entire Pacific Northwest and the Southwest, of only $187 million over the 45-year study period.

RESPONSE: The IDU Final EIS contains an updated analysis of the economics of Intertie expansion. Project benefits now appear substantially greater. See Volume 1, Section 4.5, of the IDU Final EIS.

LTR NO: TIE-2-124 ISS NUM: 02d COM NUM: 14
COMMENT: BPA must reassess the economics of Intertie expansions. The information paper presents no economic analysis of either the DC Expansion Project or the Third AC Intertie.

RESPONSE: The IDU Final EIS contains an updated analysis of the economics of Intertie expansion in Volume 1, Section 4.5.

LTR NO: TIE-2-124 ISS NUM: 02d COM NUM: 15
COMMENT: The collapse of oil and gas prices since early 1986 has driven the price of Northwest surplus power sharply lower.

RESPONSE: The results presented in the IDU Final EIS are based on a more recent projection of oil and gas prices.

LTR NO: TIE-2-124 ISS NUM: 02d COM NUM: 16
COMMENT: BPA should give thorough consideration to abandoning or deferring Intertie expansions given current economic conditions.

RESPONSE: BPA's current analyses demonstrate positive economic benefits due to Intertie expansions. These results are presented in the IDU Final EIS, Volume 1, Section 4.5.

LTR NO: TIE-2-129 ISS NUM: 02d COM NUM: 6
COMMENT: The last alarming assumption made in the document is that the economics of Intertie are "cast in stone." The DC Intertie alone costs $105 million dollars and cost benefits have not been done in over a year of falling energy prices.

RESPONSE: The IDU Final EIS contains an updated analysis of the economics of Intertie expansion in Volume 4, Section 4.5 and Appendix I.

LTR NO: TIE-2-121 ISS NUM: 03a COM NUM: 5
COMMENT: Intertie expansions will tend to "bounce" water levels in free-flowing reaches and near tailwaters.

RESPONSE: "Bouncing" occurs when discharge at a project is changed by a large amount over a short period of time. This generally occurs in the forebay of a dam and is on the order of a few tenths of a foot. It is not expected that this will be a problem with Intertie upgrades because most of the additional hydro generation which occurs will come from the conversion of spill to generation without much effect on discharge. There may be some flow changes on a short-term basis at Columbia River projects as Intertie decisions, including expansions, could lead to more peaking. A discussion of these changes may be found in Sections 4.2.1 and 4.2.2 of the Final EIS. The maximum expected change in flow is roughly 30 Kcfs. As a comparison, a change in discharge of 200 Kcfs at John Day Dam is equivalent to a tailwater change of 3 feet. The projects are (and will be) operated within nonpower constraints developed by the project owners, including TW rate-of-change limits.

LTR NO: TIE-2-126 ISS NUM: 03a COM NUM: 11
COMMENT: Page 8: What documents from the Bureau of Reclamation were relied upon to intuit: "the intent of the Bureau of Reclamation [is] to make such a change in its operating constraints."

RESPONSE: In a letter dated January 26, 1987, from Harold Brush, Representative, Bureau of Reclamation, Coordination Contract Committee, to Mike Hanson, Coordination Group, Northwest Power Pool, Mr. Brush states that for Grand Coulee there is "A Lower Limit Energy Content Curve for June 30 of elevation 1285 feet."

LTR NO: TIE-2-126 ISS NUM: 03a COM NUM: 12
COMMENT: Page 9: Is it not important to ascertain which of these sets of assumptions is responsible for the substantially reduced level of reservoir elevation drop noted in the Hydro-First policy simulations in the latest analysis?

RESPONSE: The current studies represent the best available information on system operations. Both the variable nonfirm rate and the McNary flow limitation probably had some effect--The variable nonfirm rate served to lower reservoir levels in the "base" condition and the flow limitation effectively limited reservoir drafts for discretionary sales. Both of these changes better represent current operations than the draft analysis and it is not particularly important to distinguish the effects of each.

LTR NO: TIE-2-126 ISS NUM: 03a COM NUM: 13
COMMENT: Page 10: How much was the observed drop in hydro-generation attributable to the revised LTIAP noted in "the early years" and what was the monthly distribution of the reduced level of generation?

RESPONSE: In the period 1988 - 1993, hydrosystem generation declined by from 5 to 13 aMW as a result of the Proposed Formula Allocation as compared to the Pre-IAP condition. Much of this decline occurred in the months of September, November, December, and April. Most other months had increases in hydro generation.

LTR NO: TIE-2-126 ISS NUM: 03a COM NUM: 14
COMMENT: Page 11: Why would the results of the current study indicate that total hydro generation will increase by from 200-250 aMW in the new maximum Intertie case whereas, in the draft, the increase was only predicted to be about 160 aMW.

RESPONSE: This result is likely caused by the change in the California load forecast and variable nonfirm rate made between the draft and final studies.

LTR NO: TIE-2-127 ISS NUM: 03a COM NUM: 5
COMMENT: The ability of Pacific Northwest utilities to declare surplus energy based on short-term deliverability seems to be missed in the modeling conventions BPA has used.

RESPONSE: See response to comment TIE-2-127, 01a, 6, below.

LTR NO: TIE-2-127 ISS NUM: 03a COM NUM: 19
COMMENT: Describe briefly the latitude that it has in actual operations that is not represented. Describe how environmental concerns are addressed in the exercise of such latitude for system operations.

RESPONSE: In actual operations, there is more latitude than is modeled in the studies. Decisions made on a daily, weekly, or monthly basis are based on a wide variety of physical, economic, and even intuitional factors that cannot possibly all be accounted for in any model. For example, the decision to sell nonfirm power depends not only on the amount of potential surplus energy presently existing in reservoirs, but also on the price obtainable now for such energy versus what might be obtainable later, the amount of runoff presently forecasted to be available later and the timing of such runoff, and the trend of the most recent weather conditions (dry or wet). Regardless of the decision, the system is always operated in accordance with applicable environmental constraints. The operations desired by marketing over the Intertie will be subject to multi-purpose considerations, including fisheries, judged necessary by the Corps of Engineers and Bureau of Reclamation.

LTR NO: TIE-2-127 ISS NUM: 03a COM NUM: 21
COMMENT: Explain why the Proposed Policy alternative produces a decrease in total hydro system generation.

RESPONSE: The Proposed Policy produces a decrease in Pacific Northwest hydro generation in the early years of the study. In these years, competition for access using the Pre-IAP case, combined with a low-priced California market, often causes prices to be below BC Hydro's minimum rate. Thus, in 1988 BC Hydro makes fewer sales under the Pre-IAP condition than under the Proposed policy condition. As a result, more Pacific Northwest hydro generation is purchased by California with the Pre-IAP during these years.

LTR NO: TIE-2-128 ISS NUM: 03a COM NUM: 7
COMMENT: End-of-month changes were well within normal operation of the system and are insignificant.

RESPONSE: No response necessary.

LTR NO: TIE-2-133 ISS NUM: 03a COM NUM: 1
COMMENT: We are concerned that the actual effects of IDU upon reservoir operation will be much greater than predicted. Our concerns are based on the understanding that the SAM model predictions are only directional and not absolute.

RESPONSE: SAM produces elevation and flow data by reservoir for each month of each simulation. However, these results depend heavily upon future conditions such as load growth and streamflows, about which there is uncertainty. By analyzing IDU decisions incremental to a "no action" case, it is possible to determine both the direction and magnitude of any effects, given a set of assumptions about the future. By varying these assumptions (e.g.,- varying water conditions and

load forecasts) bounds can be put on the magnitude of effects. Our experience has shown that the model sometimes creates extreme operations that exceed what operators would actually face.

LTR NO: TIE-2-133 ISS NUM: 03a COM NUM: 4
COMMENT: From December through March, we recommend a mean end-of-month reservoir elevation change of less than 5 feet below base case with a maximum decline of 10 feet occurring with a frequency of only once in 10 years. During the period from April through November when the reservoirs are biologically active and nearly all of the productivity occurs, we recommend that mean end-of-month reservoir elevation changes be less than 2 feet below base case with a maximum change of 5 feet occurring only once in 10 years. No decreases in reservoir elevation below base case should be allowed in any months in which the elevation is at or below the recommended maximum drawdown. The maximum drawdowns are 85 feet for Hungry Horse Reservoir and 110 feet for Libby Reservoir.

RESPONSE: BPA appreciates the recommendations regarding reservoir drawdowns to protect resident fish. BPA has provided funds to the Montana Department of Fish, Wildlife, and Parks to conduct extensive research on the effects of reservoir operations on fish production. When that research and subsequent modeling is completed we expect a public process would be undertaken to consider results and recommendations for reservoir operations.

LTR NO: TIE-2-133 ISS NUM: 03a COM NUM: 5
COMMENT: Our recommended guidelines are preliminary. Recommendations for dam operations which incorporate fishery rule curves will be forthcoming in July 1988. It would be beneficial to reevaluate the IDU in light of dam operation effects after this information is available.

RESPONSE: See response to comment TIE-2-133, 03a, 4.

LTR NO: TIE-2-133 ISS NUM: 03a COM NUM: 6
COMMENT: We are concerned that the IDU is removing flexibility from reservoir operation prior to the completion of the reservoir studies and the development of our recommendations.

RESPONSE: Operations for power production, with or without Intertie actions, are restricted due to other constraints the project operators may choose to impose on their projects for other purposes, including protection of resident fish. BPA is cooperating with the Montana Department of Fish, Wildlife and Parks in identifying appropriate actions that may result from recommendations from their ongoing research.

LTR NO: TIE-2-134 ISS NUM: 03a COM NUM: 4
COMMENT: Page 8: There is no explanation given for not using 98 percent of full for defining refill, which is the PNCA understanding of the term "refill."

RESPONSE: A discussion of system refill is contained in Volume 1, Section 4.2.1.3 of the Final EIS.

LTR NO: TIE-2-134 ISS NUM: 03a COM NUM: 5
COMMENT: Page 23: If the System Analysis Model (SAM) can produce this additional Hungry Horse draft from an operation that already maximizes energy production, an explanation of the level of firm market being studied is needed.

RESPONSE: In actual operations, Hungry Horse is already being drafted in the fall season and beyond, to its maximum limits, and any increases in firm sales would not significantly draft the reservoir any deeper. The IDU studies differ from current operations in a number of ways; the study starts near full so on average the first few years have relatively higher reservoir levels than later years, the results are averages of 200 simulations, rather than a given water year, and marketing conditions may be different than actual circumstances. In the base case studies, SAM did not draft Hungry Horse all the way to these limits in the earliest years of the study, possibly due to the specifics of the marketing assumptions. The increased drafting that we see in the later years of the study is more in keeping with what is occurring in actual operations.

LTR NO: TIE-2-135 ISS NUM: 03a COM NUM: 16
COMMENT: Describe the amount of spill to be provided subsequent to the installation of bypass systems. This information should be made available for public review and comment.

RESPONSE: BPA assumes in modeling that no planned fish spill would be provided after bypass systems are installed. In reality, if bypass systems do not perform to expectations, the Corps of Engineers could continue spill. BPA believes this probability is too speculative for inclusion in its analysis.

LTR NO: TIE-2-137 ISS NUM: 03a COM NUM: 1
COMMENT: Studies under conditions of regional load/resource balance with DSI loads of 3,000 MW and top quartile load of 750 MW would give reasonable insights to impacts seasonal exchanges will have on hydro system operations. Suggest the following cases: (1) no seasonal exchanges, 300 MW firm Intertie sale; (2) add 800 MW seasonal exchanges; (3) increase seasonal exchanges to 1,500 MW; and (4) add 2,000 MW combustion turbines to be operated using provisional drafts.

RESPONSE: See response to comment TIE-2-118, 02a, 1. BPA's study of the firming of nonfirm, one aspect of which includes the use of combustion turbines, has been delayed but is expected to move forward again early in 1988.

LTR NO: TIE-2-138 ISS NUM: 03a COM NUM: 6
COMMENT: Page 10, paragraph 5: Recommend that an increased resolution in flow analysis be used to estimate potential flow changes due to hydrosystem/Intertie operations.

RESPONSE: BPA agrees that fish survival is affected by flow conditions more resolute than monthly. The ability to model Intertie impacts with flow resolution better than monthly, however, does not exist; nor would it be of much value, since flexibility to operate the hydrosystem within the month is considerable and modeling results could not be expected to track this flexibility. Prior to the IDU Draft EIS, BPA did examine the results of some monthly modeling compared to use of an hourly model. We found little difference between the two methods for predicting changes in fish survival through the hydrosystem. BPA, therefore, proceeded with analyses using monthly flow data.

LTR NO: TIE-2-139 ISS NUM: 03a COM NUM: 14
COMMENT: Assumption that spill will stop at dams when the bypass systems are completed may or may not [be correct].

RESPONSE: While the assumption is that planned fish spill will cease when bypasses are installed, BPA realizes that the Corps of Engineers could decide to continue fish spills if bypasses are not sufficiently effective or if greater fish survival is needed to achieve fish run improvements. By not assuming continuance of spill after bypass, BPA believes its analysis has been conservative relative to potential fish mortality caused by Intertie alternatives.

LTR NO: TIE-2-140 ISS NUM: 03a COM NUM: 5
COMMENT: Page 9, paragraph two: The specific conditions that the 4 contract years are to represent should be presented.

RESPONSE: Please see the beginning of Volume 1, Section 4.1.1 of the IDU Final EIS for a description of the conditions each study year was selected to represent.

LTR NO: TIE-2-140 ISS NUM: 03a COM NUM: 6
COMMENT: Page 10, paragraph two: More information should be provided on the change in definition of "full pool." The explanation on page B-3, i.e., "to be more consistent with coordinated planning," is insufficient.

RESPONSE: A discussion of this issue may be found in Volume 1, Section 4.2.1 of the IDU Final EIS.

LTR NO: TIE-2-125 ISS NUM: 03b COM NUM: 6
COMMENT: Page B-4, Para. 4. The dates for bypass facilities at the Mid-Columbia hydroelectric projects are not completely accurate. The 1989 date for Wells is accurate; however, the

dates for the Chelan PUD projects, Rocky Reach and Rock Island, are tentative and probably not accurate for utilization in your modeling exercise. The 1989 date for the Grant PUD projects, Wanapum and Priest Rapids, is completely unrealistic.

RESPONSE: BPA is reviewing the fish bypass installation dates at Mid-Columbia dams used in modeling potential Intertie effects. Sensitivity runs have been completed that analyze delayed bypass installation and no bypass installation at PUD dams. This information has been considered in assessing the significance of Intertie alternatives.

LTR NO: TIE-2-126 ISS NUM: 03b COM NUM: 3
COMMENT: Page 2: What are the bypass facilities that are assumed in this Information Paper?

RESPONSE: Analysis for the Hydro Operations Information Paper assumed construction of fish bypass systems at three Corps' of Engineers dams (Lower Monumental, Ice Harbor, The Dalles) and at five Mid-Columbia PUD dams (Wells, Rocky Reach, Rock Island, Wanapum, Priest Rapids). For bypass facilities at the Corps of Engineers dams, appropriations to the Corps of Engineers budget must be obtained to achieve construction. For the PUD dams, the Federal Energy Regulatory Commission must approve or order bypass installation. If bypass systems are not installed, considerable benefit to fish productivity would not be achieved. BPA's analysis includes sensitivity runs that ascertain the effects of: (1) delayed bypass construction; (2) no bypass construction; (3) 25 percent reduction in expected bypass effectiveness; and (4) 25 percent increase in expected bypass effectiveness. If bypasses are not constructed, alternative mitigative measures of a significant nature would be necessary to ensure adequate passage survival. If this were to be spill, which is not very cost-effective, large amounts would be required.

LTR NO: TIE-2-128 ISS NUM: 03b COM NUM: 5
COMMENT: PNUCC supports including the installation of Mid-Columbia bypass facilities in the current analysis. The installation dates BPA modeled for Mid-Columbia bypass systems comply with the anticipated schedule discussed in recent settlement agreement.

RESPONSE: No Response Necessary

LTR NO: TIE-2-129 ISS NUM: 03b COM NUM: 3
COMMENT: The document assumes bypass will be totally funded, which it has not been.

RESPONSE: BPA agrees that bypass systems are not totally funded at this time. But, based on the Corps of Engineers' latest construction schedule, fish bypass systems will be installed.

LTR NO: TIE-2-135 ISS NUM: 03b COM NUM: 14
COMMENT: BPA should assess alternative Mid-Columbia bypass installation schedules including the possibility that no bypass may be installed at certain projects.

RESPONSE: BPA has conducted sensitivity tests that either delay bypass systems or do not have installation. The results of these tests will be included and considered in the IDU Final EIS.

LTR NO: TIE-2-136 ISS NUM: 03b COM NUM: 1
COMMENT: We are also interested in whether or not you considered the effect, on an incremental basis, that the new FISHPASS assumptions and the bypass facilities have on the conclusions presented.

RESPONSE: Installation and operation of fish bypass systems does have a very significant effect on fish survival in the Columbia River. BPA has run several sensitivity tests on bypass efficiency and timing of installation which have been considered in the IDU Final EIS. The effects of these changes on IDU results, however, tends to be minor since in a comparative analysis, with the project versus without the project, the effects of different efficiencies or timing of installation occurs under both cases and the differences between them due to Intertie alternatives are not as large as would generally be expected.

LTR NO: TIE-2-138 ISS NUM: 03b COM NUM: 4
COMMENT: Page 2, paragraph 2: The assumption of completed bypass facilities being in place at Mid-Columbia dams between 1989 and 1993 is overly optimistic and should be revised as appropriate.

RESPONSE: BPA has completed a sensitivity test that shows effects of delayed construction of Mid-Columbia bypasses. This information is included in the IDU Final EIS.

LTR NO: TIE-2-138 ISS NUM: 03b COM NUM: 10
COMMENT: The assumed COE schedule [for installation of bypass facilities], used in this analysis should be updated, presented and made available for review and comment.

RESPONSE: The Corps of Engineers schedule for bypass installation is presented in the IDU Final EIS. BPA used the most recent information provided by the Corps of Engineers. Please refer also to response to comment TIE-2-138, 03b, 4.

LTR NO: TIE-2-140 ISS NUM: 03b COM NUM: 4
COMMENT: Page 6, last paragraph: Have plans been adopted and installation approved for installation of bypass systems?

RESPONSE: Analysis for the Hydro Operations Information Paper assumed construction of fish bypass systems at three Corps of Engineers dams (Lower Monumental, Ice Harbor, The Dalles) and at five Mid-Columbia PUD dams (Wells, Rocky Reach, Rock Island, Wanapum, Priest Rapids). For bypass facilities at the Corps of Engineers dams, appropriations to the Corps of Engineers budget must be obtained to achieve construction. For the PUD dams, the Federal Energy Regulatory Commission must approve or order bypass installation. If bypass systems are not installed, considerable benefit to fish productivity would not be achieved. BPA's analysis includes sensitivity runs that ascertain the effects of: (1) delayed bypass construction; (2) no bypass construction; (3) 25 percent reduction in expected bypass effectiveness; and (4) 25 percent increase in expected bypass effectiveness. If bypasses are not constructed, alternative mitigative measures of a significant nature would be necessary to ensure adequate passage survival. If this were to be spill, which is not very cost-effective, large amounts would be required.

LTR NO: TIE-2-129 ISS NUM: 04a COM NUM: 5
COMMENT: We find the document in regards to anadromous fish to be extremely hollow. We do not feel we can support any expansion of transmission or generating capacity, much less the conclusions drawn by the document.

RESPONSE: BPA has made a concerted effort to marshall the most current available data and analytic tools available to provide a state-of-the-art analysis of the potential for Intertie decisions to impact anadromous fish. The limitations of the analysis are openly discussed in the EIS. The data presented is considered a valuable aid to the Administrator in reaching a fully informed and rational decision concerning the proposed actions.

LTR NO: TIE-2-130 ISS NUM: 04a COM NUM: 12
COMMENT: Bonneville does not offer for analysis even one alternative that would, through constraints on Intertie operations and/or other mitigating measures, protect Idaho's fragile chinook resources and related economic interests.

RESPONSE: BPA's analysis shows the Intertie alternatives would have essentially no impact on Idaho's chinook stocks.

LTR NO: TIE-2-133 ISS NUM: 04a COM NUM: 2
COMMENT: IDU has the potential to adversely affect the productivity of both [Libby and Hungry Horse] reservoirs for salmonids.

RESPONSE: BPA's analyses for the IDU Final EIS assess whether any Intertie actions would have the potential to significantly affect fish productivity in Hungry Horse and Libby Reservoirs.

LTR NO: TIE-2-138 ISS NUM: 04a COM NUM: 7
COMMENT: Page 14, paragraph 4: Egg availability has not been taken into account in determination of significant impact.

RESPONSE: The comment regarding egg availability pertaining to impact significance is not clear to BPA. We agree that depressed stocks need increased egg supplies either in the hatchery or deposited in the natural environment. However, it would seem that if passage survival improves through time, that more eggs will be available at spawning. Improvements to passage survival of upriver stocks directly relates to improved overall stock productivity.

LTR NO: TIE-2-140 ISS NUM: 04a COM NUM: 3
COMMENT: Page 2, last sentence of paragraph two: When discussing survival rates, the test should indicate whether this is for juveniles or refers to escapement of spawning adults.

RESPONSE: The discussion of survival rates refers to juvenile fish.

LTR NO: TIE-2-140 ISS NUM: 04a COM NUM: 7
COMMENT: Page 16, paragraph two: Are the mortality rates annual values or are they cumulative?

RESPONSE: The change in survival rates are annual values.

LTR NO: TIE-2-140 ISS NUM: 04a COM NUM: 8
COMMENT: Pages 17 and 18: The text is unclear as to whether the decreases apply to the no-action base condition or to the future without condition that includes implementation of the Columbia River Fish and Wildlife Program. We suggest that survival rates as well as the number of fish be displayed for the no-action base condition, the no-action future condition (this includes the Columbia River Fish and Wildlife Program), and the various project alternatives.

RESPONSE: The IDU Final EIS clearly displays survival rates for the base condition which is the future without the project, and for the various Intertie alternatives.

LTR NO: TIE-2-122 ISS NUM: 04b COM NUM: 2
COMMENT: Determining that the expansion of the Intertie will impact fishery resources and that mitigation is required is unreasonable considering the insignificant levels of the results.

RESPONSE: BPA understands that there is uncertainty in model results due to imprecise knowledge of parameter values and biotic/abiotic relationships. However, since the analysis is conducted in a comparative mode and changes in fish survival through the hydrosystem are relatively insensitive to changes in model parameters, BPA believes the levels of impact discussed in the Hydro Operations Information Paper are important.

We agree that changes in relative mortality in tenths of a percent may be undeterminable, but impact levels greater than 1 percent do in fact signify a notable change relative to measures the region is implementing to reverse the loss of salmon and steelhead productivity caused by existing hydrosystem development.

LTR NO: TIE-2-122 ISS NUM: 04b COM NUM: 3
COMMENT: Impacts from the operation of the hydrosystem are already being mitigated. As long as the hydrosystem is operated in compliance with these requirements, additional mitigation is not required.

RESPONSE: The Northwest Power Act requires BPA to provide equitable treatment to fish and wildlife resources in operation of the hydrosystem. BPA must also protect, mitigate, and enhance fish and wildlife resources of the Columbia River Basin in a manner consistent with the Council's Program. BPA believes insufficient evidence exists to conclude that implementation of measures in the existing Program sufficiently mitigates all possible operations of the existing hydroelectric system. The program provides a process, we believe, to provide this mitigation over time.

LTR NO: TIE-2-123 ISS NUM: 04b COM NUM: 2
COMMENT: Mitigation is not necessary under most scenarios for the impacted stocks primarily because of the projected benefits from implementation of measures in the Columbia Basin Fish and Wildlife Program.

RESPONSE: While estimates of anadromous fish passage survival generated by FISHPASS have uncertainty associated with them, BPA believes that the degree of impact estimated due to Intertie scenarios (0 to 3 percent) when compared, using the same techniques, to the projected effects of planned protection measures are valid in determining significance of impact. For most fish stocks and Intertie alternatives, FISHPASS indicates impacts of less than 1 percent in change in relative survival, while the expected improvements of fish bypass systems and other passage protection measures are shown in certain cases to be about 40 percent. This substantial disparity in impact to fish survival that FISHPASS shows is a valid use of the model in impact assessment.

The fish protection measures, primarily bypass systems, that were included in the model to estimate future fish survival conditions are not considered speculative, but are planned and expected to be installed. BPA, therefore, believes it is appropriate to consider the positive aspects of these measures when considering the significance of impacts associated with Intertie options.

LTR NO: TIE-2-123 ISS NUM: 04b COM NUM: 3
COMMENT: Benefits from the Columbia Basin Fish and Wildlife Program derived are not intended to offset future losses associated with new project construction or changes in current operations such as are proposed in the Intertie EIS.

RESPONSE: BPA has not proposed that measures currently in the Fish and Wildlife Program are mitigation for possible Intertie actions. The expected positive effects of scheduled fish passage improvement actions are included as context in which to judge the significance of impacts predicted for Intertie alternatives. For example, even a 1 percent decline in survival of smolts of a salmon stock in critical condition could be very significant, but if survival has been improving in recent years and is expected to increase an additional 30-40 percent in future years as an Intertie option is being implemented, then the significance of the 1 percent decline is moot. If in the future, these very positive expectations are not realized, then the Northwest Power Act provides the ongoing authority and requirement to adjust hydro operations and implement additional protection measures to ensure improved fish populations.

The Northwest Power Act does not direct that changed operations of the existing hydrosystem must be held in abeyance awaiting rebuilt salmon and steelhead populations. The Act provides for equitable treatment of fish and power operations. BPA does not intend to substantially alter improving trends in fish survival that are due to hydrosystem operations.

LTR NO: TIE-2-123 ISS NUM: 04b COM NUM: 4
COMMENT: Compare the future conditions, with and without the Intertie development and use proposals, and then provide complete mitigation for the identified impacts. In determining what mitigation would be necessary for the Intertie-related losses the ongoing mitigation for other hydroelectric system caused losses would be considered irrelevant except for its bearing on determining future conditions.

RESPONSE: BPA's anadromous fish analyses do compare the future conditions, with and without Intertie alternatives. Survival impacts identified reflect this comparison. Whether these impacts, mostly adverse, require mitigation is a judgment of the level of impact significance. All predicted impacts do not automatically require mitigation.

LTR NO: TIE-2-123 ISS NUM: 04b COM NUM: 5
COMMENT: No new actions which decrease survival can be considered acceptable unless losses are fully mitigated. The information paper reflects no commitment or obligation to protect ratepayer investments in rebuilding fish runs. We do not

support transportation as a long-term mitigation option, nor hatchery production as a full solution to losses which may include wild and natural stocks.

RESPONSE: There is no basis in current law, wherein Congress has required improved anadromous fish runs in the Columbia River Basin based on the concept that any decrease in fish survival, no matter how small, is unacceptable until past losses are fully mitigated. BPA must provide equitable treatment to anadromous fish runs; BPA will protect its ratepayers' investments; BPA will not take actions which would realistically jeopardize the doubling of Columbia River fish runs; but BPA, in taking these steps, must be able to operate the hydrosystem to achieve power and fiscal objectives.

Fish transportation is a proven mitigation technique that is providing substantial benefits for many upriver salmon and steelhead stocks. It may be the only known mitigation technique that can provide levels of improvement in survival sufficient to sustain substantial measures in escapements and harvest. However, BPA would only propose additional transportation if it were believed by the fisheries community to provide mitigative benefits. Hatchery mitigation as an alternative technique would only be proposed by BPA to offset losses to fish populations of hatchery or significantly hatchery origin.

LTR NO: TIE-2-124 ISS NUM: 04b COM NUM: 1
COMMENT: BPA's Intertie program continues to pose unacceptable risks to the wild salmon and steelhead resource of the upper Columbia River Basin. The DC Expansion Project and Third AC Intertie should go forward only if BPA commits to a program of increased planned spill at mainstem Columbia and Snake River dams.

RESPONSE: BPA's assessment of potential Intertie actions indicates whether unacceptable risks to salmon and steelhead resources in the upper Columbia River Basin exist and whether certain alternatives are implementable.

LTR NO: TIE-2-124 ISS NUM: 04b COM NUM: 4
COMMENT: NEPA does not permit BPA to cancel some of the benefits of the Fish and Wildlife Program and to label that loss insignificant. BPA must consider mitigation measures to offset adverse impacts to all affected stocks, including stocks that will be helped by the Fish and Wildlife Program.

RESPONSE: In its analysis of impact significance under NEPA, BPA must consider the context in which predicted impacts would occur due to Intertie decisions. If the positive effects of fish bypass installation by the Corps of Engineers and Mid-Columbia PUD's would be expected to cause substantial increases in fish

runs (future without the project) and the future with the Intertie alternatives does not significantly alter that effect on fish productivity, then mitigation would be unnecessary. If the future with an Intertie alternative significantly altered the progress, if any, in rehabilitation of a fish stock, then mitigation or abandonment of the alternative would be deemed appropriate.

There are no provisions in NEPA or the Northwest Power Act that can be interpreted to mean that any change to the hydrosystem is illegal prior to full mitigation and enhancement of Columbia River anadromous fish runs.

LTR NO: TIE-2-124 ISS NUM: 04b COM NUM: 10
COMMENT: The key environmental impact of increased Intertie operations is the loss of this additional spill. Therefore, discussion of mitigation should focus on replacing lost overgeneration spill with an augmented planned spill program.

RESPONSE: BPA agrees that the primary physical impact to fisheries by implementation of some Intertie alternatives is reduction of overgeneration spill. There is, however, not necessarily a direct tie between the loss of overgeneration spill and increasing planned fish spills as the appropriate mitigation, if warranted. If mitigation is needed, it should be in a form that sufficiently, and most cost-effectively, counters the adverse effect of the impact.

LTR NO: TIE-2-124 ISS NUM: 04b COM NUM: 11
COMMENT: The obligation to search for an improved spill program now comes from two entirely complementary sources: NEPA's directive to consider mitigation measures through the IDU EIS process and the Council's mandate for more spill in non-critical water years.

RESPONSE: See response to comment TIE-2-124, 04b, 13.

LTR NO: TIE-2-124 ISS NUM: 04b COM NUM: 12
COMMENT: BPA should support the fishery agency/tribal spill proposal presented to the Mainstem Passage Executive Committee as a necessary mitigation measure for increased Intertie operations.

RESPONSE: BPA has not sufficiently analyzed the fishery agency/Tribal spill proposal to ascertain whether it would offset any potential significant impact on the productivity of one or more fish stocks.

LTR NO: TIE-2-124 ISS NUM: 04b COM NUM: 13
COMMENT: The information paper's discussion of mitigation measures is inadequate under NEPA. The paper simply lists possible mitigation measures which could be undertaken without specifying which techniques will be used. The information

paper's discussion of mitigation is also inadequate because it does not represent the full range of appropriate mitigation measures. The information paper discusses mitigation only for stocks that are not projected to benefit substantially from the Fish and Wildlife Program.

RESPONSE: BPA agrees that an adequate NEPA process includes reasonable mitigation measures where appropriate.

BPA is unique in the fact that the Pacific Northwest Power Act established the Fish and Wildlife Program, developed in consultation between BPA and the Power Planning Council. 16 U.S.C. §839b(h). This unique statutory responsibility has resulted in the water budget, installation of bypass systems, a spill program, a fish transportation program, and improvements to adult passage facilities. The Program has changed over time and doubtless will continue to change. BPA has a commitment to continue working with the Council to monitor the effects of hydro system operations. This unique arrangement has resulted in the fact that most if not all reasonable mitigation has already been implemented or already put into agency plans. A second result is that BPA is hard-pressed to develop additional mitigation measures.

At the time of decision, BPA can respond to any significant effects by: (1) proceeding with a proposed action without mitigation, where reasonable mitigation is not available; (2) adopting mitigation measures that are presented in this Final EIS; or (3) tiering its decisionmaking over time "to a supplement . . . or a subsequent statement or analysis at a later stage (such as environmental mitigation)." 40 C.F.R. §1508.28(b). This third option recognizes the possibility of continuing monitoring and mitigation decided between the Council and BPA pursuant to the Fish and Wildlife Program.

LTR NO: TIE-2-125 ISS NUM: 04b COM NUM: 3
COMMENT: We are concerned about BPA's attitude or position that additional hydropower related impacts are justifiable for Columbia River Basin stocks of salmonids if other system corrective measures are having positive benefits.

RESPONSE: See response to comment TIE-2-123, 04b, 2 and 04b, 3.

LTR NO: TIE-2-126 ISS NUM: 04b COM NUM: 16
COMMENT: Page 19: When will BPA decide what mitigation measures will be selected for the Lyons Ferry fall Chinook salmon stock?

RESPONSE: BPA will decide if mitigation for Lyons Ferry fall chinook is necessary upon completion of studies for the IDU Final EIS and subsequent drafting of a Record of Decision. The type of mitigation would need to be developed working with fishery agencies and Indian Tribes. If spill were used for mitigation, the amount would probably be defined prior to issuance of the Record of Decision.

LTR NO: TIE-2-128 ISS NUM: 04b COM NUM: 8
COMMENT: PNUCC believes BPA is wrong, first in its assessment of what is a significant level of impact, and second, in its suggestion of additional mitigation measures for possible impacts. On a regional basis, the entire fisheries mitigation and enhancement measures on the Columbia River including the Council's Fish and Wildlife Program were developed in response to and is limited by the adverse fishery impacts associated with the operation of the Columbia Basin hydroelectric system. It was designed to mitigate for the full existing operational capability of the system.

RESPONSE: See response to TIE-2-122, 04b, 3.

LTR NO: TIE-2-128 ISS NUM: 04b COM NUM: 9
COMMENT: The possible reductions in fisheries survival identified are not true impacts. The impacts BPA is measuring are reductions of extra benefits from not operating the system at full capacity. Currently the system is not always operated at full capability. The fish have experienced greater benefits than expected. It is unnecessary for BPA to provide additional mitigation for reductions of these extra benefits.

RESPONSE: The legal responsibility under the Northwest Power Act to provide equitable treatment and to protect, mitigate, and enhance anadromous fish does not necessarily allow for a conclusion that operations of the hydrosystem within its current full capacity are acceptable. It is the development and operation of the existing hydrosystem, whether or not operated to full capacity, that has led, in large part, to the decline in anadromous fish runs. At this time, protection of fish requires deviation from operations at full capacity.

LTR NO: TIE-2-129 ISS NUM: 04b COM NUM: 1
COMMENT: Our overall impression of the document is that BPA is taking proposed changes in production, transportation bypass, sliding scale spill and revised water budget logic that is contained in the revised Columbia Basin Fish and Wildlife Program for the purpose of increasing overall anadromous fish run size and using them to compensate for the increased mortality caused by the new Intertie proposals.

RESPONSE: BPA is not proposing to claim planned improvement in fish passage as mitigation of Intertie activities, but to include their expected benefits in the context of the environment to which Intertie impacts would occur (see response to comment TIE-2-123, 04b, 3).

LTR NO: TIE-2-130 ISS NUM: 04b COM NUM: 9
COMMENT: There is no conclusive evidence that transportation is an effective tool to mitigate for the effects of adverse passage conditions on these stocks.

RESPONSE: Fish transportation has been found to be a very effective mitigation tool for steelhead and fall chinook. The evidence for spring chinook is not conclusive but transportation appears to be beneficial. Return rates for spring chinook have been so low and research sample sizes so limited by fishery agencies that more conclusive results have not been obtained. Many suspect that disease may be so prevalent in spring chinook that the means of fish passage is secondary to their survival. Transportation may likely be the only reasonable means to achieve sufficient mainstem passage survival to rehabilitate upriver runs while allowing harvest.

LTR NO: TIE-2-130 ISS NUM: 04b COM NUM: 10
COMMENT: Increased hatchery production is not mitigation, but potentially a threat to these troubled wild stocks.

RESPONSE: BPA did not suggest hatchery mitigation for Idaho spring chinook, but potentially for Lyons Ferry Hatchery (Snake River) fall chinook. Further hatchery mitigation for this stock would not, BPA believes, conflict with existing management of this or other stocks.

LTR NO: TIE-2-135 ISS NUM: 04b COM NUM: 21
COMMENT: The Hydro Operations Information Paper's commentary with respect to the benefits of the Fish and Wildlife Program does not satisfy NEPA's requirement for discussion of mitigation. Mitigation must be specific to the project proposed and not part of a general related program.

RESPONSE: See response to comment TIE-2-124, 04b, 13.

LTR NO: TIE-2-138 ISS NUM: 04b COM NUM: 1
COMMENT: Various ongoing and planned mitigation programs are in place to mitigate for past and existing fish losses, not to mitigate for reduced survival due to Intertie actions. Any reduction in fish survival is inconsistent with BPA's ongoing efforts to increase stocks already severely depressed.

RESPONSE: Please refer to response to comment TIE-2-123, 04b, 3. Additionally, BPA does not see Intertie actions as reducing fish survival, but minimally reducing ongoing and planned increases in stock survival.

LTR NO: TIE-2-138 ISS NUM: 04b COM NUM: 2
COMMENT: Any reduction in survival of depressed upriver fish stocks due to Intertie expansion and use would have to be considered a significant impact warranting mitigation.

RESPONSE: BPA agrees that any net reductions to survival of a critically depressed stock would be a significant impact. This is one of the criteria BPA used in its analysis judging significance.

LTR NO: TIE-2-138 ISS NUM: 04b COM NUM: 9
COMMENT: Page 19, paragraph 3: The statement about only a portion of the Lyons Ferry hatchery fish being transported from McNary Dam should be clarified.

RESPONSE: Releases of fall chinook from Lyons Ferry Hatchery are collected and transported from McNary Dam only to the extent of the collection system efficiency.

LTR NO: TIE-2-139 ISS NUM: 04b COM NUM: 3
COMMENT: Page 6, bottom: [The assumption that because] Mid-Columbia bypasses are [installed means] impacts are insignificant because the runs are so much higher.[,] is not a good incremental analysis unless the losses of fish are a great deal less because the bypasses protect the salmon from losses due to operation changes.

RESPONSE: BPA believes that the losses of fish due to some Intertie alternatives are small when compared to the improvements expected from bypass installation. Also, as indicated, the changes in operations due to Intertie activities, primarily reduced overgeneration spill, are not as detrimental to fish because the bypasses are in operation.

LTR NO: TIE-2-139 ISS NUM: 04b COM NUM: 4
COMMENT: Page 16, 2nd paragraph: Improvements made from alternative projects (e.g., Columbia Basin F&W Program) should not be credited to the alternative being investigated. The 1.4 percent decrease in fish stocks, due to DC upgrade, should not be dismissed as insignificant because of improvements made with other programs. This same error is made concerning the Third AC Intertie.

RESPONSE: Please refer to response to comment TIE-2-123, 04b, 3.

LTR NO: TIE-2-139 ISS NUM: 04b COM NUM: 10
COMMENT: Pages 15-17: [Don't] balancing[e] expected project impacts with the benefits of regional implementation of the Fish and Wildlife Program unless those benefits are specifically defined as mitigation for the proposed project.

RESPONSE: See response to comment TIE-2-123, 04b, 3, 5.

LTR NO: TIE-2-139 ISS NUM: 04b COM NUM: 12
COMMENT: Page 19: It seem[s] inappropriate to discuss mitigation actions when the report appears to be saying that fish mitigation is not required. Many of the statements [on page 19] are incorrect [because]: (1) a juvenile fish bypass program is already in place at Corps of Engineers dams in order to protect the Lyons Ferry fish; (2) there are not data showing excessive straying of juvenile fall chinook from Lyons

Ferry Hatchery; and (3) Lyons Ferry Hatchery full production level is programmed as follows:

Fall Chinook - 101,800 lbs at 70-90 fish/lb
Spring Chinook - 8,800 lbs at 15 fish/lb
Steelhead - 116,400 lbs at 5 fish/lb

RESPONSE: BPA realizes that Lyons Ferry Hatchery fish are benefitted by Corps of Engineers bypass and transportation programs. BPA was suggesting that if mitigation were needed, that expanded use of these techniques could be employed. Regarding straying, BPA was referring to the straying of returning adult fish, not juvenile fish. BPA will review the data on straying to determine if it could be problematic as a mitigation tool.

LTR NO: TIE-2-139 ISS NUM: 04b COM NUM: 13
COMMENT: Pages 19 and 28 discuss BPA proposed mitigation options that would require Corps of Engineers concurrence [; this] should be deleted.

RESPONSE: BPA does not believe that options for mitigation requiring the concurrence of another party should be eliminated for that reason. All fish mitigation alternatives require coordination and agreement by a number of parties prior to implementation.

LTR NO: TIE-2-140 ISS NUM: 04b COM: 10
COMMENT: Page 19: Who is to provide financing for stocking and transporting alternatives?

RESPONSE: Costs of hatchery construction and operation, and fish transportation are costs that are initially appropriated to the U.S. Fish and Wildlife Service and Corps of Engineers, but repaid to the U.S. Treasury each year by BPA.

LTR NO: TIE-2-123 ISS NUM: 04c COM NUM: 6
COMMENT: The analysis of impacts to anadromous fish should distinguish between wild and natural stocks and hatchery stocks. By combining both hatchery and wild or natural stocks where they occur together, impacts to the wild and natural stocks may be masked.

RESPONSE: BPA agrees with the comment. The analysis for the IDU Final EIS addresses all fish stocks, hatchery, natural, and wild.

LTR NO: TIE-2-124 ISS NUM: 04c COM NUM: 17
COMMENT: The paper does not mention impact to upper Snake River naturally spawning fall chinook, which is also composed of Snake River summer migrants and which must pass two additional dams. How can the DC Expansion Project produce significant impacts to the Lyons Ferry stock without also harming the upriver naturally spawning stock?

RESPONSE: Fish stocks arising above Lower Granite Dam do not sustain as much mortality as those in the Lower Monumental pool (site of the hatchery) due to the transportation facilities at Lower Granite and Little Goose Dams which transport these stocks through the end of July. There is no change in spill at hydroelectric projects in August due to Intertie decisions and, therefore, any of the minor numbers of late (August) migrating fish not transported are not affected.

LTR NO: TIE-2-125 ISS NUM: 04c COM NUM: 2
COMMENT: We are concerned that your proposed flagging criteria appear to be based upon a measure of statistical significance; when dealing with stocks of anadromous salmonids whose abundance and productivity have been chronically depressed, any measurable impact is biologically significant and must be reported in your EIS.

RESPONSE: BPA has received considerable public comment regarding the flagging criteria and its application to stocks that may be in a critically depressed condition. BPA has, therefore, solicited further public comment on stocks and their status. For analysis in the IDU Final EIS, BPA does not apply the flagging criteria to stocks identified to be in a critically depressed condition.

LTR NO: TIE-2-125 ISS NUM: 04c COM NUM: 4
COMMENT: Page 16, para. 4. The terminology "mean relative survival decreases" is somewhat confusing. How is the mean derived? We feel that you are required to present an assessment of the potential worst case scenario for each affected stock, not "mean relative survival decreases: for "stock(s) of concern."

RESPONSE: The explanation of "mean relative survival decreases" is as follows:

For each contract year examined (1988, 1993, 1998, 2003), the SAM/FISHPASS models evaluate 40 random water years to produce 40 changes in system stock survival (from the point of entry to the hydrosystem to below Bonneville Dam). These changes in survival are the difference between the without project condition and the with project condition relative to the level of survival of the without project condition for each of the 40 years. We then average the 40 separate relative changes to produce the mean relative survival decrease. In addition to the mean condition, we also examine the maximum single year change to evaluate the potential for a catastrophic change.

BPA believes that what is required is a reasonable assessment of foreseeable environmental effects. Federal agencies only prepare "worst-case analysis" where information is unknown. 40 C.F.R. §1502.22. Rather than conjure a "worst case," BPA has developed state-of-the art forecast methodology to obtain

the best possible information. No "worst-case" is needed to fill gaps in knowledge because there is no information missing that is "essential to a reasoned choice among alternatives." 40 C.F.R. §1502.22 (1987).

LTR NO: TIE-2-125 ISS NUM: 04c COM NUM: 5
COMMENT: Page 19, Para. 1. Any projected survival decrease for the Lower Monumental pool fall chinook stock is highly significant for two principal reasons: there is a critical lack of broodstock available to meet current mitigation/compensation programs; there is also a critical lack of suitable sites for conducting additional hatchery mitigation for this stock of salmon.

RESPONSE: BPA appreciates the information regarding your concerns about potential Intertie impacts on Lyons Ferry fall chinook (Lower Monumental pool). BPA is collecting additional information on the feasibility of mitigation for this stock should it be necessary. While we agree that the broodstock for the hatchery is not yet to a level that would allow full hatchery production, we understand it increased substantially in 1987.

LTR NO: TIE-2-125 ISS NUM: 04c COM NUM: 7
COMMENT: Page B-6, Para. 5. Why was only the Corps of Engineers' fish spill plan utilized in the analysis? The fishery agencies have produced alternative fish spill plans which may be utilized in the future.

RESPONSE: The Corps of Engineers' fish spill plan rather than other spill proposals was utilized in the Intertie analysis because the Corps of Engineers is the entity responsible for operation of its dams and therefore its spill plan would govern spill operations. In conducting an impact assessment, BPA must reflect expected operations without passing judgment on the adequacy or appropriateness of other policy positions. It would be inappropriate to use impact assessment to support spill policy positions. Additionally, using current spill levels provides a more conservative analysis of potential impacts (i.e., the lower the level of planned spill, the greater the projected impacts due to Intertie decisions).

LTR NO: TIE-2-126 ISS NUM: 04c COM NUM: 9
COMMENT: Page 6: What is the degree of change in river operations required to see a substantial impact on fish stocks?

RESPONSE: BPA has not conducted any studies that would determine at what point changes in any aspect of hydrosystem operations or combination of operations would create a substantial impact to one or more anadromous fish stocks.

LTR NO: TIE-2-128 ISS NUM: 04c COM NUM: 2
COMMENT: The criteria used to identify possible impacts to anadromous fish are too narrowly defined given the accuracy of the available data.

RESPONSE: The criteria used to flag impacts to anadromous fish were reviewed based on public comment (see response to comment TIE-2-125, 04c, 2).

LTR NO: TIE-2-128 ISS NUM: 04c COM NUM: 10
COMMENT: BPA should not include Lyons Ferry stock as an impacted stock due to the Intertie use and development. First, they are not unique in a biological perspective like wild stocks and, second, fluctuations in the stock's population are influenced more by hatchery management practices than by possible impacts resulting from Intertie use and development.

RESPONSE: BPA understands that the Snake River fall chinook is a unique stock and that its continued existence and rehabilitation is currently tied largely to the success of Lyons Ferry Hatchery operation. Whether the stock's population is influenced more by hatchery management practices is considered contextually in analysis for the IDU Final EIS. The success or failure of hatchery operations is a factor that will occur with or without the Intertie alternatives.

LTR NO: TIE-2-130 ISS NUM: 04c COM NUM: 7
COMMENT: There is no evidence to suggest anything other than that any decrease in survival of stocks chronically hovering at or near replacement levels is not only potentially significant, but potentially critical.

RESPONSE: BPA agrees that any net decrease in survival of a fish stock that is chronically hovering at or near replacement levels would be a significant impact. BPA has significant evaluation criteria which include this concept.

LTR NO: TIE-2-130 ISS NUM: 04c COM NUM: 8
COMMENT: Idaho chinook stocks of concern have not yet responded conclusively to initiatives taken pursuant to the Columbia River Basin Fish and Wildlife Program. And there is evidence to suggest past and approved future program initiatives are not sufficient to reverse the precarious condition induced by past hydrosystems operations.

RESPONSE: BPA would not disagree with the concern that some chinook stocks have yet to conclusively respond to mitigation initiatives to date. In completing the IDU Final EIS, BPA may need to examine the effects of Intertie actions on this concern. Even without any Intertie actions, some natural chinook stocks may not be viable for future enhancement efforts under the Northwest Power Act. BPA closely examined the issue so as not to foreclose any future options for stock rehabilitation.

LTR NO: TIE-2-130 ISS NUM: 04c COM NUM: 11
COMMENT: All Bonneville's Intertie study alternatives use a no-action, status quo base condition as a benchmark against which to compare simulated relative changes in fish survival. This ignores the fact that the current precarious condition of Idaho chinook stocks is in largest part the direct result of the hydro operations status quo which is under increasing attack by fisheries interests.

RESPONSE: No, the base case from which BPA measures the change in fish survival due to Intertie impacts is not a status-quo situation. In the base case or without project condition, BPA assumes that planned mitigation measures, primarily bypass systems, would be installed and that fish productivity would respond accordingly.

LTR NO: TIE-2-135 ISS NUM: 04c COM NUM: 13
COMMENT: The rationale provided in the Hydro Operations Information Paper for the turnabout in the numbers of stocks affected is cursory.

RESPONSE: Determining which distinct stocks should be evaluated under the IDU EIS and which are potentially affected by changes in the hydrosystem has been difficult because of the lack of adequate direction provided by the fishery management entities. BPA is unaware whether fishery entities have agreed on a list of stocks for which production and harvest will be managed and which can be sustained given the hydrosystem, mixed stock harvests, and other environmental variables. Given this situation, the result of BPA's analyses can vary based on public comment regarding the "stocks" exposed to hydrosystem operations.

LTR NO: TIE-2-135 ISS NUM: 04c COM NUM: 17
COMMENT: Substantiate estimations of Program benefits that appear on pages 16-18 of the Hydro Operations Information Paper.

RESPONSE: BPA has provided a more detailed explanation of estimated benefits to be derived from planned fish passage improvements in the IDU Final EIS.

LTR NO: TIE-2-135 ISS NUM: 04c COM NUM: 18
COMMENT: Mean survival information [in the form of averages] is not really helpful. The Hydro Operations Information Paper compounds this inadequacy by comparing mean relative survival changes to projected increased survival due to implementation of the Fish and Wildlife Program.

RESPONSE: The average relative change in survival over the 40 water years tested is the best statistic to employ to determine the most expected impact and most expected future. The average is also the best statistic to use to summarize information. BPA

has provided computer printouts in the IDU Final EIS which provide distributional statistics for the survival changes of all stocks of anadromous fish.

LTR NO: TIE-2-138 ISS NUM: 04c COM NUM: 8
COMMENT: Page 18, Table 3: Any reduction in survival of upriver stocks is significant and inconsistent with efforts to rebuild upriver stocks.

RESPONSE: BPA disagrees with the statement that "any reduction in survival of upriver stocks is significant and inconsistent with efforts to rebuild upriver stocks." This is a broad, general statement that does not apply to all stocks. Additionally, the region has yet to define how much improvement in survival is necessary to achieve some rehabilitation. The small reductions in expected improvements to fish survival shown in Table 3 would not be expected to limit stock rehabilitation.

LTR NO: TIE-2-139 ISS NUM: 04c COM NUM: 5
COMMENT: The only criteria used in determining significance is whether the fish stock's viability and harvest are threatened.

RESPONSE: The criteria used in assessing significance focus on changes in stock viability or harvest. BPA is not aware of what other factors would need to be assessed for significance.

LTR NO: TIE-2-139 ISS NUM: 04c COM NUM: 8
COMMENT: On page 12, paragraph 2: Paper should reflect the accepted value of 15 percent turbine mortality.

RESPONSE: BPA uses 15 percent turbine mortality as the parameter value in FISHPASS analyses for Federal dams.

LTR NO: TIE-2-140 ISS NUM: 04c COM NUM: 9
COMMENT: The effect of juvenile survival on escapement should also be included in the discussion.

RESPONSE: BPA agrees with the comment. The IDU Final EIS discusses the relationship between juvenile survival and adult returns in Volume 1, Section 4.2.3.4.1.

LTR NO: TIE-2-133 ISS NUM: 05b COM NUM: 3
COMMENT: The shallow near-shore, or littoral areas dewatering in the fall in Hungry Horse Reservoir and subsequent loss of benthic insect production and littoral habitat for westslope cutthroat trout has reduced the growth and survival of this species. Deeper drafting can only further reduce game fish production.

RESPONSE: BPA understands that fall drafts reduce reservoir food production for cutthroat trout. BPA will await completion of current research and results of modeling to decide whether additional drafts of various amounts would affect game fish production.

LTR NO: TIE-2-139 ISS NUM: 05b COM NUM: 15
COMMENT: Page 23: The document states that drawdown in pool elevations will occur at Libby, Hungry Horse, and Dworshak, but fails to state the effects of drawdowns [on resident fish]. Describe the basis for this decision.

RESPONSE: The IDU Draft EIS discussed potential impacts of reservoir drawdowns on resident fish. Another detailed discussion is provided in Volume 1, Section 4.2.3 of the IDU Final EIS.

LTR NO: TIE-2-140 ISS NUM: 05b COM: 12
COMMENT: Page 22, last paragraph: The basis for the "no significant impact" statement should be included. What changes in reservoir elevation would be considered significant?

RESPONSE: More detail on the basis for findings of significance is provided in the IDU Final EIS.

LTR NO: TIE-2-128 ISS NUM: 05c COM NUM: 12
COMMENT: In Hungry Horse reservoir, additional mitigation is not required. No changes in operations are planned at Hungry Horse as a result of any Intertie decisions. The Council rejected a proposal altering operation for Hungry Horse because it was impractical to further restrict operation. Unless BPA expects to propose changes in operational constraints at Hungry Horse as a result of any Intertie decisions, or the study results show that drawdown does not occur any earlier than in the base case, considerations for additional mitigation are unnecessary.

RESPONSE: Comment is noted.

LTR NO: TIE-2-140 ISS NUM: 05c COM: 13
COMMENT: Page 23, last paragraph: This paragraph discusses ways to mitigate impacts from reduced reservoir levels. Who is to provide financial support for these alternatives?

RESPONSE: BPA would plan on using its funds for any necessary resident fish mitigation.

LTR NO: TIE-2-140 ISS NUM: 05c COM: 14
COMMENT: Page 24, first paragraph: Statements to the effect that mitigation recommendations would be considered for implementation is not much of a commitment. Without a more positive statement the analysis should assume a "worst case" analysis; i.e., no mitigation.

RESPONSE: BPA is committed to mitigating the adverse effects of power system operations on fish and wildlife. For example, BPA is spending millions of dollars each year on mitigation projects consistent with the Northwest Power Planning Council's Fish and Wildlife Program.

Mitigation measures did not appear in the IDU Draft EIS or the Hydro Operations Information Paper because BPA had not developed any. BPA was open to, and remains open to, proposals for feasible mitigation measures that are outside the scope of the Council's Program. Thus, BPA openly solicited recommendations for mitigation.

Environmental analysis in the Hydro Operations Information Paper does assume a "worst case" in the sense that impacts are projected without mitigation, except for mitigation assumed as part of the impact models.

Decisions on mitigation measures will not be made until at least 30 days after the IDU Final EIS is filed, when the Record of Decision is prepared. At that time, the balance will be struck between proceeding with or without additional mitigation measures. Until that time, BPA will consider any proposals for mitigating the effects of hydroelectric system operations.

LTR NO: TIE-2-134 ISS NUM: 06a COM NUM: 1
COMMENT: Any operational alternative that reduces the potential for Hungry Horse Reservoir being full during the summer months (July and August) is viewed as having negative effects on the quality of the recreational experience at that reservoir.

RESPONSE: Data for the 20 original studies have been reviewed and the probability of being in the top 2 feet at the end of June, July, and August has been calculated. Differences in this parameter for the months of June and July are small -- 1 to 2 percent. Differences in August are more typically 5 percent or so although in 1988 a difference of 9.5 percent occurred. Existing contract cases tended to have the higher probabilities of being in the top 2 feet. When access to boat ramps is considered, the recreation index associated with the firm marketing alternatives declined by up to 2 to 3 percent in August. This is partially offset by some increases in earlier months so that on a seasonal basis (June through August) results were similar for all alternatives.

LTR NO: TIE-2-134 ISS NUM: 06a COM NUM: 2
COMMENT: Discharge from Hungry Horse Reservoir on weekends or holidays between mid-June and Labor Day must be limited to releases needed to meet minimum fish flow requirements. This is a firm constraint and must be factored into the Intertie expansion studies.

RESPONSE: The System Analysis Model is limited to analyzing the effects of the alternatives on a monthly average basis, so a requirement that is only in effect on holidays and weekends can only be approximated. Under the requirement described by the Bureau of Reclamation, Hungry Horse could average about

6800 cfs through the turbines (based on running full load on weekdays and minimum flow levels on holidays and weekends). A review of the project's operation under all 20 alternatives in the IDU Final EIS studies shows that the monthly average discharge exceeds 6800 cfs in the worst-case alternative a maximum of 10.5 percent, 13 percent, and 12 percent in the months of May (the HFMXF case), June (the PFMXA, PRMXA, and HFMXA cases), and July (the PRDCF, PREXF, HFEXF, and PREXF cases) respectively. See Key to Abbreviations at the beginning of Volume 4, IDU Final EIS, for a description of the preceding acronyms.

LTR NO: TIE-2-134 ISS NUM: 06a COM NUM: 3
COMMENT: The information paper does a good job of explaining the range of potential impacts to recreation as a result of reservoir operational changes. However, it does not specifically describe how, when, and where these activities would be affected.

RESPONSE: Volume 1, Section 4.2.2 discusses potential impacts to recreation resulting from Intertie decisions. Because system planning tends to refill reservoirs in the summer months (which is also the main recreation season), Intertie alternatives had no significant effect on recreation at the Federal storage reservoirs.

LTR NO: TIE-2-134 ISS NUM: 06a COM NUM: 6
COMMENT: Page 24: The reservoirs for which these constraints have been developed should be identified. "When possible" should be defined to provide an understanding of exactly when and where discharges will be held to enhance downstream fishing.

RESPONSE: Please see discussion in Volume 1, Section 4.2.2.1, IDU Final EIS.

LTR NO: TIE-2-134 ISS NUM: 06a COM NUM: 7
COMMENT: Page 25: Provide information on the recreation conditions under the existing operation so that the reviewer can assess whether the changes brought about by this proposal are significant or not. Include end of September elevations.

RESPONSE: Changes described in Volume 1, Section 4.2.2 are relative to a theoretical future "No Action" condition as predicted by SAM. This is not the same as "existing conditions." Existing conditions are dependent on the specific water conditions which have occurred in the recent past. The base compared to in the SAM studies is the result of random selections of 200 water conditions. It is more appropriate to make comparisons to an "expected value" future condition rather than to the unique historical configurations of conditions occurring in the recent past.

A general summary of recreation activities at each of the Federal storage reservoirs is provided in Volume 1, Section 3.2.8. A discussion of recreation at Lake Roosevelt may be found in Water in Action-Grand Coulee Dam and Lake Roosevelt, 1986.

Changes in reservoir levels for all months may be found in Section 4.2.1 and Volume 4, Appendix C.

LTR NO: TIE-2-134 ISS NUM: 06a COM NUM: 8
COMMENT: Page 25: Downstream recreation impacts should be addressed as to whether or not they are "amenable to analysis using the SAM."

RESPONSE: Downstream recreation impacts are discussed in Volume 1, Section 4.2.2. Little specific information is available on the effects of flows on downstream recreation. In addition, flows downstream of reservoirs change on an hourly basis to accommodate power needs as well as fish, recreation, and other system requirements. Therefore, recreation impacts resulting from flow changes are addressed in a rather general way.

LTR NO: TIE-2-140 ISS NUM: 06a COM: 15
COMMENT: Page 25, paragraph two: More specific data should be provided on the accessibility of boat ramps. Are all ramps installed with the same degree of slope?

RESPONSE: A listing of boat ramps and their minimum usable elevations may by found in Volume 4, Appendix C of the Final EIS for Grand Coulee and Hungry Horse reservoirs. The number of usable boat ramps was used to calculate recreation indices for these projects. Boat ramp slope was not considered in the analysis. Minimum usable elevation was the only factor considered.

LTR NO: TIE-2-140 ISS NUM: 06a COM: 16
COMMENT: Page 25, last sentence: Are there any changes in the timing of the flows (seasonal or daily) that could impact recreation?

RESPONSE: Flow changes resulting from Intertie decisions are expected to be relatively small, both on a seasonal and daily basis. These changes are not expected to to affect recreation. (See Volume 1, Section 4.2.2.)

LTR NO: TIE-2-140 ISS NUM: 06a COM: 17
COMMENT: Page 26: In discussing the percentage change in the various indices, a table showing monthly data should be included to support the conclusions. Additionally, the actual number of boat ramps and visitor use should be included.

RESPONSE: Monthly recreation indices for Libby are provided in Volume 1, Section 4.2.2 of the Final EIS. Monthly indices for Hungry Horse, Grand Coulee, and Dworshak are provided in Volume 4, Appendix C. A listing of boat ramps or usage versus reservoir elevation is also provided in Appendix C. Annual usage figures by reservoir are given in Volume 1, Section 3.2.8. Information on actual use by boat ramp is not included.

LTR NO: TIE-2-140 ISS NUM: 06a COM: 18
COMMENT: Page 26, last paragraph: What is the basis for the statement that "no mitigation would be required for recreation." If this is a conclusion drawn from the impact analysis, then it should be stated as such. If there is some other reason(s), it should be included here.

RESPONSE: The conclusion that no mitigation for recreation is required is based upon study results which indicate that summer reservoir levels and availability of recreational facilities are not significantly affected by Intertie decisions.

LTR NO: TIE-2-128 ISS NUM: 06b COM NUM: 13
COMMENT: PNUCC agrees that there are no significant impacts to recreational resources.

RESPONSE: No response necessary.

LTR NO: TIE-2-134 ISS NUM: 06b COM NUM: 9
COMMENT: Page 25: A more thorough explanation of the possible increased frequency of reaching minimum and maximum flow levels is necessary.

RESPONSE: The system will continue to be operated within constraints established by project owners. Therefore, maximum and minimum flow levels will continue to be met. The only impact which can then occur is between those bounds. It is theoretically possible to reach maximum and minimum flow levels more frequently; however, this is the greatest impact which could occur and is not possible to predict.

LTR NO: TIE-2-134 ISS NUM: 06b COM NUM: 10
COMMENT: Page 25, paragraph 4, eighth sentence: The data which would support the statements [Operations at Libby, Hungry Horse, Albeni Falls, and Dworshak should be minimally affected because those projects are currently operated to maximize peaking capability.], should be provided in this report and in the IDU EIS.

RESPONSE: A survey of project operating data for 1986 and 1987 indicates that Albeni Falls was run at constant discharge, Hungry Horse and Dworshak could have been used for additional peaking about 5 percent of the time. Libby had additional peaking available about 15 percent of the time, however, this was mostly on weekends when additional peaking would not be needed. Please see Volume 1, Section 4.2.1.2 of the Final EIS.

LTR NO: TIE-2-134 ISS NUM: 06b COM NUM: 11
COMMENT: Page 26: An explanation of the differences in the seasonal recreation index at Hungry Horse is needed.

RESPONSE: The differences reported in the seasonal recreation index at Hungry Horse resulting from formula allocation alternatives occur during all summer months in 1988. Differences are considerably smaller in other years. On a seasonal average basis, in 1988 the maximum difference between the pre-IAP and Proposed Formula Allocations is 0.8 percent--an increase from 68.6 percent of boat ramps being available in the Pre-IAP case to 69.4 percent being available with the Proposed Formula Allocation. Additional data on recreation indices may be found in Volume 4, Appendix C.

LTR NO: TIE-2-134 ISS NUM: 06b COM NUM: 12
COMMENT: Page 26, paragraph 4: Paragraphs 5 and 6: An explanation of these seemingly contrary findings is needed.

RESPONSE: As shown in Table 4.2.5 in the IDU Final EIS, reservoir levels during the summer months are minimally affected by firm marketing alternatives. This, in turn, leads to very small changes in the recreation index.

LTR NO: TIE-2-134 ISS NUM: 06b COM NUM: 13
COMMENT: Page 26, paragraph 8: The statement "No mitigation would be required for recreation" appears premature. An alternative would be to work with the Bureau of Reclamation and the Forest Service, as BPA is with the National Park Service at Grand Coulee, to determine impacts, if any, and estimate costs to modify facilities if necessary.

RESPONSE: In the course of these studies, no changes in operations have been identified which would lead to adverse effects on recreation at Federal reservoirs. The ongoing study with the National Park Service is intended to identify potential modifications to existing recreational facilities which would enhance use of the facilities over a wider range of reservoir levels than is currently possible. The Park Service study is not a study of recreational impacts per se and is not related to Intertie decisions.

LTR NO: TIE-2-134 ISS NUM: 06b COM NUM: 14
COMMENT: Page 26, paragraph 8: Any policy which may dictate modifying recreational facilities to better accommodate fluctuating lake levels inherent to a power reservoir should be applied equally to every reservoir or other resource affected by Intertie Development and Use.

RESPONSE: As stated in response to Comment TIE-2-134, 06b, 13 above, the Park Service study at Grand Coulee is not related to Intertie development decisions. BPA agreed to assist with funding for

a study to look at the feasibility of upgrading certain recreation facilities at Grand Coulee. At this time, BPA has not agreed to help fund any facility changes.

LTR NO: TIE-2-128 ISS NUM: 07a COM NUM: 14

COMMENT: We disagree with BPA's conclusion on cultural resources. The major damage to cultural resources would have occurred, and been mitigated for, when the dam was built and the reservoir filled. It is inappropriate for BPA to suggest that they enter into memoranda of agreement to develop comprehensive archeological plans for each reservoir.

RESPONSE: Section 106 of the National Historic Preservation Act of 1966, 16 U.S.C. 470, et seq., requires BPA to take into account the effect of its undertakings on any property that is included in or eligible for inclusion in the National Register of Historic Places. Advisory Council on Historic Preservation regulations (36 CFR Part 800) describe in detail the manner in which BPA must fulfill its responsibilities under Section 106. IDU actions may potentially affect properties that are on or may be eligible for the National Register, but these effects cannot be fully determined at this time. This is partly because information about the existence and/or significance of cultural resources within the areas of potential effect (i.e., the Grand Coulee, Dworshak, Libby, Albeni Falls, and Hungry Horse reservoirs) is lacking. Although construction and operation of these hydroelectric projects has certainly caused extensive damage to cultural resources, damage continues to occur and IDU actions may aggravate the problem at some sites. All of these hydroelectric projects were constructed prior to enactment of most laws now protecting cultural resources, and appropriate resource inventory, evaluation, and mitigation is far from complete. BPA is developing a Programmatic Agreement that provides for further identification and evaluation of potentially affected resources, and mitigation of a share of the continuing impacts in proportion to the incremental increase of impact predicted to be caused by proposed IDU actions. Implementation of the Agreement would be in partnership with the Corps of Engineers and the Bureau of Reclamation. This mitigation adequately protects these resources from the incremental effects foreseen from proposed IDU actions.

LTR NO: TIE-2-119 ISS NUM: 07b COM NUM: 1

COMMENT: We look forward to BPA's consultation and the development of a Memorandum of Agreement regarding cultural resource issues.

RESPONSE: Regarding IDU actions, BPA is satisfying its responsibilities for cultural resource preservation with a Programmatic Agreement under the provisions of 36 CFR Part 800. The Washington, Idaho, and Montana State Historic Preservation Officers are consulting parties in developing the Agreement.

LTR NO: TIE-2-134 ISS NUM: 07b COM NUM: 15

COMMENT: Page 28, paragraph 1: The effects of lower reservoir elevations depend on the particular distribution of sites within each reservoir to be affected by IDU. Few sites are recorded at lower elevations because reservoirs on the Columbia River were not thoroughly surveyed before construction.

RESPONSE: Comment noted. A Programmatic Agreement for cultural resource protection is expected to include provisions for more thorough resource surveys.

LTR NO: TIE-2-141

COMMENT: The projected impacts of the intertie development and use alternatives cannot be predicted with certainty and BPA should acknowledge this limitation. The methods of analysis that BPA will use in its Final EIS are reasonable. BPA should plan to work closely with the NWPPC's monitoring and evaluation program. In satisfying its NEPA obligations, BPA should continue to be guided by and act consistently with the Council's Fish and Wildlife Program. The Council believes that a coordinated impact mitigation and management strategy will produce the best long-run results. Unintegrated mitigation projects could be counter-productive. Mitigation measures not addressed in the existing Fish & Wildlife Program should be considered as amendments to the Program.

RESPONSE: No response needed in the IDU Final EIS. This letter is incorporated in the administrative record and will be considered at the time of the decision.

PART 3

Revised Intertie Access Policy

Revised Draft Long-Term Intertie Access Policy

Close of Comment 2/19/88

Letter Number	Commenter/Affiliation
LTIAP-3-70	David E. Piper, Pacific Northwest Generating Company
LTIAP-3-71	Robert E. Orton, City of Port Angeles, Washington
LTIAP-3-72	James C. Holcombe, San Diego Gas & Electric
LTIAP-3-73	Jon F. Jacquot, State of Wyoming Public Service Commission
LTIAP-3-74	F. Lorraine Bodi, U.S. Department of Commerce - National Marine Fisheries Service
LTIAP-3-75	Stuart Gardiner, Pacific Gas & Electric
LTIAP-3-76	John A. Kwiatkowski, Bureau of Land Management
LTIAP-3-77	Marlin E. Binger, U.S. Department of Transportation
LTIAP-3-78	Stanley Hulett, California Public Utilities Commission & Charles Imbrecht, California Energy Commission
LTIAP-3-79	INCORRECTLY LOGGED, REMOVED FROM COMMENT PACKAGE
LTIAP-3-80	Channing D. Strother, Jr., City of Vernon, California
LTIAP-3-81	Bruce J. Lovelin, Northwest Irrigation Utilities
LTIAP-3-82	John Carr, Direct Service Industries, Inc.
LTIAP-3-83	Kenneth R. Coyle, Ferry County PUD No. 1
LTIAP-3-84	Bill McMillen, Clark-Skamania Flyfishers
LTIAP-3-85	Harold Haake, Wasco County PUD
LTIAP-3-86	Ralph Zusman
LTIAP-3-87	John Whalen, Harvey Warnaca, Robert Olsen Mason County PUD No. 3
LTIAP-3-88	DUPLICATE LETTER - REMOVED FROM LOG
LTIAP-3-89	Gordon F. Snow, Resources Agency of California
LTIAP-3-90	Byron Wagner, Big Bend Electric Coop.
LTIAP-3-91	Wendell Phillips
LTIAP-3-92	Sharon Nelson, Richard Casad, A.J. Pardini, Washington Utilities & Transportation Commission
LTIAP-3-93	Cicely M. McKendrick
LTIAP-3-94	Sandra Grady
LTIAP-3-95	Josephine B.R. von Hippel, M.D.
LTIAP-3-96	Eric Weber
LTIAP-3-97	Michele McKay
LTIAP-3-98	Kristen Shepherd, Washington Wilderness Coalition
LTIAP-3-99	Jolene Unsoeld, Washington State Representative
LTIAP-3-100	Ray Foleen, Non-Generating Public Utilities
LTIAP-3-101	Howard Easton, Basin Electric Power Coop.
LTIAP-3-102	Mark Glaess, Oregon Rural Electric Coop.
LTIAP-3-103	Jack Heaston, Harney Electric Coop.
LTIAP-3-104	Russell Dorran, Umatilla Electric Coop.
LTIAP-3-105	Jack Remington
LTIAP-3-106	David Ives
LTIAP-3-107	Jan Howell
LTIAP-3-108	M. E. Covert
LTIAP-3-109	James L. Sanders, Clark Co. Public Utility District
LTIAP-3-110	Ken Canon, Assoc. of Public Agency Customers
LTIAP-3-111	Robert J. Labrie, Montana Power Co.
LTIAP-3-112	M. E. Hoehne, Longview Fibre Co.
LTIAP-3-113	Joseph R. Blum, Washington Dept. of Fisheries
LTIAP-3-114	B. E. Covin, Pacific Hydro
LTIAP-3-115	William DeBoer

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Letter Number	Commenter/Affiliation
LTIAP-3-116	Dean Miller, Perry Swisher, Ralph Nelson, Idaho Public Utilities Commission
LTIAP-3-117	Robert V. Myers, Puget Sound Power & Light
LTIAP-3-118	Stephen A. Wille, Southwest Washington Anglers
LTIAP-3-119	Merrill S. Schultz, Intercompany Pool
LTIAP-3-120	Einar Wold, U.S. Department of Commerce - National Marine Fisheries Service
LTIAP-3-121	John L. McMahan, Grant County PUD No. 2
LTIAP-3-122	Gary A. Dahlke, Washington Water Power
LTIAP-3-123	Terence L. Mundorf, Western Public Agencies Group
LTIAP-3-124	Jerry Garman, Public Generating Pool
LTIAP-3-125	Daniel M. Ogden, Jr., Public Power Council
LTIAP-3-126	William S. Whelan, Attorney General, Idaho
LTIAP-3-127	Governor Ted Schwinden, Montana
LTIAP-3-128	Ric Brown, Ravalli Co. Electric Coop., Inc.
LTIAP-3-129	J. Leon Smith, Cowlitz Co. PUD
LTIAP-3-130	Mark Crisson, Tacoma Public Utilities
LTIAP-3-131	J. W. Marshall, Idaho Power Co.
LTIAP-3-132	Ralph Cavanagh, Natural Resources Defense Council
LTIAP-3-133	Robert E. Dyer, Portland General Electric Co.
LTIAP-3-134	Governor Neil Goldschmidt, Oregon
LTIAP-3-135	Al Wright, Pacific Northwest Utilities Conference Committee
LTIAP-3-136	Randall W. Hardy, Seattle City Light
LTIAP-3-137	Jean Reeder, Eugene Municipal Utilities
LTIAP-3-138	Rodney M. Boucher, Pacific Power & Light
LTIAP-3-139	Morris Brusett, Northwest Power Planning Council
LTIAP-3-140	Wilbur Anderson, Vigilante Electric Coop., Inc.
LTIAP-3-141	Joseph W. Nadal, Aleka Kitchen, Pacific Northwest Generating Company
LTIAP-3-142	United States Congress
LTIAP-3-143	Jeanne Norton, Izaak Walton League of America, Inc., Portland Chapter
LTIAP-3-144	Ed & Bonnie - Rod & Evie - Ed & Jennie Schein and Families
LTIAP-3-145	Ronald Gross
LTIAP-3-146	Richard Murray
LTIAP-3-147	Joyce Campbell
LTIAP-3-148	Ruth & Harold Deery
LTIAP-3-149	Sally Stephenson
LTIAP-3-150	Willard D. Fields, Chelan Co. PUD No. 1
LTIAP-3-151	Laura Smith, The Nature Conservancy
LTIAP-3-152	Jack Howerton, Washington Dept. of Wildlife
LTIAP-3-153	David Brown
LTIAP-3-154	Stan Mrzygod, Spokane Canoe & Kayak Club
LTIAP-3-155	Mark Lawler, Sierra Club, Cascade Chapter
LTIAP-3-156	Joseph J. Donofrio, M.D., La Grande Clinic
LTIAP-3-157	Georgia J. Frazier
LTIAP-3-158	Bruce S. Bistline, Bistline Law Office

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Letter Number	Commenter/Affiliation
LTIAP-3-159	Sharlon Willows, Protect Park Resources, The Coalition
LTIAP-3-160	Kenneth R. Pedde, U.S. Department of the Interior - Bureau of Land Management
LTIAP-3-161	Charles Mabbott
LTIAP-3-162	Don Godard, Canby Utility Board
LTIAP-3-163	Richard Heitman, Benton Rural Electric Association
LTIAP-3-164	Mari Hoffmann-Nelson
LTIAP-3-165	E. Zahn
LTIAP-3-166	Kate Crockett
LTIAP-3-167	Dean Miller, Perry Swisher, Ralph Nelson Idaho Public Utilities Commission
LTIAP-3-168	Laura A. Harders
LTIAP-3-169	Doug Gresham
LTIAP-3-170	Ralph Zusman
LTIAP-3-171	Mike Smith
LTIAP-3-172	Steve Fransen, Skagit System Coop.
LTIAP-3-173	James R. Fry, U.S. Army, Corps of Engineers
LTIAP-3-174	Nancy & Jim Kroening
LTIAP-3-175	Joan Edwards, Sierra Club, Cascade Chapter
LTIAP-3-176	Linda Meister
LTIAP-3-177	Scott Weston
LTIAP-3-178	Harold C. Miles, Idaho Consumer Affairs, Inc.
LTIAP-3-179	Sharon Nelson, Richard Casad, A.J. Pardini, Washington Utilities and Transportation Commission
LTIAP-3-180	Ralph Cavanagh, Natural Resources Defense Council
LTIAP-3-181	Merrill S. Schultz, Intercompany Pool
LTIAP-3-182	James W. Beck, Transmission Agency of Northern California
LTIAP-3-183	Frank Hahn, Sacramento Municipal Utility District
LTIAP-3-184	Sharon Little & Adele Newton, Oregon League of Women Voters
LTIAP-3-185	Ron Koenig
LTIAP-3-186	L. I. Bell, B.C. Hydro
LTIAP-3-187	Robert Kendall, Southern California Edison
LTIAP-3-188	Stuart Gardiner, Pacific Gas & Electric
LTIAP-3-189	David G. Coleman, Western Area Power Administration
LTIAP-3-190	Michael W. McDonald, Northern California Power Agency
LTIAP-3-191	J. Lynn Rasband, Utah Power & Light Co.
LTIAP-3-192	David Mahoney, Los Angeles Dept. of Water & Power
LTIAP-3-193	Robert V. Myers, Puget Sound Power & Light Company
LTIAP-3-194	Jerry Garman, Public Generating Pool
LTIAP-3-195	Gary A. Dahlke, Washington Water Power
LTIAP-3-196	James F. Kenney, San Diego Gas & Electric
LTIAP-3-197	Donald R. Clayhold, Benton Co. PUD No. 1
LTIAP-3-198	Richard E. Dyer, Portland General Electric
LTIAP-3-199	Peter G. Fairchild, California Public Utilities Commission
LTIAP-3-200	Jean Reeder, Eugene Water and Electric Board
LTIAP-3-201	Terence L. Mundorf, Western Public Agency Group
LTIAP-3-202	Al Wright, Pacific Northwest Utilities Conference Committee
LTIAP-3-203	Michael Rossotto, Friends of the Earth
LTIAP-3-204	S. Timothy Wapato, Columbia River Inter-Tribal Fish Commission

Revised Draft Long Term Intertie Access Policy

(continued)

Letter Number	Commenter/Affiliation
LTIAP-3-205	Susan Wood Roy
LTIAP-3-206	Marc Sullivan, Northwest Conservation Act Coalition
LTIAP-3-207	John Murray
LTIAP-3-208	Einar Wold, U.S. Department of Commerce - National Oceanic and Atmospheric Administration
LTIAP-3-209	Millard Trout, Tillamook PUD
LTIAP-3-210	Randall W. Hardy, Seattle City Light
LTIAP-3-211	Dennis Rohr, Mid-Columbia PUDs
LTIAP-3-212	Robert L. Miller, Montana Power Company
LTIAP-3-213	Morris Brusett, Northwest Power Planning Council
LTIAP-3-214	John D. Carr, Direct Service Industries, Inc.
LTIAP-3-215	Marc Sullivan, Northwest Conservation Act Coalition
LTIAP-3-216	Jerry M. Conley, Idaho Fish & Game
LTIAP-3-217	Kent Henderson, Idaho Wildlife Federation
LTIAP-3-218	William Chamberlain, Jonathon Blees, California Energy Commission

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The comments in Part 3 were taken from letters sent to BPA in response to the public comment period on the Revised Long-Term Intertie Access Policy. Some of these comments raise issues that should be addressed in the IDU Final EIS. Therefore, BPA responses have been prepared for these comments below. The remainder of the comments (policy oriented rather than environmental) will be addressed in BPA's decision document.

LTR NO: LTIAP-3-120 ISS NUM: 08f COM NUM: 10
COMMENT: The IAP poses additional issues that require further evaluation under NEPA. First the impacts of limiting the IAP to protected areas should be explored. Second, the incentive effect and related impacts of excluding protected areas outside the Columbia should be analyzed.

RESPONSE: BPA does not need to analyze the environmental impacts of limiting protected area designations to stream reaches within the Columbia Basin. Protected areas were designated pursuant to the fish and wildlife provisions of the Pacific Northwest Power Act. In making these designations BPA, the Council, and state and Federal fish and wildlife agencies and tribes never considered environmental values.

Since each new project must be licensed by FERC, and FERC licensing decisions are conducted under the National Environmental Policy Act, the environmental effects associated with developments -- both inside and outside protected areas -- will be addressed as specific projects are considered. Any analysis BPA might conduct to anticipate the environmental effects associated with specific developments would be too speculative to warrant meaningful results.

It is possible that protected area designations within the Basin may make hydro developments outside the basin seem comparatively more attractive. However, there is no reason to expect that the environmental effects resulting from development outside protected areas will be greater than would have occurred if protected areas had not been designated.

LTR NO: LTIAP-3-120 ISS NUM: 08f COM NUM: 10
COMMENT: Third, in keeping with recent court decisions, worst case analysis should be used to evaluate impacts where data and information are uncertain.

RESPONSE: BPA believes that what is required is a reasonable assessment of foreseeable environmental effects. Federal agencies only prepare a "worse-case analysis" where information is unknown. 40 CFR ¶1502.22. Rather than conjure a "worst case," BPA has developed state-of-the art forecast methodology to obtain the best possible information. No "worst case" is needed because there are no gaps in knowledge.

LTR NO: LTIAP-3-120 ISS NUM: 08f COM NUM: 10
COMMENT: And fourth, also in keeping with recent court decisions, further NEPA review should include detailed mitigation alternatives for identified impacts.

RESPONSE: The IDU Final EIS discusses mitigation in the following sections of Volume 1: Section 4.2.2.5 for cultural resources and Section 4.2.3.3.2 for resident fish. There is no discussion of mitigation alternatives for anadromous fish because of BPA's determination of no significant impacts to anadromous fish based on planned fish bypass facilities improvements.

LTR NO: LTIAP-3-132 ISS NUM: 08f COM NUM: 19 NRDC
COMMENT: Before approving any long-term grant of Intertie access to any utility, Northwest or otherwise, BPA must comply with the National Environmental Policy Act (NEPA). The broad Environmental Impact Statement on the proposed policy will not, of course, substitute for individualized environmental analysis of particular transactions; no such transaction is identified or evaluated in what is clearly intended as a generalized programmatic assessment. For transactions that could result in substantial environmental damage, access will have to await BPA's preparation of additional environmental impact statements.

For utilities that find this prospect burdensome, there is a straightforward solution: structure the transaction to rule out, in advance, the possibility of significant environmental impacts. The Policy would perform a valuable service for all concerned by specifying the preconditions for an agency finding of "no significant impact." BPA's own proposed power sale to Southern California Edison affords a useful precedent.

RESPONSE: The IDU EIS was intentionally scoped to support a number of decisions on proposals for granting Intertie access. Transactions that fall within the scope of ranges analyzed in the IDU EIS would, generally, require no further environmental evaluation.

Whether a supplemental or revised environmental document will be needed will depend on whether changes made after the IDU EIS is filed are "significant." See generally 40 CFR Section 1502.9(c). If there are significant changes relevant to the environment, BPA would first prepare supplemental or revised environmental documents prior to granting access to the BPA-controlled portion of the Intertie.

LTR NO: LTIAP-3-141 ISS NUM: 08 COM NUM: 01
COMMENT: Much attention has focused in recent months on the enormous economic stakes involved in your forthcoming Intertie Access Policy. We are sure you need no reminder that the

environmental stakes are at least as large, and we know that you will make every effort to ensure that the Intertie does not become a vehicle for damaging Northwest air or water resources.

RESPONSE: Chapter 4 of the EIS describes the environmental impacts of alternatives related to Intertie size and use. Impacts on Pacific Northwest air and water resources are projected to be very small.

LTR NO: LTIAP-3-170 ISS NUM: 08 COM NUM: 01
COMMENT: After reviewing the LTIAP comments I am disturbed that it appears that it contains so little public input and concern regarding fish and wildlife protection both in and outside of the Columbia River Basin.

RESPONSE: Comment noted.

LTR NO: LTIAP-3-195 ISS NUM: 08 COM NUM: 04
COMMENT: The real irony in all of this is that the environment is likely to suffer the most from the policy. In the absence of seasonal exchanges, new thermal resources are more likely to be constructed and sooner than would otherwise be the case. In the absence of reliable Intertie transmission from BPA, Northwest utilities will turn to other transmission routes which will result in inefficient use of the Intertie and greater impairment of the environment than would otherwise occur.

RESPONSE: The Proposed LTIAP, as contained in Volume 1, does permit seasonal exchanges and provides for reliable access to the Intertie for Northwest utilities.

LTR NO: LTIAP-3-91 ISS NUM: 08f COM NUM: 01
COMMENT: I understood that BPA was making a study of the effects that high voltage transmission lines had on animal life, both human and animal. I assume that the results of the study will be analyzed in the EIS that will precede the opportunity for the public to comment.

RESPONSE: Information on electromagnetic effects is addressed in the California/Oregon Transmission Project EIS. Results of BPA's studies are included in the COTP EIS. The EIS on the upgrade of the Eugene/Medford line also addresses this topic.

LTR NO: LTIAP-3-217 ISS NUM: I08b COM NUM: 002
COMMENT: Current BPA practice does not provide wildlife and fish values substantive equity of treatment with power production and sale as required.

RESPONSE: Comment noted. The Northwest Power Act, §(h)(11)(A)(i), requires Federal agencies to exercise their responsibilities "in a manner that provides equitable treatment for fish and

wildlife with the other purposes for which [the hydroelectric] system and facilities are managed and operated." BPA believes it is meeting this requirement of law by taking into account the Fish and Wildlife Program of the Power Planning Council, and by taking other actions "to adequately protect, mitigate, and enhance fish and wildlife."

LTR NO: LTIAP-3-218 ISS NUM: I08d COM NUM: 001
COMMENT: We question whether the Intertie Access Policy is the proper mechanism for addressing fish and wildlife protection. BPA should be concerned about fish and wildlife protection whether the energy from a new resource in a protected area is used to serve a Northwest load or is exported to California. We urge BPA to address this problem in a more comprehensive manner rather than in the LTIAP.

RESPONSE: BPA will be concerned if energy from a new resource might harm fish and wildlife whether the energy is used to serve a Northwest load or an extraregional load. BPA will evidence these concerns in a variety of forums and different ways, particularly if the construction and operation of new hydro resources might interfere with or destroy the effectiveness of actions BPA has taken and expenditures BPA has made on behalf of fish and wildlife resources. BPA believes that the Intertie Access Policy is one appropriate mechanism for addressing such concerns.

LTR NO: LTIAP-3-216 ISS NUM: I08d6 COM NUM: 001
COMMENT: If the Power Planning Council (PPC) does not implement a Protected Areas Program, will BPA implement its own Protected Area Program for Intertie Access? Will BPA use the PPC's Protected Area Designation if it only protects anadromous fish and does not address resident fish and wildlife?

RESPONSE: BPA intends to pursue the "protected areas" concept for both anadromous and resident fish within the Columbia Basin. In so doing, BPA will work with the Northwest Power Planning Council to assure program coordination as appropriate.

LTR NO: LTIAP-3-217 ISS NUM: I08f COM NUM: 001
COMMENT: The Idaho Wildlife Federation wishes to inform you that we concur in [the] analysis that the proposed Intertie program continues to pose unacceptable risks to the wild salmon and steelhead resource of the upper Columbia River Basin. We suggest that without the specter of the Intertie, projects would not be considered economically feasible by their instigators.

RESPONSE: We believe the Proposed IAP will eliminate incentives to construct new resources in a manner that poses a threat to wild salmon and steelhead. The Proposed IAP prohibits access to new resources constructed in protected areas. Within the Columbia Basin, protected areas were designated on the basis

of the presence--or potential presence--of anadromous fish. Since the Proposed policy prohibits access to new projects in areas where any salmon or steelhead are--or could be--present, we believe the concerns of the Idaho Wildlife Federation have been addressed.

Instigators of new projects located in protected areas have no reason to expect that they will gain access to the intertie. Since the policy automatically reduces a utility's existing intertie transactions if that utility uses power from a protected area resource, there may be no economic incentive to construct a new resource in an area where it may threaten anadromous fish.

LTR NO: LTIAP-3-217 ISS NUM: I08f COM NUM: 003

COMMENT: The calculations of availability of so-called "surplus power" to be sold under these contracts do not adequately address the effects of low water years such as occurred in 1987 and is projected for 1988. Recent research suggests these low water years are not flukes and may well be often repeated in the near future. The effect of such low years, coupled with an increased demand for power could be disastrous to our fisheries. The IWF concurs that the Hydro Operations Information Paper does adequately address wildlife and fisheries concerns.

RESPONSE: Currently, the majority of surplus firm power in excess of existing long-term contracts is shifted into the fall for spot market sales. This causes reduced flows during the spring and summer fish outmigrations. Under the additional long-term contracts scenarios, this surplus firm would be marketed during the spring and summer months causing better fish flows than currently exist during low-water years. The Final EIS adequately addresses these low water conditions with the simulation of the hydrosystem with SAM.

(VS6-PG-6196K)

DOE/EIS - 0125-F