

UNITED STATES OF AMERICA  
FEDERAL ENERGY REGULATORY COMMISSION

Pacific Electric Operations

Project No. 2420-001  
Utah

ORDER ISSUING NEW LICENSE  
(Major Project)  
(ISSUED APRIL 29, 1994)

Pacific Electric Operations (Pacific) filed a license application under Part I of the Federal Power Act (FPA) for the continued operation and maintenance of the 30-megawatt (MW) Cutler Project located on the Bear River, in Cache and Box Elder Counties, near Logan, Utah. <sup>1</sup> The project would produce about 106 gigawatthours (GWh) of electricity annually.

Notice of the application has been published. No agency or intervenor objected to issuance of this license. Comments received from interested agencies and individuals have been fully considered in determining whether to issue this license.

The staff issued a draft environmental assessment (EA) for this project on January 27, 1994. The staff analyzed and considered all the comments filed pursuant to the draft EA. The staff issued a final EA on April 7, 1994, which is attached to and made part of this license order. The staff also prepared a Safety and Design Assessment (S&DA), which is available in the Commission's public file for this project.

The American Whitewater Affiliation and American Rivers, Inc. filed a timely joint motion to intervene seeking to protect the nondevelopmental values of the Bear River. They believe there are significant opportunities on the Bear River for enhancing fish, wildlife, and recreation resources.

The Bear River Canal Company (BRCC) filed a late motion to intervene which was granted by a notice issued on June 17, 1993. BRCC is concerned that operational changes at the project could affect water delivery for irrigation.

Mr. Paul Stewart also filed a late motion to intervene which was granted by a notice issued on September 7, 1993. Mr. Stewart is a local farmer and owns land adjacent to the project

1 The original license was issued on December 23, 1968, and expired on December 31, 1993. 40 FPC 1494. The project is currently operating under an annual license that went into effect when the original license expired, per Section 15(a)(1) of the FPA.

reservoir. He is concerned about impacts to landowners that may occur from Pacific Corp's plans to enhance public access and wildlife habitat.

The concerns raised in these motions are addressed in appropriate sections of the EA.

#### PROJECT DESCRIPTION

The existing project consists of a 109-foot-high concrete gravity arch dam with a spillway containing four 14-foot-high radial gates, a reservoir with a surface area of about 5,459 acres and a storage capacity of about 13,200 acre-feet, an 18-foot-diameter steel-lined conduit passing through the dam, a 1,160 foot-long steel penstock, an 81-foot-high steel surge tank, two 112-foot-long steel penstocks, a powerhouse with a total installed capacity of 30 MW, and appurtenant facilities. See a detailed project description in ordering paragraph B(2).

#### PACIFIC CORP'S PLANS AND CAPABILITIES

##### Pacific Corp's Record as a Licensee

In accordance with Sections 10 and 15 of the FPA, the staff evaluated Pacific Corp's record as a licensee for these areas: (1) conservation efforts; (2) compliance history and ability to comply with the new license; (3) safe management, operation, and maintenance of the project; (4) ability to provide efficient and reliable electric service; (5) need for power; (6) transmission line improvements; and (7) project modifications. I accept the staff's findings in each of these areas.

Here are their findings:

##### 1. Section 10(a)(2)(C): Conservation Efforts

The staff reviewed Pacific Corp's efforts to conserve electricity and found that it: (1) uses all the energy generated by the project in its system; (2) encourages conservation by its customers; and (3) maintains extensive ongoing programs to reduce system peak demand.

Its plans and activities to promote and achieve conservation of electric energy and to reduce the peak demand for generating capacity include: (1) energy audits; (2) water heater insulation; (3) implementation of demand-side management programs; and (4) making loans available for residential weatherization.

Pacific Corp's plans meet the statutory requirements of the

Public Service Commission of Utah. Its efforts also conform to the development plans and programs of the Pacific Northwest Electric Power and Conservation Planning Council and its Regional Energy Plan.

Therefore, PacifiCorp is making a good faith effort to conserve electricity.

2. Sections 15(a)(3)(A) and 15(a)(2)(A): Compliance History and Ability to Comply with the New License

The staff reviewed PacifiCorp's compliance with the terms and conditions of the existing license and found that PacifiCorp's overall record of making timely filings and compliance with its license is satisfactory.

Based on past performance, PacifiCorp has the ability to comply with terms of the new license.

3. Section 15(a)(2)(B): Safe Management, Operation, and Maintenance of the Project

PacifiCorp's proposal wouldn't adversely affect the project's operation and safety.

Under Part 12 of the Commission's regulations, PacifiCorp filed the fourth Part 12 Safety Inspection Report on December 20, 1985. PacifiCorp also has an emergency action plan (EAP) on file in the plant office. PacifiCorp-East, regional office for the licensee, conducts annual unannounced tests of the EAP and all personnel receive annual scheduled training. The staff found that the report and plan are adequate.

PacifiCorp shows regard for public safety by: (1) installing fences and gates at the powerhouse and dam to deter unauthorized access; (2) placing warning signs at dangerous areas; and (3) installing safety barriers at the dam to keep boaters away from the spillway.

Therefore, the project is safe for continued use and operation.

4. Section 15(a)(2)(C): Ability to Provide Efficient and Reliable Electric Service

The staff examined PacifiCorp's record of lost generation due to unscheduled outages and found that the outages have been

minimal and lost generation was not significant compared to the total annual generation for this project.

Therefore, Pacific Corp is operating in an efficient and reliable manner.

5. Section 15(a)(2)(D): Need for Power

The project is located in the Northwest Power Pool area of the Western Systems Coordinating Council. Utah Power and Light Company (UP&L) is an operating utility system owned by Pacific Corp. The Cutler Project is part of UP&L's system operating in the state of Utah.

Pacific Corp's operation of electrical systems, including the operation of the project, is coordinated using guidelines prescribed by the region's Northwest Power Planning Council (Council). The Council forecasts that the region will need new resources sometime between 1995 and 2004 in the most likely medium scenario.

The Bonneville Power Agency places a somewhat higher probability on the medium forecast than the Council does. Its forecast shows that additional resources would be needed by 1994. The Pacific Northwest Utilities Conference Committee's 1993 regional firm energy loads and resources projections show resource deficits occurring sometime in 1993.

The project's average annual generation of 106 GWh, which is a small part of UP&L's total requirement, helps to lower system deficits, reduces costs to ratepayers, and reduces emission of noxious byproducts caused by the combustion of fossil fuels.

Therefore, the Cutler Project provides a necessary source of power for Pacific Corp.

6. Section 15(a)(2)(E): Transmission Line Improvements

Pacific Corp proposes no changes to the existing transmission system of the project.

The existing transmission system is sufficient, and no changes to the service affected by the project operation would be necessary whether the Commission issues a license for the project or not.

7. Section 15(a)(2)(F): Project Modifications

Pacific Corp is not proposing any major modifications to the project.

The staff looked at installing more capacity at the site and

determined that it is not feasible at this time. Therefore, no other project modifications are necessary.

#### WATER QUALITY CERTIFICATION

On August 13, 1991, Pacific Corp applied to the Utah Department of Environmental Quality (DEQ) for a water quality certification for the project, as required by section 401 of the Clean Water Act. On November 20, 1991, the DEQ accepted Pacific Corp's application, certified compliance to applicable state water quality standards, and granted the certificate (letter from Don A. Oster, Executive Secretary, Utah State Water Quality Board to Jim Burruss, Senior Environmental Analyst, Utah Power, November 20, 1991).

#### RECOMMENDATIONS OF FISH AND WILDLIFE AGENCIES

Section 10(j)(1) of the FPA requires the Commission to include license conditions based on recommendations of federal and state fish and wildlife agencies submitted pursuant to the Fish and Wildlife Coordination Act for the protection, mitigation, and enhancement of fish and wildlife. No fish and wildlife agency recommendations were filed for the project in response to our notice that the application was ready for environmental analysis.

#### COMPREHENSIVE PLANS

Section 10(a)(2) of the FPA requires the Commission to consider the extent to which a project is consistent with federal and state comprehensive plans for improving, developing, or conserving waterways affected by the project. Federal and state agencies have filed 5 plans that address various resources in Utah. Four plans are relevant to this project. 2 No conflicts were found.

- 2 (1) Whooping Crane recovery plan, Fish and Wildlife Service, 1986, Albuquerque, New Mexico; (2) North American Wildlife Management Plan, Fish and Wildlife Service and Canadian Wildlife Service, 1986, Department of the Interior, Twin Cities, Minnesota; (3) North American Waterfowl Management Plan, 1986, Fish and Wildlife Service and Canadian Wildlife Service, Department of the Interior; (4) Statewide Comprehensive Outdoor Recreation plan, 1985, Utah Department of Natural Resources, Division of Parks and Recreation, Salt Lake City, Utah.

## COMPREHENSIVE DEVELOPMENT

Sections 4(e) and 10(a)(1) of the FPA, 16 U.S.C. 797(e) and 803(a)(1), respectively, require the Commission to give equal consideration to all uses of the waterway on which the project is located. When the Commission reviews a hydropower project, the recreational, fish and wildlife, and other nondevelopmental values of the involved waterway are considered equally with its electric energy and other developmental values. In determining whether, and under what conditions, a hydropower license should be issued, the Commission must weigh the various economic and environmental tradeoffs involved in the decision.

To protect, mitigate continuing project impacts to, and enhance the environmental resources of the project area, PacifiCorp proposes to:

- ù Conduct a Bear River Basin study to aid in the development of new operating procedures for stabilizing reservoir elevations at the Cutler Project in order to enhance waterfowl nesting, fish spawning, and recreational use.
- ù Establish a permanent vegetated buffer strip, up to 200 feet wide, on project lands adjacent to the reservoir between State Highway 30 and the State Highway 23 bridge to limit shoreline erosion, remove sediments and nutrients from runoff, and enhance wildlife habitat. Under its buffer proposal, within 3 years of issuance of a new license, PacifiCorp would: (1) install up to 1.5 miles of gabions or riprap along the reservoir shoreline in this area; (2) stabilize an additional 2.0 miles of shoreline by planting deep-rooted shrubs and willows to reestablish vegetation; (3) reseed about 50.0 acres of tilled ground to create a grassland buffer strip; and (4) construct about 6.0 miles of fence to control cattle.
- ù Install four fish cover structures in the reservoir.
- ù Reduce impacts to spawning fish and waterfowl nesting by limiting reservoir water level fluctuations as an interim measure until completion of the above Bear River Basin study.
- ù Modify existing leases and land use practices on about 4,500 acres of currently leased project lands. Leases would be rewritten on about 300 acres of currently tilled ground to provide food and cover for migratory waterfowl, and up to an additional 6 miles of fence to enhance wildlife habitat would be installed.
- ù Notify the Utah State Historic Preservation Officer (SHPO)

if any historic sites are discovered during any maintenance or construction activities within the project area, and work with the SHPO to develop and install interpretive signs to describe the historical significance of the Cutler hydroelectric facilities.

- ù Enhance recreational opportunities by improving and enlarging the existing Benson marina, establishing seven new public access areas, constructing a walking trail, providing additional parking for hunters, and conducting a user survey.
- ù Mitigate impacts on wetlands due to the development of new recreation facilities.
- ù Incorporate the above proposals into a single resource management plan (RMP) for all project lands.

In addition to PacifiCorp's proposed environmental enhancement measures, the staff recommended that PacifiCorp prepare and implement a cultural resources management plan.

Based on the staff's independent review and evaluation of PacifiCorp's proposal, PacifiCorp's proposal with staff's additional recommendation, and the no-action alternative, I am issuing this license for the continued operation of the project as proposed with staff's additional recommendation.

Several elements of the the proposed project with staff's recommended cultural resources management plan would involve tradeoffs between environmental resources or would substantially affect project economics. The fish cover structures, the buffer zone and related wildlife habitat enhancements, and the enhancements to the recreational facilities would all involve significant costs. The staff's basis for our recommending these measures is as follows.

#### Fish Cover Structures

The four structures proposed by PacifiCorp would provide cover for game and forage fish in an area where cover is needed. The staff believes that the increase in fish habitat that would result would lead to increased public use of the reservoir fishery such that the \$8,000 to \$10,000 cost would be balanced by at least as much public benefits over the term of the license. Therefore, PacifiCorp should prepare a plan for installing the proposed fish cover structures in consultation with the Utah Division of Water Resources and the Fish and Wildlife Service.

## Vegetative Buffer Zone, Wildlife Habitat Enhancement, and Management Plans

Pacific Corp has proposed to develop a RMP to protect and enhance wildlife habitat, recreation, and for the continuation of managed agricultural uses at the project. Pacific Corp has proposed a number of specific measures to enhance riparian areas and wildlife habitat north of State Highway 30. The RMP would also contain the same kind of enhancement measures for all project lands south of State Highway 30.

Pacific Corp's proposed measures for lands north and south of State Highway 30 would enhance wildlife habitat. The buffer strip and seeded areas would provide food and cover for waterfowl and other wildlife. Also, the buffer strip would assist in reducing shoreline erosion and removing sediment and nutrients from sheet runoff, which would improve water clarity and may ultimately increase duck production. Including similar management techniques in the RMP, as Pacific Corp proposes, would enhance wildlife habitat south of State Highway 30. Enhancing project wildlife habitat would offset, in part, the cumulative impacts that agriculture, irrigation, hydroelectric projects, and industry have had on waterfowl in the Bear River Basin.

The staff believes that the public benefits that would accrue over the term of a new license through increased public use of the project area as a result of these measures (buffer zone - \$200,000; habitat enhancements - \$50,000; RMP - \$50,000) justifies their cost. Therefore, Pacific Corp should prepare a final RMP that includes the location and final design of the proposed measures for the buffer zone and wildlife habitat enhancements.

## Recreation Enhancements

There is an obvious need for additional, designated public access on the project reservoir. The lake is large, and is a significant recreation resource that is very near to a major population center. Further, this area of Utah has a growing population and many other lakes in this region are being used at near-capacity levels. Because Pacific Corp's proposed recreation developments would greatly enhance public access to the Cutler reservoir, and should lead to significantly greater use of the project area, the \$440,000 cost is justified.

## Conclusion

Fish and wildlife resources, water quality, and recreation would be enhanced under Pacific Corp's proposal. This order generally adopts, as have the resource agencies, Pacific Corp's proposal. The only change that is required is that a cultural resources management plan be prepared and implemented for the



project. This measure would not add a significant cost to PacifiCorp's proposal.

The combined cost for PacifiCorp's proposed enhancement measures for the project is \$751,000, plus \$55,000 per year for operation and maintenance. This equates to an average annual net cost, over the term of a 30-year license, of \$221,600.

With these measures, the project would continue to have net benefits to ratepayers based on the cost of power from alternative sources over the new license period.

I believe that the benefits explained above justify the cost to PacifiCorp. With these measures, the project would provide 106 GWh of energy annually helping to meet a part of the projected power need in the area. The clean energy that would be produced by the project would continue to displace fossil-fueled power generation, thereby conserving nonrenewable energy resources and reducing the emissions of noxious gases that contribute to atmospheric pollution and global warming.

#### LICENSE TERM

In 1986, the Electric Consumers Protection Act (ECPA) modified section 15 of the FPA to specify that any license issued shall be for a term that the Commission determines to be in the public interest, but not less than 30 years, nor more than 50 years. The Commission's policy, which establishes 30-year terms for those projects that propose little or no redevelopment or new construction, 40-year terms for those projects that propose moderate redevelopment or new construction, and 50-year terms for those projects that propose extensive redevelopment or new construction, is consistent with the FPA as modified by ECPA.

Since PacifiCorp does not propose any changes in the existing project works for the Cutler Project, I am issuing the new license for a term of 30 years.

#### SUMMARY OF FINDINGS

Background information, analysis of impacts, support for related license articles, and the basis for a finding of no significant impact on the environment are contained in the attached EA. Issuance of the license is not a major federal action significantly affecting the quality of the human environment.

The project will be safe if operated, and maintained in accordance with the requirements of this license. Analysis of related issues is provided in the S&DA.

I conclude that the Cutler Project does not conflict with any planned or authorized development, and is best adapted to the comprehensive development of the Bear River for beneficial public use.

The Director orders:

(A) This license is issued to the Pacific Corp Electric Operations (licensee) for a period of 30 years, effective the first day of the month in which it is issued, to operate and maintain the Cutler Project. This license is subject to the terms and conditions of the FPA, which is incorporated by reference as part of this license, and to the regulations the Commission issues under the provisions of the FPA.

(B) The project consists of:

(1) All lands, to the extent of the licensee's interests in those lands, as shown on exhibits G-1 through G-5 (FERC Drawing Numbers 18 through 22) of the application.

(2) The project consists of: (1) a 545-foot-long, 109-foot-high concrete gravity arch dam, with a spillway containing four 30-foot-wide by 14-foot-high radial gates; (2) a reservoir with a surface area of about 5,459 acres and storage capacity of about 13,200 acre-feet at an elevation of 4,407.5 feet mean sea level; (3) a 7-foot-diameter low-level sluiceway located near the base of the dam controlled by a slide gate; (4) an intake tower and cylinder gate with a maximum opening of 10 feet; (5) an 18-foot-diameter steel-lined conduit passing through the dam; (6) a 1,160 foot-long, 18-foot-diameter steel penstock; (7) an 81-foot-high, 45-foot-diameter steel surge tank; (8) two 112-foot-long, 14-foot-diameter steel penstocks that bifurcate from the surge tank; (9) a brick 60-foot by 123-foot powerhouse containing 2 generating units with a total installed capacity of 30 MW; and (10) appurtenant facilities.

The project works generally described above are more specifically described in exhibit A of the license application and shown by exhibit F:

Exhibit F-	FERC No. 2420-	Title
F-1	12	Location of principal project works
F-2	13	plan and profile of flowline
F-3	14	plan, elevations, and sections of Cutler Dam
F-4	15	plan and sections of flowline intake

F-5	16	cross section and elevation of powerhouse
F-6	17	plan of powerhouse

(3) All of the structures, fixtures, equipment, or facilities used to operate or maintain the project and located within the project boundary, all portable property that may be employed in connection with the project and located within or outside the project boundary, and all riparian or other rights that are necessary or appropriate in the operation or maintenance of the project.

(C) Exhibits A, F and G of the license application are approved and made part of the license.

(D) This license is subject to the articles set forth in Form L-10, (October 1975), entitled "TERMS AND CONDITIONS OF LICENSE FOR CONSTRUCTED MAJOR PROJECT AFFECTING THE INTERESTS OF INTERSTATE OR FOREIGN COMMERCE" and the following additional articles:

Article 201. The licensee shall pay the United States an annual charge, effective the first day of the month in which this license is issued, for the purpose of reimbursing the United States for the cost of administration of Part I of the FPA, as determined by the Commission. The authorized installed capacity for that purpose is 40,000 horsepower.

Article 202. (a) In accordance with the provisions of this article, the licensee shall have the authority to grant permission for certain types of use and occupancy of project lands and waters and to convey certain interests in project lands and waters for certain types of use and occupancy, without prior Commission approval. The licensee may exercise the authority only if the proposed use and occupancy is consistent with the purposes of protecting and enhancing the scenic, recreational, and other environmental values of the project. For those purposes, the licensee shall also have continuing responsibility to supervise and control the use and occupancies for which it grants permission, and to monitor the use of, and ensure compliance with the covenants of the instrument of conveyance for, any interests that it has conveyed, under this article. If a permitted use and occupancy violates any condition of this article or any other condition imposed by the licensee for protection and enhancement of the project's scenic, recreational, or other environmental values, or if a covenant of a conveyance made under the authority of this article is violated, the licensee shall take any lawful action necessary to correct the violation. For a permitted use or occupancy, that action includes, if necessary, canceling the permission to use and occupy the project lands and waters and requiring the removal of

any non-complying structures and facilities.

(b) The type of use and occupancy of project lands and water for which the licensee may grant permission without prior Commission approval are: (1) landscape plantings; (2) non-commercial piers, landings, boat docks, or similar structures and facilities that can accommodate no more than 10 watercraft at a time and where said facility is intended to serve single-family type dwellings; (3) embankments, bulkheads, retaining walls, or similar structures for erosion control to protect the existing shoreline; and (4) food plots and other wildlife enhancement. To the extent feasible and desirable to protect and enhance the project's scenic, recreational, and other environmental values, the licensee shall require multiple use and occupancy of facilities for access to project lands or waters. The licensee shall also ensure, to the satisfaction of the Commission's authorized representative, that the use and occupancies for which it grants permission are maintained in good repair and comply with applicable state and local health and safety requirements. Before granting permission for construction of bulkheads or retaining walls, the licensee shall: (1) inspect the site of the proposed construction, (2) consider whether the planting of vegetation or the use of riprap would be adequate to control erosion at the site, and (3) determine that the proposed construction is needed and would not change the basic contour of the reservoir shoreline. To implement this paragraph (b), the licensee may, among other things, establish a program for issuing permits for the specified types of use and occupancy of project lands and waters, which may be subject to the payment of a reasonable fee to cover the licensee's costs of administering the permit program. The Commission reserves the right to require the licensee to file a description of its standards, guidelines, and procedures for implementing this paragraph (b) and to require modification of those standards, guidelines, or procedures.

(c) The licensee may convey easements or rights-of-way across, or leases of, project lands for: (1) replacement, expansion, realignment, or maintenance of bridges or roads where all necessary state and federal approvals have been obtained; (2) storm drains and water mains; (3) sewers that do not discharge into project waters; (4) minor access roads; (5) telephone, gas, and electric utility distribution lines; (6) non-project overhead electric transmission lines that do not require erection of support structures within the project boundary; (7) submarine, overhead, or underground major telephone distribution cables or major electric distribution lines (69 kV or less); and (8) water intake or pumping facilities that do not extract more than one million gallons per day from a project reservoir. No later than January 31 of each year, the licensee shall file three copies of a report briefly describing for each conveyance made under this paragraph (c) during the prior calendar year, the type of interest conveyed, the location of the lands subject to the

conveyance, and the nature of the use for which the interest was conveyed.

(d) The licensee may convey fee title to, easements or rights-of-way across, or leases of project lands for: (1) construction of new bridges or roads for which all necessary state and federal approvals have been obtained; (2) sewer or effluent lines that discharge into project waters, for which all necessary federal and state water quality certification or permits have been obtained; (3) other pipelines that cross project lands or waters but do not discharge into project waters; (4) non-project overhead electric transmission lines that require erection of support structures within the project boundary, for which all necessary federal and state approvals have been obtained; (5) private or public marinas that can accommodate no more than 10 watercraft at a time and are located at least one-half mile (measured over project waters) from any other private or public marina; (6) recreational development consistent with an approved Exhibit R or approved report on recreational resources of an Exhibit E; and (7) other uses, if: (i) the amount of land conveyed for a particular use is five acres or less; (ii) all of the land conveyed is located at least 75 feet, measured horizontally, from project waters at normal surface elevation; and (iii) no more than 50 total acres of project lands for each project development are conveyed under this clause (d)(7) in any calendar year. At least 60 days before conveying any interest in project lands under this paragraph (d), the licensee must submit a letter to the Director, Office of Hydropower Licensing, stating its intent to convey the interest and briefly describing the type of interest and location of the lands to be conveyed (a marked exhibit G or K map may be used), the nature of the proposed use, the identity of any federal or state agency official consulted, and any federal or state approvals required for the proposed use. Unless the Director, within 45 days from the filing date, requires the licensee to file an application for prior approval, the licensee may convey the intended interest at the end of that period.

(e) The following additional conditions apply to any intended conveyance under paragraph (c) or (d) of this article:

(1) Before conveying the interest, the licensee shall consult with federal and state fish and wildlife or recreation agencies, as appropriate, and the State Historic Preservation Officer.

(2) Before conveying the interest, the licensee shall determine that the proposed use of the lands to be conveyed is not inconsistent with any approved exhibit R or approved report on recreational resources of an exhibit E; or, if the project does not have an approved exhibit R or approved report on recreational resources, that the lands to be conveyed do not have

recreational value.

(3) The instrument of conveyance must include the following covenants running with the land : (i) the use of the lands conveyed shall not endanger health, create a nuisance, or otherwise be incompatible with overall project recreational use; (ii) the grantee shall take all reasonable precautions to insure that the construction, operation, and maintenance of structures or facilities on the conveyed lands will occur in a manner that will protect the scenic, recreational, and environmental values of the project; and (iii) the grantee shall not unduly restrict public access to project waters.

(4) The Commission reserves the right to require the licensee to take reasonable remedial action to correct any violation of the terms and conditions of this article, for the protection and enhancement of the project's scenic, recreational, and other environmental values.

(f) The conveyance of an interest in project lands under this article does not in itself change the project boundaries. The project boundaries may be changed to exclude land conveyed under this article only upon approval of revised exhibit G or K drawings (project boundary maps) reflecting exclusion of that land. Lands conveyed under this article will be excluded from the project only upon a determination that the lands are not necessary for project purposes, such as operation and maintenance, flowage, recreation, public access, protection of environmental resources, and shoreline control, including shoreline aesthetic values. Absent extraordinary circumstances, proposals to exclude lands conveyed under this article from the project shall be consolidated for consideration when revised exhibit G or K drawings would be filed for approval for other purposes.

(g) The authority granted to the licensee under this article shall not apply to any part of the public lands and reservations of the United States included within the project boundary.

Article 203. Pursuant to Section 10(d) of the FPA, a specified reasonable rate of return upon the net investment in the project shall be used for determining surplus earnings of the project for the establishment and maintenance of amortization reserves. The licensee shall set aside in a project amortization reserve account at the end of each fiscal year one half of the project surplus earnings, if any, in excess of the specified rate of return per annum on the net investment. To the extent that there is a deficiency of project earnings below the specified rate of return per annum for any fiscal year, the licensee shall deduct the amount of that deficiency from the amount of any surplus earnings subsequently accumulated, until absorbed. The

licensee shall set aside one-half of the remaining surplus earnings, if any, cumulatively computed, in the project amortization reserve account. The licensee shall maintain the amounts established in the project amortization reserve account until further order of the Commission.

The specified reasonable rate of return used in computing amortization reserves shall be calculated annually based on current capital ratios developed from an average of 13 monthly balances of amounts properly includible in the licensee's long-term debt and proprietary capital accounts as listed in the Commission's Uniform System of Accounts. The cost rate for such ratios shall be the weighted average cost of long-term debt and preferred stock for the year, and the cost of common equity shall be the interest rate on 10-year government bonds (reported as the Treasury Department's 10 year constant maturity series) computed on the monthly average for the year in question plus four percentage points (400 basis points).

Article 204. The Commission reserves authority, in the context of a rulemaking proceeding or a proceeding specific to this license, to require the licensee at any time to conduct studies, make financial provisions, or otherwise make reasonable provisions for decommissioning of the project. The terms of this article shall be effective unless the Commission, in Docket No. RM93-23, finds that the Commission lacks statutory authority to require such actions, or otherwise determines that the article should be rescinded.

Article 401. Within 6 months from the date of issuance of this license, the licensee shall file with the Commission, for approval, a plan for conducting a 3-year Bear River Basin Study as proposed in the license application on pages 7 and 8, Exhibit B.

The study plan shall include, but not be limited to:

- (1) the development of a basin-wide irrigation call system that includes irrigation companies and individual irrigators;
- (2) the development of an operational model to provide a statistical method for improving the operation of the Bear River system;
- (3) an assessment of reservoir levels at specific locations at Cutler reservoir to develop a reservoir level relationship between each location;
- (4) the testing of a 1-year operational plan to control reservoir fluctuations from mid-reservoir (near Benson Marina) to the south end of the reservoir while maintaining the current irrigation supply;

- (5) the development of a final Cutler reservoir operating plan that best meets the needs of wildlife, recreation, power generation, and irrigation based on meteorology, runoff and seasonal power requirements;
- (6) a schedule for implementing the study, consulting with the appropriate agencies and interested parties, and filing the results in a final report.

The licensee shall prepare the plan and final report after consultation with the Utah Division of Wildlife Resources, the U.S. Fish and Wildlife Service, and area irrigators including the Bear River Canal Company. The licensee shall include with the plan and study report documentation of consultation, copies of comments and recommendations on the completed plan and study report after it has been prepared and provided to the agencies and irrigators, and specific descriptions of how the agencies' and irrigators' comments are accommodated. The licensee shall allow a minimum of 30 days for the agencies and irrigators to comment and to make recommendations before filing the plan and study report with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 402. Within 1 year after issuance of this license, the licensee shall file with the Commission, for approval, a Resource Management Plan (RMP) for project lands.

The plan shall include maps, final design drawings, an implementation schedule, provisions for the plan's periodic review and revision, and identify the entity responsible for operation and maintenance and shall provide for, but not be limited to, the following measures:

- (1) A plan to establish a permanent vegetated buffer strip, up to 200 feet wide, on project lands adjacent to the reservoir between State Highway 30 and the State Highway 23 bridge to limit shoreline erosion, remove sediments and nutrients from runoff, and enhance wildlife habitat. The buffer plan shall include a schedule for: (a) installing up to 1.5 miles of gabions or riprap along the reservoir shoreline; (b) stabilizing an additional 2.0 miles of shoreline by planting deep-rooted shrubs and willows to reestablish vegetation; (c) reseeding about 50.0 acres of tilled ground to create a grassland buffer strip; and (d) constructing about 6.0 miles of fence to control cattle, within 3 years of issuance of a new license.
- (2) The modification of existing leases and land use practices



on about 4,500 acres of currently leased project lands. Leases would be rewritten on about 300 acres of currently tilled ground to provide food and cover for migratory waterfowl, and up to an additional 6 miles of fence would be installed.

(3) A final recreation plan that includes the public recreation enhancements detailed on pages 5-28 through 5-36, and page 43 of the licensee's application for new license, Exhibit E, plus measures to ensure that the public uses only designated access areas.

(4) The final design of measures to replace the wetlands affected by recreational facility construction on a 1:1 acreage ratio; including a plan for monitoring the effectiveness of the measures to replace wetlands affected by recreational facility construction, and steps to be taken in the event that the measures are not effective in replacing the wetlands, including, but not necessarily limited to, modifying the measures or establishing or enhancing additional wetlands; a proposal to provide recommendations to the agencies and the Commission for alternative wetland mitigation if monitoring indicates that the implemented wetland establishment or enhancement is not successful; and schedules for establishing or enhancing wetlands, for filing the results of the monitoring program, and for filing recommendations for alternative wetland mitigation.

(5) Final plans for installing fish habitat enhancement structures in the reservoir; including a map of the structures' location; detailed descriptions and design drawings of the structures; a plan to manage, monitor, and maintain the structures; and an implementation schedule.

The licensee shall prepare the plan after consultation with the U. S. Fish and Wildlife Service, the Utah Divisions of Wildlife, Water Resources, and Parks and Recreation, the National Park Service, current leaseholders and neighboring landholders, and the Bear River Canal Company. The licensee shall include with the plan documentation of consultation, copies of comments and recommendations on the completed plan after it has been prepared and provided to the consulted entities, and specific descriptions of how the plan accommodates the consulted entities' comments. The licensee shall allow a minimum of 30 days for the entities to comment and to make recommendations before filing the plan with the Commission. If the licensee does not adopt a recommendation, the filing shall include the licensee's reasons, based on project-specific information.

The Commission reserves the right to require changes to the plan. No land-disturbing activities shall occur until the licensee is notified that the plan has been approved. Upon Commission approval, the licensee shall implement the plan, including any changes required by the Commission.

Article 403. The licensee shall consult with the Utah State Historic Preservation Officer (SHPO) and develop and implement a cultural resources management plan to avoid and mitigate any impacts to the historical integrity of the Cutler Project dam and powerhouse from maintenance and repair work conducted during project operation.

The licensee shall file within 1 year after the date of issuance of this license: (1) a copy of the cultural resources management plan for Commission approval; and (2) the written comments of the SHPO on the plan. The plan shall be based on the recommendations of the SHPO and adhere to the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation.

The Commission may require revisions to the plan based on the filing. The licensee shall not implement the cultural resources management plan until informed by the Commission that the requirements of this article have been fulfilled.

Article 404. If archeological or historic sites are discovered during project operation, the licensee shall: (1) consult with the Utah State Historic Preservation Officer (SHPO); (2) prepare a cultural resources management plan and a schedule to evaluate the significance of the sites and to avoid or mitigate any impacts to any sites found eligible for inclusion in the National Register of Historic Places; (3) base the plan on the recommendations of the SHPO and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation; (4) file the plan for Commission approval, together with the written comments of the SHPO on the plan; and (5) take the necessary steps to protect the discovered sites from further impact until notified by the Commission that all of these requirements have been satisfied.

The Commission may require a cultural resources survey and changes to the cultural resources management plan based on the filings. The licensee shall not implement a cultural resources management plan or begin any land-clearing or land-disturbing activities in the vicinity of any discovered sites until informed by the Commission that the requirements of this article have been fulfilled.

Article 501. If the licensee's project was directly benefitted by the construction work of another licensee, a permittee, or the United States on a storage reservoir or other headwater improvement during the term of the original license (including extensions of that term by annual licenses), and if those headwater benefits were not previously assessed and reimbursed to the owner of the headwater improvement, the licensee shall reimburse the owner of the headwater improvement for those benefits, at such time as they are assessed, in the

same manner as for benefits received during the term of this new license.

(E) The licensee shall serve copies of any Commission filing required by this order on any entity specified in this order to be consulted on matters related to the Commission filing. Proof of service on these entities must accompany the filing with the Commission.

(F) This order is issued under authority delegated to the Director and constitutes final agency action. Request for rehearing by the Commission may be filed within 30 days of the date of this order, pursuant to 18 C.F.R. 385.813. The filing of a request for rehearing does not operate as a stay of the effective date of this order or of any other date specified in this order, except as specifically ordered by the Commission. The licensee's failure to file a request for rehearing shall constitute acceptance of this order.

Fred E. Springer  
Director, Office of

ENVIRONMENTAL ASSESSMENT  
FOR HYDROPOWER LICENSE

Cutler Hydroelectric Project

FERC Project No. 2420

Utah

ENVIRONMENTAL ASSESSMENT  
FOR HYDROPOWER LICENSE

Cutler Hydroelectric Project

FERC Project No. 2420

Utah

Federal Energy Regulatory Commission  
Office of Hydropower Licensing  
Division of Project Review  
825 N. Capitol Street, NE  
Washington, D. C. 20426  
April 5, 1994

TABLE OF CONTENTS

SUMMARY . . . . . iii

INTRODUCTION . . . . . 1

I. APPLICATION . . . . . 1

II. PURPOSE AND NEED FOR ACTION . . . . . 1

    A. Purpose of Action . . . . . 1

    B. Need for Power . . . . . 1

III. PROPOSED ACTION AND ALTERNATIVES . . . . . 2

    A. Applicant's Proposal . . . . . 2

        1. Project Description . . . . . 2

        2. Proposed Environmental Measures . . . . . 3

        3. Mandatory Requirements . . . . . 6

    B. Staff's Modification of Applicant's Proposal . . . . . 6

    C. No-action Alternative . . . . . 6

    D. Alternatives Considered but Eliminated from Detailed Study . . . . . 6

IV. CONSULTATION AND COMPLIANCE . . . . . 7

    A. Agency Consultation . . . . . 7

    B. Interventions . . . . . 7

    C. Comments on the Draft Environmental Assessment . . . . . 8

    D. Water Quality Certification . . . . . 8

V. ENVIRONMENTAL ANALYSIS . . . . . 8

    A. General Description of the Bear River Basin . . . . . 8

    B. Proposed Action and Action Alternatives . . . . . 9

        1. Water Resources . . . . . 9

        2. Fishery Resources . . . . . 13

        3. Terrestrial Resources . . . . . 16

        4. Threatened and Endangered Species . . . . . 17

        5. Cultural Resources . . . . . 18

        6. Recreation . . . . . 19

        7. Land Use . . . . . 24

    C. No-action Alternative . . . . . 25

VI. DEVELOPMENTAL ANALYSIS . . . . . 25

VII. COMPREHENSIVE ANALYSIS AND RECOMMENDED ALTERNATIVE . . . . . 26

VIII. RECOMMENDATIONS OF FISH AND WILDLIFE AGENCIES . . . . . 29

IX. CONSISTENCY WITH COMPREHENSIVE PLANS . . . . . 29

X. FINDING OF NO SIGNIFICANT IMPACT . . . . . 29

XI. LITERATURE CITED . . . . . 29

XII. LIST OF PREPARERS . . . . . 30

APPENDIX A - Comments on the Draft Environmental Assessment and Staff Responses . . . . .	31
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LIST OF FIGURES

Page	Figure
1. 3	Principal structural features of the Cutler Hydroelectric Project.
2. 4	View of Cutler Reservoir.
3. 10	Existing FERC-licensed and exempted projects in the Bear River Basin.
4. 21	Conceptual Plan for Pacifi Corp's proposed recreation facilities.

## SUMMARY

Pacific Corp Electric Operations (Pacific Corp) has applied for a new license for its existing, operating, Cutler Hydroelectric Project located on the Bear River in Utah. Pacific Corp is proposing to improve fish and wildlife habitat and public access at the project reservoir by installing new access facilities, adjusting current land use practices, and providing a reservoir buffer zone. They would also study ways of permanently limiting Cutler Reservoir water level fluctuations via a Bear River Basin Study.

In this Environmental Assessment (EA) we analyze the effect that continued project operation, under a new license, would have on the environment and on developmental resources, and make recommendations for conditions that would be included in any new license that may be issued. Under the no-action alternative, there would be no change to the existing environment, nor would any environmental enhancement measures be implemented. We found that this alternative would not be in the public interest.

Action alternatives that we analyzed included licensing the project as proposed by Pacific Corp, and with additional enhancement measures. We agree, as do the agencies, with Pacific Corp's proposal for the project, which includes conceptual plans for new public access facilities, water quality, and fish and wildlife habitat enhancements, all of which would be included in a single Resource Management Plan (RMP) for the project. We recommend that Pacific Corp prepare, and file for Commission approval, a final RMP for the project based on the measures proposed in their application.

We've concluded that, under our recommended alternative, issuing a new license for the project wouldn't result in a significant adverse environmental impact, and that an Environmental Impact Statement is not required.

ENVIRONMENTAL ASSESSMENT  
FEDERAL ENERGY REGULATORY COMMISSION  
OFFICE OF HYDROPOWER LICENSING, DIVISION OF PROJECT REVIEW

Cutler Hydroelectric Project  
FERC Project No. 2420-001

Utah  
April 7, 1994

INTRODUCTION

The Federal Energy Regulatory Commission issued the Cutler Draft Environmental Assessment (DEA) for comments on January 27, 1994. In response, we received 3 comment letters. The commentors are listed in the Comments on the Draft EA section (Section IV.C.). All comment letters were reviewed by the staff. Sections of the DEA that were modified as a result of the comments received are shown in the staff responses to the right of the comment letters in Appendix A.

I. APPLICATION

On December 23, 1991, Pacific Corp Electric Operations (Pacific Corp) filed a new license application for the existing 30 megawatt (MW) Cutler Project. The original license for the project expired on December 31, 1993. The project is currently operating under an annual license that went into effect when the original license expired, per Section 15 (a)(1) of the Federal Power Act (Act).

Pacific Corp proposes to continue operating the project and to provide a number of environmental enhancement measures. The project is located on the Bear River, in Cache and Box Elder counties, near Logan, Utah. The project does not occupy any federal lands.

II. PURPOSE AND NEED FOR ACTION

A. Purpose of Action

The Commission must decide whether or not to issue a new license, and if any conditions should be placed on the new license to protect or enhance existing environmental resources and/or to mitigate for any continuing adverse environmental impacts that occur due to project operation. Issuing a new license would allow Pacific Corp to continue using the project as a source of electricity for its customers.

In this Environmental Assessment (EA), we assess the impacts of: (1) issuing a new license for the project with measures proposed by Pacific Corp; (2) issuing a new license with various measures recommended by other



interested entities - federal and state resource agencies, the public, and the Commission staff; and (3) the no-action alternative.

#### B. Need for Power

The project is located in the Northwest Power Pool area of the Western Systems Coordinating Council. To consider the need for power, we looked at both PacifiCorp's need and the regional need for power. We've considered the short and long-term need for power generated by the project and the cost of alternative power if a new license is not issued. Our conclusions are as follows:

- ù Project power helps meet a small part of PacifiCorp's overall power needs.
- ù The project produces about 106 gigawatthours (GWh) of energy annually. Replacing project power would cost PacifiCorp about \$4.33 million annually or 40.8 mills per kilowatthour (kWh), including dependable capacity credit for 3 months of each year.

Utah Power and Light Company (UP&L) is an operating utility system owned by PacifiCorp. The Cutler Project is part of UP&L's system, operating in the state of Utah. PacifiCorp's operation of electrical systems, including the operation of the project, is coordinated using guidelines prescribed by the regions' Northwest Power Planning Council (Council).

UP&L provides electric service to about 586,000 retail customers in a service area of about 63,000 square miles in parts of Utah, Wyoming, and Idaho. UP&L has an average annual energy requirement of about 55,603 GWh with net resources of 46,950 GWh - a deficit of 8,753 GWh. With an annual average generation of 106 GWh, the project meets a small part of UP&L's total requirement, helps to lower system deficits, reduces costs to ratepayers, and displaces some fossil-fueled generation.

To forecast the need for more resources, the Council subtracted existing resources (adjusted for any known additions or reductions) from the range of future electricity demand.

The Council forecasts that the region will need new resources sometime between 1995 and 2004 in the most likely medium scenario. The regional load and resource analysis is based on average conditions and doesn't represent any particular power supply sector or individual utility.

To see how other planning bodies in the region view load projections and the need for more resources, we looked at the latest load projections and needs analyses of the Bonneville Power Authority (BPA) and the Pacific Northwest Utilities Conference Committee (PNUCC). BPA shows that additional resources would be needed by 1994. PNUCC's 1993 regional firm energy loads and resources projections show resource deficits occurring sometime in 1993.

### III. PROPOSED ACTION AND ALTERNATIVES

## A. Applicant's Proposal

### 1. Project Description

The Cutler Project has been in continuous use since 1927. Figures 1 and 2 show the Cutler Project's principal features, including a view of the entire reservoir.

The existing features of the project include:

- ù A reservoir with a surface area of about 5,459 acres and storage of about 13,200 acre-feet at an elevation of 4,407.5 feet, mean sea level (msl).
- ù A concrete gravity arch dam, 545-foot-long by 109-feet-high with a spillway containing four 30-foot-wide by 14-foot-high radial gates, a 7-foot diameter low-level sluiceway located near the base of the dam controlled by a slide gate, an intake tower and cylinder gate with a maximum opening of 10 feet, and an 18-foot-diameter steel-lined conduit passing through the dam.

Figure 1. Principal Features of the Cutler Hydroelectric Project - Source  
(Pacific Corp, 1991).

Figure 2. View of Cutler Reservoir - Source (Pacifi Corp, 1991)

- ù Two irrigation canal intakes, one located on each abutment of the dam, each controlled by 8-foot by 8-foot gates, two on the west intake and two on the east intake (one of which is not functional).
- ù A 1,160 foot-long by 18-foot-diameter steel penstock.
- ù An 81-foot-high by 45-foot-diameter steel surge tank.
- ù Two 112-foot-long by 14-foot-diameter steel penstocks that bifurcate from the surge tank into the powerhouse.
- ù A brick 60-foot by 123-foot powerhouse containing two generating units with a total installed capacity of 30 megawatts (MW), and appurtenant facilities.
- ù A 115 kilowatt (kW) emergency generator installed next to the surge tank.

Pacifi Corp proposes to continue operating the project by diverting flows from the Bear River, and to use some of the storage capacity of the reservoir for peaking purposes when flow is available. The project produces about 106 GWh of electric energy annually which is used to serve customers in Utah. Pacifi Corp owns and operates a system on the Bear River that includes the Cutler Project and five other hydroelectric projects.

## 2. Proposed Environmental Measures

To protect, mitigate continuing project impacts to, and enhance the environmental resources of the project area, Pacifi Corp proposes to:

- ù Conduct a Bear River Basin study to aid in the development of new operating procedures for stabilizing reservoir elevations at the Cutler

Project in order to enhance waterfowl nesting, fish spawning, and recreational use.

- ù Establish a permanent vegetated buffer strip, up to 200 feet wide, on project lands adjacent to the reservoir between State Highway 30 and the State Highway 23 bridge to limit shoreline erosion, remove sediments and nutrients from runoff, and enhance wildlife habitat. The buffer proposal includes, within 3 years of issuance of a new license, to: (1) install up to 1.5 miles of gabions or riprap along the reservoir shoreline in this area; (2) stabilize an additional 2.0 miles of shoreline by planting deep-rooted shrubs and willows to reestablish vegetation; (3) reseed about 50.0 acres of tilled ground to create a grassland buffer strip; and (4) construct about 6.0 miles of fence to control cattle.
- ù Install four fish cover structures in the reservoir.
- ù Reduce impacts to spawning fish and waterfowl nesting by limiting reservoir water level fluctuations as an interim measure until completion of the above Bear River Basin Study.
- ù Modify existing leases and land use practices on about 4,500 acres of currently leased project lands. Leases would be rewritten on about 300 acres of currently tilled ground to provide food and cover for migratory waterfowl, and up to an additional 6 miles of fence to enhance wildlife habitat would be installed.
- ù Notify the Utah State Historic Preservation Officer (SHPO) if any historic sites are discovered during any maintenance or construction activities within the project area, and work with the SHPO to develop and install interpretive signs to describe the historical significance of the Cutler hydroelectric facilities.
- ù Enhance recreational opportunities by improving and enlarging the existing Benson marina, establishing seven new public access areas, constructing a walking trail, providing additional parking for hunters, and conducting a user survey.
- ù Incorporate the above proposals into a single resource management plan for all project lands.

### 3. Mandatory Requirements

There are no mandatory requirements, such as Section 18 fishway prescriptions, for this project.

### B. Staff's Modification of Applicant's Proposal

In addition to PacifiCorp's proposed enhancement measures, we are recommending that a cultural resources management plan be developed and implemented for the project. The basis for this recommendation is in Section V.

### C. No-action Alternative

Under the no-action alternative, the project would continue to operate under the terms and conditions of the existing license, and no environmental protection, mitigation, or enhancement measures would be implemented. We use this alternative to establish baseline environmental conditions for comparison with other alternatives. The alternative of license denial and project decommissioning is discussed below.

### D. Alternatives Considered but Eliminated from Detailed Study

We considered several other alternatives to the applicant's relicensing proposal but eliminated them from detailed study because they are not reasonable in the circumstances of this case. They are: (1) federal takeover and operation of the project; (2) issuing a nonpower license; and (3) decommissioning the project.

We don't consider Federal takeover to be a reasonable alternative. Federal takeover and operation of the project would require Congressional approval. While that fact alone wouldn't preclude further consideration of this alternative, there is no evidence to indicate that Federal takeover should be recommended to Congress. No party has suggested Federal takeover would be appropriate and no federal agency has expressed an interest in operating the project.

Issuing a nonpower license wouldn't provide a long-term resolution of the issues presented. A nonpower license is a temporary license which the Commission will terminate whenever it determines that another governmental agency will assume regulatory authority and supervision over the lands and facilities covered by the nonpower license. In this case, no agency has suggested its willingness or ability to do so. No party has sought a nonpower license, and we have no basis for concluding that the project should no longer be used to produce power. Thus, a nonpower license is not a realistic alternative to relicensing in these circumstances.

Project decommissioning could be accomplished with or without dam removal. Either alternative would involve denial of the relicense application and surrender or termination of the existing license with appropriate conditions. No participant has suggested that dam removal would be appropriate in this case, and we have no basis for recommending it. Further, the reservoir is an important recreation resource, and would be needed for irrigation even if the project was not used to produce power. Thus, dam removal is not a reasonable alternative to relicensing the project with appropriate mitigation and enhancement measures.

The second decommissioning alternative would involve retaining the dam and disabling or removing equipment used to generate power. Project works would remain in place and could be used for historic or other purposes. This would require us to identify another government agency willing and able to assume regulatory control and supervision of the remaining facilities. No agency has stepped forward, and no participant has advocated this alternative. Nor have we any

basis for recommending it. Because the power supplied by the project is needed, a source of replacement power would have to be identified. In these circumstances, we don't consider removal of the electric generating equipment to be a reasonable alternative.

#### IV. CONSULTATION AND COMPLIANCE

##### A. Agency Consultation

Commission regulations require applicants to consult with the appropriate resource agencies before filing a license application. Prefiling consultation initiates compliance with the National Environmental Policy Act, the Fish and Wildlife Coordination Act, the Endangered Species Act, the National Historic Preservation Act, and other federal statutes.

Prefiling consultation must be complete and documented for the application to be accepted<sup>3</sup>. After acceptance, the Commission issues public notices and seeks formal comments in accordance with these statutes<sup>4</sup>. All comments become part of the record and are considered during the staff's analysis of the proposed project. The following entities filed final comments on the application subsequent to the public notice that the application was Ready for Environmental Analysis. We address the environmental concerns raised in these letters in appropriate sections of the EA.

Commenting Entities	Date of Letter
Bear River Canal Company	September 10, 1993
U. S. Department of the Interior	September 9, 1993

##### B. Interventions

The American Whitewater Affiliation (AWA) and American Rivers (AR), Inc. filed a joint motion to intervene on August 17, 1992. The AWA and AR seek to protect the nondevelopmental values of the Bear River. They believe there are significant opportunities on the Bear River for enhancing fish, wildlife, and recreation resources. They are not opposing issuance of a new license.

The Bear River Canal Company (BRCC) filed an untimely motion to intervene on April 5, 1993. BRCC's motion was granted in a June 17, 1993, Commission notice. BRCC is concerned that operational changes at the project could affect water delivery for irrigation. The BRCC does not oppose relicensing the project.

- <sup>3</sup> The application for the Cutler Project was accepted on May 28, 1992.
- <sup>4</sup> On June 9, 1992, a public notice was issued setting a deadline of August 17, 1992, for filing motions to intervene. On July 13, 1993, a notice was issued setting a deadline for filing final comments and recommendations.

Mr. Paul Stewart filed an untimely motion to intervene on July 7, 1993, which was granted in a September 7, 1993, Commission notice. Mr. Stewart is a local farmer and owns land adjacent to the project reservoir. He is concerned about impacts to landowners that may occur from Pacific Corp's plans to enhance public access and wildlife habitat. Mr. Stewart does not oppose relicensing the project.

We address the environmental concerns raised in these motions to intervene in appropriate sections of the EA.

#### C. Comments on the Draft Environmental Assessment

Commenting Entities	Date of Letter
Bear River Canal Company	February 25, 1994
Pacific Corp	February 25, 1994
Mr. Paul Stewart	February 28, 1994

#### D. Water Quality Certification

On August 13, 1991, Pacific Corp applied to the Utah Department of Environmental Quality (DEQ) for a water quality certification for the project, as required by section 401 of the Clean Water Act. On November 20, 1991, the DEQ accepted Pacific Corp's request for a 401 water quality certification, certified compliance to applicable state water quality standards, and granted the certificate (letter from Don A. Oster, Executive Secretary, Utah State Water Quality Board to Jim Burruss, Senior Environmental Analyst, Utah Power, November 20, 1991).

### V. ENVIRONMENTAL ANALYSIS

In this section, we describe the project setting and the river basin where it is located (the Affected Environment), and discuss impacts on individual environmental resources that would be affected by: (1) Pacific Corp's proposal; (2) alternatives for continued operation of the project; and (3) no-action. In addition to project-specific impacts, we analyze the potential for significant cumulative impacts to resources affected by the project and by other past, present, and reasonably foreseeable activities in the basin.

We focus our analysis on the Bear River Basin - the mainstem Bear River in particular, and have prepared a single-project EA in this case because: (1) the Cutler Project is the most downstream hydro project on the Bear River - dependent, to a great degree, on water releases from an unlicensed upstream storage reservoir (Bear Lake); (2) there are no other pending projects in this river basin; (3) there are no Threatened and Endangered (T&E) species or anadromous fish issues; and (4) the level of controversy on the proposed project is low. Unless specifically cited, the source of our information is Pacific Corp's application for a new license (Pacific Corp, 1991) and additional information filed on the application (Pacific Corp, 1993).



## A. General Description of the Bear River Basin

The Bear River Basin is located in northern Utah, southeast Idaho, and southwest Wyoming. The basin drains about 6,900 square miles at its outlet on the Great Salt Lake.

The basin has an intermountain climate that is largely driven by topography. Mean annual precipitation varies with elevation; from about 40 inches in the mountains to around 10 inches at the lowest elevations. Most precipitation during October through April falls as snow. Summer thunderstorms are also very common in the basin and produce intense, flashy rainfall. Temperature variation is extreme, ranging from 40°F to 108°F. The mean annual temperature is about 45°F (Harza, 1983).

The Cutler Project is located in the Cache Valley of Utah between the Wasatch and Wellsville mountains. The dam is in Box Elder County, while most of the reservoir is in Cache County. The reservoir sits at the confluence of the Bear, Logan, and Little Bear Rivers.

Farming and grazing are the main land uses in Cache County. Hence, the County is rural in nature and as of the 1990 census had a population of about 70,000. The largest single employer is Utah State University in Logan. Cache County has the second highest birth rate in the state and its population is expected to increase significantly into the next century.

The Bear River is a managed system that includes storage reservoirs, diversion dams, canals, and hydroelectric plants. The river has historically been controlled for irrigation, power generation, recreation, fish and wildlife, and flood control.

There are six hydroelectric developments on the mainstem Bear River. From upstream to downstream, they are: Soda (FERC No. 20) - Last Chance (FERC No. 4580) - Grace (FERC No. 2401B) - Cove (FERC No. 2401A) - Oneida (FERC No. 472) - and Cutler (FERC No. 2420). All of these projects are licensed to Pacific Corp, and use flows supplemented by water releases from Bear Lake, a large, unlicensed, upstream storage reservoir.

There are an additional seven hydroelectric developments located on the Logan River, Blacksmith Fork, Mink Creek, and Paris Creek; Bear River tributaries. Figure 3 shows the spatial distribution, licensee, generating capacity, and license expiration year for each of the above projects.

From mid-June to mid-October, nearly all natural flow in the Bear River is diverted for irrigation. Supplemental flow comes from water stored in Bear Lake. About 118 entities have consumptive water rights on the mainstem Bear River between Bear Lake and the Great Salt Lake.

Overall, throughout the basin, about a third of the river flow is consumed for offstream uses, mostly for irrigation. About 10 percent of the total land area in the basin (420,000 acres) is irrigated by about 500 separate systems

(Harza, 1983). These systems are owned and operated by a variety of individuals and groups. Other land uses in the basin include: mining (0.5 percent); wetlands, lakes, and streams (5.0 percent); non-irrigated cropland (9.0 percent), and urban areas (1.0 percent). The balance of the land area, nearly 85 percent, is either National Forest or range (Harza, 1983).

## B. Proposed Action and Action Alternatives

In the individual resource sections below, recommendations are made when the measure would not have a significant cost or impact on other resources. For those measures involving significant costs, or that would significantly impact other developmental or nondevelopmental resources, our recommendation is found in Section VII. We have not included a specific section on geology and soils since no significant new construction is being proposed. However, runoff, soil erosion and sedimentation control are addressed in several other resource sections. Likewise, aesthetic resources are discussed in the Recreation section.

### 1. Water Resources

**Affected Environment:** The Bear River is regulated for multiple uses including irrigation, power generation, recreation, fish and wildlife enhancement, and flood control. Flows in the Bear River are seasonally influenced by: (1) controlled releases from Bear Lake, a large, upper-basin storage reservoir; (2) hydropower projects; (3) the removal of large quantities of water for irrigation demands; and (4) entry of uncontrolled runoff from tributaries.

Basin.

Figure 3. Existing FERC-licensed and exempted projects in the Bear River

Streamflow. The drainage area above the project is about 6,200 square miles. A USGS gaging station, near Collinston, Utah, (Station No. 10118000), located about 800 feet downstream from the Cutler powerhouse, was used to determine streamflow data for the project.

Based on historical flow records, the average annual flow downstream of the project is 1,674 cubic feet per second (cfs). The minimum recorded flow was 10 cfs on October 4, 1905, and the maximum flow of 12,700 cfs was recorded on February 20, 1986. Average historic monthly flows passing through the power plant range from about 400 cfs to 3,100 cfs and are lowest during August. Summer flows (July, August and September) in the project's 1,700-foot-long bypass reach vary widely with mean August flow in the bypass reach typically around 27 cfs. The minimum recorded leakage flow below the dam is 13 cfs.

A number of physical features impede the free flow of water through the Cutler reservoir. First, the lake is shallow - only about 25 percent of it is deeper than three feet. There are also bridges that cross it, sandbars in its lower reaches, a narrow canyon just above the dam, and marshy areas at various locations. In addition, an old dam, Wheelon dam, located about 1/2 mile upstream from the Cutler dam, was inundated when the Cutler Project was built.

These restrictions create a lag time which delays or dampens water level fluctuations between the upper end of the reservoir and the dam. In the upper or southern reach of the reservoir from the Benson Marina area (mid-reservoir)

to the marshy areas at the upper end of the reservoir, water elevations are especially difficult to control and predict. This is due to periodic high inflows from natural tributaries and because of hard-to-anticipate increases in direct irrigation draws from the reservoir.

**Project Operation.** The Cutler Project operates as a peaking project based on the availability of flows. When inflows to the reservoir are too low to keep an efficient load level on the generating units, water is stored, then released. However, only about the top 2.5 feet of the reservoir (measured at the dam) are used for storage. PacifiCorp manages the project in a semi-automatic mode. The generators are started and synchronized to the system manually by a local project operator. Once on line, the units are controlled remotely by a System Dispatcher in Salt Lake City. Operation of the project is affected by seasonal constraints as described below. There is currently no minimum flow required or provided in the bypass reach.

**Irrigation Season.** The irrigation season is from May 1 through October 31. During the season, the reservoir is held to within 1.5 feet of the 4,407.5-foot normal maximum pool elevation 90 percent of the time to facilitate direct pumping for irrigation from the reservoir and to accommodate sudden increases in irrigation demand that occur due to unexpected weather conditions or unexpected irrigation needs. Any extra inflow above that needed for irrigation is stored to maintain water elevations in the reservoir, and to permit efficient generation when water is available for release. During this period, the reservoir can drop below maximum pool because there is a 2 to 5-day time lag until upstream water releases, generally from Bear Lake, reach the project.

**Winter Season.** From late-December to mid-February, ice can form on the reservoir and in the river downstream of the project. During this period, the reservoir is held as constant as possible to prevent plugging of intakes and to prevent sudden increases in flow that can cause ice breakups and jams downstream.

**Spring Runoff and Flood Season.** Spring run-off can occur at the project anytime from mid-February to the end of June. It generally happens in two waves - when low elevation snow melts, and later when the high snowpack melts.

High flows also occur when there are heavy releases from Bear Lake concurrent with natural runoff upstream. The highest recorded flows have occurred from low-elevation snowmelts combined with heavy rains. During the spring, as much as 70 percent of the inflow into the project comes from uncontrolled flows from the Logan, Blacksmith Fork, Little Bear, Spring Creek, and Cub River tributaries. When inflows exceed irrigation demands and the plant capacity (3,900 cfs), the spillway gates at the dam are used to pass water.

**Water Rights.** Operation of the Bear River System is complex and is governed by two court decrees in Idaho and Utah; an interstate compact between Wyoming, Idaho, and Utah; state water rights laws; and long-standing irrigation contracts in Idaho and Utah. Major contract users are Bear River Canal Company, West Cache Irrigation Company, Cub River Irrigation Company, and Last Chance Canal. PacifiCorp must supply water upon demand to irrigators to meet seasonal irrigation requirements governed by these contractual

agreements. Contractual agreements bind PacificCorp to supply 900 cfs upon demand to the Bear River Canal Company from May 1 to October 31 and 150 cfs from November 1 to April 30.

**Water Quality.** The water quality of Cutler reservoir is poor primarily due to land use practices on agricultural lands along the Bear River and surrounding the reservoir. The reservoir is rich in nutrients with high levels of phosphorus and nitrogen. The nutrient loading indicates that the reservoir has the capacity to be eutrophic. Sources of phosphorus and nitrogen include watershed runoff, non-point source pollution, and point source pollution (e.g. crop fields, pasture fields, feedlots, dairy barns, and the city of Logan Sewage Treatment Facility). Trace metals have also been found in reservoir water. The U.S. Fish and Wildlife Service (FWS) indicated during prefilling consultation that the concentration values of unionized ammonia with warm water conditions and pH values greater than 8.0 could be a limiting factor on the fishery (letter from Clark D. Johnson, Assistant Field Supervisor, Fish and Wildlife Service, Salt Lake City, Utah, November 4, 1991).

Physical parameters of the reservoir water are also affected by watershed runoff and extended water storage. PacificCorp reports that a 1990 Ecosystems Research Institute study of reservoir water quality indicated very high total dissolved solids (ranging above 650 milligrams per liter (mg/l)) causing poor water clarity and limiting light penetration to about 1.5 meters throughout the reservoir. Low oxygen levels at times were also reported in the mid 1960's in the reservoir, but oxygen levels improved in water samples collected in 1990.

#### Environmental Impacts and Recommendations:

**Irrigation Demands.** The Bear River Canal Company is concerned that PacificCorp's plan to stabilize reservoir elevations could affect its ability to supply water for irrigation. The Canal Company is responsible for the distribution of Bear River water for irrigation of lands in the Bear River Valley.

PacificCorp is planning to stabilize reservoir levels, in part, to enhance the fishery by limiting reservoir fluctuations to 0.5 feet during the spring spawning season. Spawning season overlaps with the irrigation season during May and June. Irrigation needs, releases from Bear Lake, and tributary runoff make it difficult, however, for PacificCorp to reduce reservoir fluctuations. Therefore, PacificCorp proposes to conduct a 3-year Bear River Basin Study to develop new operating procedures for stabilizing reservoir elevations to benefit fish and wildlife resources, reduce shoreline erosion, and improve recreation opportunities.

Reservoir levels at the Cutler Project and various locations would be studied to develop a reservoir level relationship between several reservoir locations. The study would address the following water use demands: (1) irrigation; (2) flood control; (3) fish and wildlife; (4) recreation; and (5) power generation as well as the constraints of water rights, hydrologic variability, irrigation contracts, maintenance activities, and ice conditions.

The complex water demands at the Cutler Project make it uncertain whether, especially during dry years, reservoir levels could be further stabilized while maintaining enough water for irrigation. However, by law, PacifiCorp is bound by contractual agreements with irrigators to meet their water needs before using water for project purposes. PacifiCorp's proposed Bear River Basin Study would include developing a basin-wide irrigation call system to better anticipate changes in irrigation demand along the Bear River.

The Bear River Basin Study is further discussed in the Fishery Resources section, below.

**Water Quality.** Land use practices and shoreline management adjacent to and upstream of the reservoir have affected reservoir water quality. PacifiCorp proposes to establish an up to 200-foot-wide permanent vegetative buffer strip on project lands adjacent to the reservoir between State Highway 30 and the State Highway 23 bridge. As part of the buffer, PacifiCorp proposes, within 3 years of issuance of the license, to: (1) install up to 1.5 miles of gabions or riprap along the reservoir shoreline in this area; (2) stabilize an additional 2.0 miles of shoreline by planting deep-rooted shrubs and willows to reestablish vegetation; (3) reseed about 50.0 acres of tilled ground to create a grassland buffer strip; and (4) construct about 6.0 miles of fence to control cattle.

The FWS (letter from Clark D. Johnson, Assistant Field Supervisor, Fish and Wildlife Service, Salt Lake City, Utah, November 4, 1991) and the Utah Division of Water Resources (UDWR) (letter from Timothy H. Provan, Director, Utah Division of Wildlife Resources, Salt Lake City, Utah, November 7, 1991) support PacifiCorp's proposal to stabilize the shoreline.

PacifiCorp's proposed buffer zone would help reduce shoreline erosion and reduce the runoff of sediments and nutrients into the reservoir. We discuss the economic impact of providing the buffer zone in Section VI, and make our recommendation on this measure in Section VII.

Unavoidable Adverse Impacts: None

## 2. Fishery Resources

**Affected Environment:** Construction of the Cutler dam in the 1920's was a further alteration of the already regulated nature of the Bear River from its original, free-flowing nature; perpetuating a long-term change in river habitat. In the mid-1960's, fishery habitats in the Bear River and the lower reaches of the tributaries near Cutler reservoir were of poor quality from silt loads and pollution. Algae blooms were common and invertebrates were scarce. Cutler reservoir in 1962-1965 was described as a shallow silted reservoir with low production. The establishment of a recreational fishery was limited because of the reduction of habitat caused by water level fluctuations and dewatering from extensive irrigation withdrawals. Carp was the most abundant species in the reservoir along with some largemouth bass, black crappie, and black bullhead.

More recently, UDWR angler surveys conducted from 1986-88 found the black bullhead the primary species caught and also confirmed the presence of brown and rainbow trout (letter from Timothy H. Provan, Director, Utah Division of Wildlife Resources, Salt Lake City, Utah, April 28, 1989). PacifiCorp also conducted fish sampling on Cutler reservoir and major tributaries to the reservoir during the spring and summer of 1990. The survey found Cutler reservoir supporting a recreational warmwater fishery comprised primarily of carp, green sunfish, black bullhead, black crappie, largemouth bass, and channel catfish. PacifiCorp also found one brown trout in the reservoir in their studies. These fish represent migrants from upstream sources. Carp are still the most abundant species in number and biomass. The bulk of the recreational fishery is maintained by natural recruitment. There are no known endangered or rare fish species in the Cutler reservoir, nor are there any anadromous or migratory species present in the Bear River.

The fishery appears to be marginal - reflecting years of seasonal flow fluctuations. There is some fishing for carp and catfish in the tailrace area, but fishing is limited there because: (1) irrigation demands on the reservoir can cause situations when the project shuts down and no flow is released below the dam or powerhouse; and (2) over the years, the minimum leakage flow from the dam plus seasonal fluctuations in flows have reduced habitat in the stream below the project.

#### Environmental Impacts and Recommendations:

Minimum flows below the powerhouse. Irrigation has priority over all other water use at the Cutler Project. Irregular wet and dry weather cycles affecting control of water available for irrigation has precluded the requirement of continuous discharge of a minimum flow into the Bear River below the powerhouse. During some dry years, there is not enough flow available for generation during the summer irrigation season. Hence, PacifiCorp is not proposing a minimum flow below the project.

The resource agencies recognized the constraints placed on the project and did not request any instream flow study during prefilling consultation nor have they requested a minimum flow release below the project.

We, likewise, because of irrigation's priority and the need to stabilize reservoir fluctuations (discussed further below) don't recommend that a minimum flow be established downstream of the project powerhouse. We, instead, recommend that PacifiCorp concentrate their fish habitat improvement efforts on the reservoir.

Minimum Flows in the Bypass reach. PacifiCorp doesn't propose, nor does any party or agency recommend that a minimum flow be provided for the 1,700 foot-long bypass reach.

We realize that under the current operating scenario, except when the project spills, this reach receives only leakage flows from the dam. However, we have no evidence that the bypass has any unique or outstanding characteristics for fish habitat compared to other reaches nearby, or that the resource agencies give it any special consideration in management plans for the region. There is, however, interest in stabilizing reservoir

fluctuations. Providing a continuous minimum flow in the bypass is not feasible without drawing down the reservoir because of the dependence of available water on wet and dry weather cycles and the priority that irrigation use has. We, therefore, are not recommending that a minimum bypass flow be established. As we've said, we are recommending that PacifiCorp concentrate their fish habitat improvement efforts on the reservoir.

Reservoir Fluctuations. Reservoir fluctuations occur as a result of irrigation draws and power production. Such fluctuations have historically, and continue to impair fishery productivity in the reservoir. Fluctuating reservoir levels can cause stranding, loss of spawning sites, abandonment of nesting fish, and desiccation of fish spawn; all factors that can limit natural recruitment (Hunter, 1992). Fluctuations can also disrupt the aquatic invertebrate community, a prime food base for fish. Further, fluctuations can increase turbidity, erosion, and resuspension of sediments in the reservoir.

As we've said, PacifiCorp proposes to study ways, basinwide, to reduce fluctuation in Cutler reservoir. In the meantime, PacifiCorp would test a reservoir operation plan that would limit drawdowns during certain times of the year. The test would provide actual experience from which a final reservoir operating plan would be developed. The test would include the following water surface elevation ranges and time periods to enhance not only fish spawning, but waterfowl nesting, water quality, and waterfowl hunting.

Time Period	Reservoir Elevation (Feet)	Tolerance (Feet)	Percent of Time Goal Met
March 1 - June 15	4407.5 - 4407.0	± 0.25	95
June 15 - Sept. 30	4407.5 - 4406.5	± 0.25	95
Oct. 1 - Dec. 1	4407.5 - 4407.0	± 0.25	95
Dec. 2 - Feb. 28	4407.5 - 4406.0	+ 0.25 to - 0.50	90

Both the UDWR (letter from Timothy H. Provan, Director, Utah Division of Wildlife Resources, Salt Lake City, Utah, April 28, 1989) and the FWS (letter from Robert G. Ruesink, State Supervisor, Fish and Wildlife Service, Salt Lake City, Utah, April 25, 1989) support PacifiCorp's proposed measures to review project operations to reduce water level fluctuations and to enhance the fishery.

PacifiCorp's interim proposal to maintain reservoir water levels from March 1 to June 15, part of their proposed Bear River Basin study, would enhance the fishery, and seems reasonable provided it does not interfere with irrigation needs. The proposed Bear River Basin Study would be valuable in



determining basin-wide measures that could be taken to permanently reduce fluctuation in Cutler Reservoir, and should be required. Since they are such a large water user, the Bear River Canal Company should be consulted during the study's planning and implementation.

**Fish Cover and Food Sources.** PacificCorp conducted fish habitat suitability studies in the reservoir in 1990. The studies indicated that a shortage of suitable cover and available fish food sources were limiting the fishery. Low macroinvertebrate densities in conjunction with poor water quality, and depth may limit the numbers and sizes of gamefish and undoubtedly affect the entire food chain in the reservoir.

To enhance fish habitat in Cutler reservoir, PacificCorp proposes a number of activities. As previously discussed in the water quality section, PacificCorp proposes shoreline erosion control measures that would also benefit the fishery by reducing sedimentation. To enhance the amount of open water fish cover, PacificCorp proposes to cooperate with the UDWR in establishing four fish cover structures in the open water portion of the reservoir in the Benson Area.

The UDWR, (letter from Timothy H. Provan, Director, Utah Division of Wildlife Resources, Salt Lake City, Utah, April 28, 1989) indicates that open water cover is a limiting factor on the fishery in certain parts of the reservoir.

Fish cover provides protection and prey entrapment sites for fish as well as providing habitat for invertebrates and other fish food sources. There is little fish cover in the reservoir partially because the poor water quality limits light penetration and the development of submerged aquatic plants. The four structures proposed by PacificCorp would provide cover for game and forage fish in an area where cover is needed. We discuss the economic impact of providing the fish cover structures in Section VI, and make our recommendation on this measure in Section VII.

**Carp Control.** During pre-filing consultation, local anglers and conservation groups requested that something be done to reduce the number of carp in the reservoir. This issue was not, however, raised later during the consultation period, nor has it been raised since the application was filed.

The UDWR acknowledges that the large number of carp in the reservoir decrease rooted macrophytes and increase turbidity, but believe it would be infeasible to eradicate them from the reservoir (letter from Timothy H. Provan, Director, Utah Division of Wildlife Resources, Salt Lake City, Utah, April 28, 1989).

Shallow, turbid and nutrient-enriched water, conditions found in the Cutler reservoir, are the preferred habitat conditions for carp. These conditions are a result of water level fluctuations from irrigation, project operation, and pollution sources upriver. Therefore, the presence of carp is not solely due to project operation. However, PacificCorp's proposed fish habitat enhancements (increasing the amount of fish cover, and stabilizing reservoir fluctuations to decrease the resuspension of sediments and reduce

impacts to spawning fish) would promote the growth of non-carp species.

Unavoidable Adverse Impacts: The lack of a minimum flow requirement would perpetuate a lasting reduction in river productivity below the project.

### 3. Terrestrial Resources

#### Affected Environment:

**Vegetation.** Construction of Cutler dam in the 1920's created a large, shallow reservoir with extensive emergent wetlands. Irrigation water supplied by the reservoir supports nearby agricultural land, in which birds and other wildlife forage.

The most prevalent vegetation type in the project area is bulrush/cattail emergent wetland, growing in up to 2 feet of water. Emergent wetland occupies 1,735 acres. Pasture is the second most prevalent vegetation type (1,314 acres), and cultivated fields of alfalfa or grains are the third most prevalent (653 acres).

Riparian vegetation along the reservoir consists of four vegetation types: (1) wet meadows; (2) mesic shrubs; (3) a willow/small tree association; and (4) a few stands of cottonwoods or other trees. Wet meadows, making up 421 acres of the project area, include reed canary grass, sedges, rushes, and pale spike rush. The mesic shrub vegetation type is made up of red-osier dogwood, Wood's rose, chokecherry, skunkbush, golden currant, and occasionally Rocky Mountain bigtooth maple. The willow/small tree vegetation type, making up 108 acres, is composed primarily of small willows, such as coyote willow, with other small trees such as Russian olive, green ash, and river hawthorn also present. There are a few large stands of Fremont cottonwood or Lombardy poplar.

Other vegetation types in the project area include xeric uplands on 11 acres of the slopes in and above the canyon in which Cutler dam is located. This upland vegetation is made up of juniper woodland or sagebrush and grasses.

Riparian vegetation in the Bear River Basin has been cumulatively impacted by hydroelectric projects, irrigation, agriculture, and industry. Before Cutler dam was built, the project area consisted of the floodplain for the Bear River and its tributaries, the Little Bear River, the Blacksmith Fork River, and the Logan River. Each river supported riparian vegetation. As we've said, constructing the dam created a large, irregularly shaped reservoir with a shoreline capable of supporting extensive riparian vegetation. Grazing and crop production, however, have prevented the growth of riparian vegetation on 2 miles of reservoir shoreline and have degraded riparian vegetation on 35 miles of shoreline (see table 3-14 of exhibit E).

**Wildlife.** Mule deer use portions of the project area in low numbers. Other mammal species are coyote, bobcat, red fox, porcupine, badger, mountain cottontail, striped skunk, beaver, muskrat, and mink. Upland parts of the project area support small populations of ring-necked pheasant. The sandhill

crane, an important nongame bird, feeds and nests in project wetlands.

Cutler reservoir and adjoining lands provide important habitat for waterfowl and other birds. The UDWR counted as many as 5,777 waterfowl in its 1983 mid-winter survey. Many bird species use the project area during their fall and spring migrations, while few species are permanent residents. Redheads, cinnamon teal, mallards, gadwalls, northern shovelers, pintails, and ruddy ducks are the most common breeding waterfowl. The reservoir's high turbidity, however, limits submerged aquatic vegetation and macroinvertebrate production, so duck breeding is low. The reservoir's Canada goose population has been increasing and has caused some crop damage. Besides waterfowl, there are colonies of white-faced ibis, black-crowned night heron, great blue heron, snowy egret, cattle egret, Forster's tern, and Franklin's gull.

Waterfowl in the Bear River Basin have been cumulatively impacted by agriculture, irrigation, hydroelectric projects, and industry. Construction of the reservoir and subsequent siltation resulted in a great increase in emergent wetland habitat for waterfowl. Production of ducks that feed on submerged aquatic vegetation and macroinvertebrates, however, is lower than would be expected because the quality of the water flowing into the reservoir has been degraded by agriculture and other uses.

#### Environmental Impacts and Recommendations:

Impact of Recreational Enhancement on Wetlands. PacifiCorp delineated wetlands that would be affected by eight proposed recreational developments. PacifiCorp found that the total area of impacted wetlands would be 0.98 acre. PacifiCorp proposes to mitigate this loss of wetlands. PacifiCorp says its mitigation measures could include bank stabilization, vegetation plantings, and cattle fences to enhance or create wetlands in the project area (PacifiCorp, 1993).

The FWS concurs with PacifiCorp's proposal to mitigate wetland losses. The UDWR says that the impacts to wildlife would be minimal and could be mitigated by enhancing lands within the project boundary. The UDWR asks to be involved in developing site plans and mitigative measures.

Wetland vegetation provides food and cover for birds, and other wildlife. Recreational enhancements would result in the permanent loss of 0.98 acre of wetland vegetation. PacifiCorp should replace any wetland vegetation removed due to construction of new recreational facilities.

The plan should include the following: (1) details of the final design of measures to replace the wetland habitat affected by recreational development, and to ensure that no more such vegetation is destroyed than is necessary to build the recreational facilities; and (2) a plan for monitoring the effectiveness of the measures to replace wetland habitat affected by the construction of the recreational facilities, which includes steps to be taken in the event the measures are not effective in protecting the wetland habitat, including, but not necessarily limited to, modifying the measures or establishing or enhancing additional wetland habitat. Implementing this plan would ensure that the site-specific and cumulative impacts of wetland habitat

Loss on deer, birds, and other wildlife are minimized.

Wildlife enhancement. PacifiCorp proposes to develop a Resource Management Plan (RMP) to protect and enhance wildlife habitat, recreation, and the continuation of managed agricultural uses.

PacifiCorp has already developed specific proposals for the RMP for enhancing riparian areas and wildlife habitat north of State Highway 30. These measures include providing a vegetative buffer strip around parts of the reservoir, installing 6.0 miles of fence to keep livestock out of the buffer strip, and reseeding or replanting parts of the shoreline. PacifiCorp also proposes to reseed 300 acres of currently tilled land and install up to 6.0 miles of fence within 3 years after issuance of a new license.

The RMP would also contain the same kind of enhancement measures for project lands south of State Highway 30 that PacifiCorp has proposed for lands north of the highway. PacifiCorp would evaluate project lands that are currently farmed or grazed, and may take some lands out of production. PacifiCorp would install fences to exclude cattle during the growing season to allow pasture vegetation to grow and to provide cover for wildlife. PacifiCorp would seed currently tilled areas with native grasses to improve wildlife cover. In the RMP, PacifiCorp would identify lands of current or potential value to wildlife to be acquired, either through fee simple purchase or exchange, and included in the project boundary.

The UDWR supports PacifiCorp's proposal to develop the Resource Management Plan.

Unavoidable Adverse Impacts: Enhancement of project recreational facilities would result in the short-term loss of 0.98 acre of wetland habitat.

#### 4. Threatened and Endangered Species

Affected Environment: The FWS says that the endangered bald eagle, peregrine falcon, and whooping crane, and the threatened Ute ladies'-tresses may occur in the project area (U.S. Fish and Wildlife Service, 1991).

Bald eagles winter in the Bear River Valley from November 15 through March 25. A 1987 survey found 16 eagles in the vicinity of Cutler reservoir (PacifiCorp, 1991). In the project area, eagles feed on waterfowl in the project's wetlands and roost in large cottonwoods near the reservoir.

Peregrine falcons have been seen around the reservoir (PacifiCorp, 1991). Most are probably falcons migrating through the area. Year-round observations of peregrine falcons, however, suggest that breeding pairs may reside year-round in Cache County. The canyon section of the reservoir near Cutler dam may provide suitable nesting habitat for falcons. Significant falcon activity, however, hasn't been observed in the canyon section.

Whooping cranes may use the project area during migration. One or two unverified sightings of whooping crane flyovers have been made in Cache County (Pacifi Corp, 1991). Cranes haven't been seen in the project area.

Ute Ladies'-tresses (*Spiranthes diluvialis*) may grow in the project area. The plant grows in seasonally moist soils and wet meadows near springs, lakes, or perennial streams and their associated flood plains. Pacifi Corp did a survey for this plant in the riparian areas that would be disturbed by its proposed recreational enhancements (Pacifi Corp, 1993). Pacifi Corp found no Ute Ladies'-tresses.

#### Environmental Impacts and Recommendations:

Bald eagle. Bald eagles forage in and around Cutler reservoir and perch in cottonwoods next to the reservoir during the winter. Relicensing the project wouldn't affect wintering bald eagle use of the project area. Pacifi Corp's proposed fish and wildlife enhancements may slightly increase the amount of fish and waterfowl available as eagle prey. Cottonwoods grow at the Benson and Upper Bear River access sites, which Pacifi Corp would enhance, but further development of these recreation sites wouldn't entail removing any cottonwoods (Pacifi Corp, 1993). Bald eagles use the project during the winter when recreational use is low, so increased recreational use shouldn't disturb eagles.

Peregrine falcon. Peregrine falcon use of the project area is limited. Relicensing the project wouldn't affect falcon use of the project area. Pacifi Corp's proposed wildlife enhancements may slightly increase the amount of birds available as falcon prey.

Whooping crane. No use of the project area by whooping cranes has been documented.

Finally, the project doesn't include an above-ground transmission line that could be a collision hazard to bald eagles, peregrine falcons, or whooping cranes. Therefore, relicensing the project wouldn't affect bald eagles, peregrine falcons, or whooping cranes.

The FWS concurs with Pacifi Corp's determination of no effect for the Ute Ladies'-tresses and all other federally listed threatened or endangered species (U. S. Fish and Wildlife Service, 1993).

Unavoidable Adverse Impacts: None

#### 5. Cultural Resources

Affected Environment: In 1989, the Cutler dam and powerhouse were listed in the National Register of Historic Places (Register). The facility was constructed between 1924 and 1927, and has been in continuous use since 1927.

The facility has been subject to repairs and upgrading, but not enough to alter its historical integrity. Repairs and upgrading include overhauls and repairs of turbines and generators, rewinding of the generators, installation of remote controls, replacement of original transformers, and rehabilitation of the spillway.

Several archeological sites are located in the general project vicinity. No sites have been recorded in the immediate project area (Martin, 1989; Pacific Corp, 1991; Schirer, 1991).

Environmental Impacts and Recommendations: The SHPO says the project would not have an effect on the historical integrity of the Cutler dam and powerhouse or other cultural resources in the project area (Schirer, 1991).

We agree with this "no effect" determination, but not without more definitive consultation procedures and cultural resources management plans to:

(a) ensure that project maintenance and repair work does not affect the historical integrity of the Cutler dam and powerhouse; and (b) specify how archeological and historic sites discovered during project operation would be evaluated and protected.

Therefore, we recommend as a condition of any license issued for the project that Pacific Corp: (1) notify the SHPO of specific maintenance and repair work procedures at Cutler dam and powerhouse; (2) develop a cultural resources management plan for implementation of these procedures; (3) base the plan on the SHPO's recommendations and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation; and (4) file the plan with the Commission for approval, together with a copy of a letter from the SHPO commenting on the plan, within 2 years after the date of any license issued for the project.

To protect any archeological or historic sites discovered during project operation, we recommend Pacific Corp: (1) consult with the SHPO; (2) prepare a cultural resources management plan and a schedule to evaluate the significance of the sites and to avoid or mitigate any impacts to Register eligible sites; (3) base the plan on recommendations of the SHPO and the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation; (4) file the plan for Commission approval, together with the written comments of the SHPO; and (5) take the necessary steps to protect the discovered archeological or historic sites from further impact until notified by the Commission that all of these requirements have been satisfied.

The Commission may require changes to the cultural resources management plans based on the filings. Pacific Corp would not be allowed to implement a cultural resources management plan or begin any land-clearing or land-disturbing activities in the vicinity of any discovered sites until informed by the Commission that the requirements have been fulfilled.

Unavoidable Adverse Impacts: None.

## 6. Recreation

**Affected Environment:** Recreation resources have been cumulatively affected by hydropower development, irrigation, agriculture and industrial and residential development in the Bear River Basin. The construction of dams and diversions in the basin in the late 1800's and early 1900's resulted in the inundation of many miles of free-flowing river that once provided paddling and, probably, some whitewater boating opportunities. The impoundments, however, have also provided many lake-oriented recreation opportunities that would not exist otherwise. Lakes in the basin currently receive high use for a variety of activities.

Farming practices and a gradual increase in population throughout the basin have contributed to water quality problems which, as we've said, limit potential waterfowl production and, therefore, hunting and wildlife viewing opportunities. However, the increase in emergent vegetation in the basin from dam construction has probably been an overall benefit to waterfowl-based recreation. Today, the wetlands at the Cutler Project are the focal point for much of the recreation that occurs, as waterfowl hunting, and wildlife watching are important activities.

The most recent recreational use data for Cutler reservoir was collected in 1973. At that time, about 5,000 people were using the lake per year. PacifiCorp believes that the total number of visitors has increased since then, but that the proportion of use among the various activities has remained fairly stable.

Waterfowl hunting reportedly represents about half of the total use of the reservoir. Various species of ducks, geese, and swans are sought, with the best hunting areas being the southern reservoir and along the Bear, Little Bear, and Logan tributaries. Upland hunting for pheasants occurs on land currently in grain production. The number of hunters who use the reservoir each year has been estimated at somewhere between 930 and 3,660 since 1979. In addition to the migratory game species, birds such as the great blue heron, white-faced ibis, and snowy plover provide bird watching opportunities.

Although it's not considered a prime fishing resource, fishing does occur year-round on the reservoir. Largemouth bass, black crappie, and channel catfish are the main species sought. Some bow fishing for carp also occurs. Total fishing use is estimated at about 100 anglers per month. The reservoir is also used for water skiing and powerboating, but such use is limited to the deeper sections.

There is currently only one developed access facility on the impoundment, the Benson Marina site, which consists of a concrete boat launch, a picnic shelter, gravel parking lot, and portable toilet. PacifiCorp says this area is inadequately sized and in disrepair. Because of the lack of designated access facilities, visitors often park in and use areas on PacifiCorp property leased for agriculture, or on other private property. There are no permanent sanitary facilities on the reservoir. Hence, unauthorized use of private and leased lands by recreationists has created some conflicts with local landowners and leaseholders in the past.

**Environmental Impacts and Recommendations:** PacifiCorp is proposing a

major recreation access project at the reservoir that involves constructing seven new public boat access sites, canoe trails, signage, a loop trail, and interpretive facilities (see Figure 4). Two of the new boat access sites would be designed for powerboats, the rest for small boats and canoes. In addition, the existing Benson Marina site would be enlarged and upgraded, and an interpretive sign would be installed at the powerhouse.

Under Pacific Corp's plan, the Cutler Canyon, Cutler Marsh and Benson sites would have the most developed facilities and would be the focal points for recreation in the upper, middle and lower sections of the impoundment. Each of these areas would have a concrete boat launch, parking for from 15 to 40 vehicles, docks, and picnic and restroom facilities. The Benson area would be the largest and would include a loop trail for hiking, fishing, and wildlife viewing. Other sites (upper and Lower Benson, Little Bear River, Logan River, plus several small access areas) would be designed to accommodate non-motorized boating, hunting, and picnicking. Canoe trails in the southern, marshy areas of the reservoir would facilitate wildlife viewing and waterfowl hunting. Finally, to establish baseline data on recreational use of the lake, Pacific Corp would conduct a user survey.



Figure 4. Conceptual Plan for Pacifi Corp's Proposed Recreation Facilities -  
Source (Pacifi Corp, 1991)

All of the above recreation enhancements would be in place within 2 to 4 years of issuance of a new license for the project per the following schedule:

RECREATION AREA	COMPLETION SCHEDULE
Benson	2 years after license
Cutler Marsh	2 years after license
Cutler Canyon	2 years after license
Upper and Lower Benson	3 years after license
Clay Slough	3 years after license
User Survey	4 years after license

None of the agencies commented on Pacifi Corp's recreation plan in response to the Commission's final notice on the application. However, comments from the agencies during pre-filing, and in response to our additional information request, indicate that they support the plan. For instance, the Utah Department of Natural Resources, Division of Parks and Recreation (UDPR) states, in a November 5, 1991, letter, commenting on the draft application - "In conclusion, we feel the analysis was very well done, and conforms to the

objectives and professional planning processes recommended in the Utah State Comprehensive Outdoor Recreation Plan (SCORP); and has used the most recent SCORP data for the thorough analysis achieved". They also ask to be involved in the final design of the facilities.

The Utah Department of Natural Resources, Division of Wildlife Resources (UDWR), also commenting on the draft application, in a November 7, 1991, letter, states "We generally concur with PacificCorp's proposals to develop and enhance recreational opportunities in the project area." They go on to emphasize that they are especially interested in a new access site being developed in the Cutler Canyon area, and that this should be a top priority. PacificCorp subsequently included a Cutler Canyon access area in their final application as a priority item.

The FWS, in a May 28, 1993, letter, states that they believe the proposed recreational developments would have minor impacts on fish and wildlife, and that they would provide substantial recreational benefits.

The American Whitewater Affiliation requests, in an October 26, 1992, letter, that PacificCorp allow the public to access the bypass reach for boating during naturally occurring high-flow periods.

Mr. Paul Stewart, an adjacent landowner and farmer, has the following requests regarding PacificCorp's recreation proposals: (1) wants PacificCorp to assume liability, where applicable, for damage to private property adjacent to Cutler reservoir caused from wildlife and sportsmen, including but not limited to damage to crops, vandalism, theft, fire, increased risk of accidental shootings resulting in fatalities or serious injury at or near private residences; (2) opposes the development of the "Potential Recreation Access" adjoining his property including fences, and also opposes the development of the "Potential for Improved Pheasant Hunting" at the property to the south of his home; and (3) wants PacificCorp to locate nature trails away from private lands where negative impacts would be lessened.

Mr. Wayne Cardon, also a local farmer, supports PacificCorp's proposal to upgrade boat launching facilities at the Benson Marina site, and to construct a new boat access area at Cutler Marsh. However, Mr. Cardon does not believe a nature trail is a good idea at the Benson site. He's concerned about: (1) potential cropland fires caused by careless users; and (2) increased traffic on narrow roads frequented by agricultural equipment.

Conclusion. Absent a current recreation use study, it is quite difficult to say how much use Cutler reservoir is attracting. However, long-term estimates of water-based recreation in the United States predict a compound annual growth rate of about 1.5% from 1977 through 2030 (Walsh, 1986). Applying this growth rate to Cutler from 1973 to 1993 would show use of the lake to currently be around 13,266 visitors. However, considering its size compared to other lakes in the region and the number of visitors they are attracting, Cutler could accommodate a much higher level of use. The only apparent impediment to public use of the reservoir is the lack of adequate access facilities. We believe the new facilities that PacificCorp is proposing would encourage significant additional public use of the project area. Table

1 below shows current annual visitation at lakes with public access facilities within 50 miles of Cutler. As expected, the larger lakes, with more recreational development are attracting the most people. Average annual visitation per surface acre of water for these five lakes is 139.38. Assuming the proposed recreation facilities were developed at Cutler and using this regional average rate of participation per surface acre, the Cutler impoundment could attract about 167,256 visits. In addition, PacificCorp's proposed buffer zone, habitat enhancements, and reservoir management plan, discussed above in Sections 1-4 would enhance the lake's aesthetics by limiting drawdowns, reducing soil erosion and sedimentation, and controlling grazing.

Table 1. Visitation Levels at reservoirs within a 50 to 60 mile radius of the Cutler Project.

NAME	SURFACE ACRES	PROXIMITY	RECREATION FACILITIES AREA	ANNUAL VISITATION	CAPACITY USAGE
Causey	140	40 miles southeast	2 acres	20,248	Unknown
Bear	78,800	35 miles northeast	377 acres	300,000+	Unknown
Hyrum	475	15 miles south	40 acres	166,704	Reservoir use is at or near capacity.
Pineview	2,870	50 miles south	200 acres	440,675	Reservoir use is at capacity and exceeded on some weekends.
Newton	280	5 miles north	2 acres	12,300	Reservoir use is near capacity.
Cutler	5,500 (1,200) 6		2 acres	unknown	Used under capacity.

5 139.38 x 1,200 (surface acres at Cutler with a greater than three-foot depth) = 167,256.

6 Only 1,200 surface acres have a depth of greater than 3 feet.

The number, location, and variety of facilities proposed by Pacific Corp is reasonable given the size and branched nature of the lake and the different water depths and experiences available.

Regarding Mr. Stewart's concerns, there should actually be fewer instances of public encroachment on private land if the new facilities are constructed. Providing specific, designated areas for parking and access by foot or boat should effectively steer recreationists away from private lands. We do recommend, however, that Pacific Corp include in their plans, measures to ensure that the public uses only designated areas, and monitoring of use to address the concerns of adjacent landowners. However, there undoubtedly are some people who would still trespass. As long as they've been properly informed, which we see is the responsibility of Pacific Corp and private landowners, it's the individual who should be held responsible for his/her own actions. We're also reluctant to assign any liability to Pacific Corp for crop damage from waterfowl. We understand that waterfowl crop damage is a concern, and the proposed RMP would include measures to steer waterfowl away from croplands. Although we don't anticipate an increase, it's likely that there would still be some damage. However, whatever crop damage occurs due to waterfowl around the reservoir is probably minor when compared to the benefit of the crops being so close to irrigation water.

Regarding his concern about the areas of potential recreation enhancements, the nearest area to his home (about 0.5 mile away) is a proposed 5-car parking area for hunting access (see Figure 4 of the EA). No facility is currently planned for the potential access area that he is concerned about, nor is any facility proposed for the area on the opposite side of the lake from his home. We also note that all of the proposed recreation areas and access points are located within the project boundary. With proper management, the Benson access area and trail could be compatible with adjacent land uses. We do recommend, however, that final design drawings for the proposed facilities be prepared in consultation with the agencies and interested parties before filing the final recreation plan for Commission approval. We discuss the economic impact of providing the recreation enhancements in Section VI, and make our final recommendation on these measures in Section VII.

Pacific Corp's plan includes a policy of continuing to allow general public access to Pacific Corp land at the project area. Regarding allowing access to the bypass reach, Pacific Corp would maintain the existing locked gate and would provide limited public access upon request only. This should address the AWA's concern for access to the bypass reach since no specific facilities are being requested.

Unavoidable Adverse Impacts: Constructing Pacific Corp's proposed recreation facilities would impact 0.98 acres of wetlands. These impacts are discussed above in Section 3.

## 7. Land Use

Affected Environment: Primary land uses in the Bear River Multi-County Planning District (MCD), which includes Cache, Box Elder, and Rich counties, are agriculture, range, and forest. About 40 percent of the MCD is public land under state or federal ownership. This includes three national forests (Wasatch-Cache, Caribou, and Bridger), several state parks, national wildlife refuges on Great Salt and Bear Lakes, plus land under Bureau of Land Management or Department of Defense control. Cache Valley, however, where the project is located, is almost entirely under private ownership.

The regional economy is based on a mix of agriculture, manufacturing, government, and trade. In Cache and Box Elder counties, agriculture is the driving force, supporting food processing, dairying, and related industries. About 310,000 acres or 60 percent of Cache Valley is native vegetation that is used to graze sheep and cattle. The main cultivated crops include alfalfa, small grains, sugar beets, silage corn, and pasture.

Pacific Corp owns about 9,700 acres at the project site, mostly around the reservoir. Of this, about 5,500 acres consist of the reservoir itself. The balance includes about five square miles of wetlands on the south side of State Highway 30; upstream parcels along Clay Slough, and along the Bear, Logan, and Little Bear Rivers; plus land along the Bear River to a point about 3,500 feet downstream of the dam.

Of the land owned by Pacific Corp, about 5,107 acres are leased to 32 different parties. Just over 900 acres of this land is actually within the reservoir at normal high water. About a third of the total leased land is pasture, most of which is located around the southern shoreline. Fifteen percent is used for alfalfa and cereal grains. The remaining land is not currently being used for any specific purpose other than conservation. Land leases are renewed annually, and some have been held by the same party for 60 years. Most of the leases are either entirely or partially within the project boundary, but a few are entirely outside.

There are apparently few controls currently placed on leased lands as cattle have been allowed to graze and cultivation occurs up to the water's edge. This has adversely impacted native shoreline vegetation, wildlife habitat, and the reservoir fishery. A growing population of Canada geese has also caused some crop damage. Other land uses affecting the reservoir include dairies and stockyards along the Bear River upstream, and the city of Logan sewage treatment facility, which releases treated wastewater into the reservoir.

Environmental Impacts and Recommendations: Mr. Paul Stewart, an adjacent landowner and farmer, has the following additional concerns and requests regarding Pacific Corp's proposals: (1) he wants reservoir banks repaired and stabilized or purchased or traded without diminishing the private landowners' privacy or land values; and (2) he's concerned that efforts to maintain lake levels for the benefit of the fish will adversely affect the ability of farmers to water their crops.

Pacific Corp's proposed RMP would affect land use and would involve setting

goals and policies for managing the project area, along with specific measures for individual management units - geographic areas of the reservoir with similar terrain, wildlife habitat, and hydrological and land use conditions. The RMP would identify specific lands to be excluded or added to the project boundary either through fee simple purchase or exchange, and possibly condemnation. Lease fees and lengths of leases would be subject to change, and the recreation plan would be finalized in the RMP. Further, certain land use practices would be limited, such as pesticide and herbicide application. The result would be a shift away from the more intensive agricultural practices along the reservoir edge to habitat management, and recreation.

Regarding Mr. Stewart's concerns; conceptually, PacifiCorp's proposal includes stabilizing the reservoir shoreline via the buffer zone, and purchase or exchange of lands to be included in the project boundary. Specific concerns about particular parcels of land adjacent to the reservoir, however, should be addressed when the final RMP is being prepared. All interested entities should have the opportunity to participate in preparing the final RMP. No information has been presented that indicates that PacifiCorp's proposed reservoir fluctuation limits would adversely affect farmers' ability to water their crops. In fact, a more stable water regime should make it easier to draw water directly from the lake.

Current leaseholders would, however, be adversely affected if lease fees are increased, and if certain lands are no longer available for agriculture. However, if lease periods are lengthened, leasees would benefit from more operational certainty and would be better able to use long-term planning. Those who own land adjacent to the reservoir should benefit from PacifiCorp's plans for stabilizing reservoir fluctuations, stabilizing the shoreline, and purchasing some shoreline lands. We don't, however, find any justification for condemning any non-project lands.

Unavoidable Adverse Impacts: There could be some loss of agricultural productivity on lands adjacent to the reservoir.

#### C. No-action Alternative

Under the no-action alternative, the project would keep operating under an annual license. None of PacifiCorp's proposed enhancement measures would be required, unless voluntarily implemented. Public access to project waters would continue to be very limited, and the benefits of the shoreline buffer zone and RMP would not be realized. In effect, there would be no resulting changes to the existing environment. We do not believe this alternative is in the public interest.

## VI. DEVELOPMENTAL ANALYSIS

The 30-MW project produces about 106 GWh of energy annually. With no minimum flow proposal for the bypass reach, the project would continue to produce about 106 GWh of energy annually. From our analysis, we find this annual energy generation for the project reasonable for the available flows in the Bear River.

In our economic analysis, we used PacifiCorp's assumptions of \$6,500,000 net investment cost in 1991 dollars, \$603,000 levelized annual operations and maintenance (O&M) costs, and 37.7 mills/kWh levelized energy value in 1991 dollars.

Due to the irrigation water rights of the Bear River Canal Company, which has its intakes above and below the Cutler dam, the project's dependable capacity of 30 MW is available only three months out of the year. In calculating the capacity value for the project, we used PacifiCorp's estimate of \$92.56/kW per year (1991 dollars) and gave PacifiCorp credit for 25 percent of the dependable capacity value for the year.

Staff and the resource agencies have agreed with PacifiCorp's proposal and have proposed no other enhancement measures that would add significant costs to the project. Our analysis shows that the project would be economically beneficial over a new 30-year license period.

PacifiCorp estimates that their proposed environmental enhancement measures in section V.B. would cost about \$751,000 with an additional cost of \$55,000 a year for O&M. Individual costs for these measures are as follows:

MEASURE	CAPITAL COST	ANNUAL O&M
Fish Cover structures	\$8,000 to \$10,000	None
Buffer Zone	\$200,000	\$3,000 to \$5,000
Wildlife Habitat Resource Management Plan	\$50,000 \$50,000	\$5,000 to \$10,000 None
Recreation Facilities	\$440,000 <sup>7</sup>	\$35,000 to \$40,000

The total translates to a loss from the current 30-year levelized net annual benefits of about \$221,600 or 2.1 mills/kWh. Even with this cost, the project would still be economical over a 30-year license.

## VII. COMPREHENSIVE ANALYSIS AND RECOMMENDED ALTERNATIVE

Sections 4(e) and 10(a)(1) of the Act require the Commission to give equal consideration to all uses of the waterway on which the project is located. When deciding whether, and under what conditions, a hydropower license should be issued, the Commission must weigh the various economic and environmental tradeoffs involved for these uses. When possible, the benefits and costs of the various alternative uses of the project area are quantified.

7 The cost of the interpretive sign is estimated to be \$500 to \$1,000 dollars. No schedule has been proposed for its construction.

Based on our independent review and assessment of the proposed project, additional recommendations, and the no-action alternative, we have selected the proposed project with some minor additional measures as the preferred alternative. We recommend this alternative because: (1) issuing a new license would allow PacifiCorp to continue to make electric power from this renewable resource available to their customers while conserving nonrenewable fossil fuels; and (2) the recommended environmental enhancement measures would improve fish and wildlife habitat and increase public use of the project area.

Our recommended alternative includes the following environmental enhancement measures:

- ù Conduct a Bear River Basin study to aid in the development of new operating procedures for stabilizing reservoir elevations in Cutler Reservoir.
- ù Enhance fish spawning, waterfowl nesting, water quality, and waterfowl hunting by limiting reservoir water level fluctuations via a test reservoir operating plan. This would be an interim measure as a part of the Bear River Basin Study.
- ù Install four fish cover structures in the reservoir.
- ù Replace the 1.0 acre of wetlands that would be lost from new recreation facility impacts.
- ù Combine PacifiCorp's proposed buffer zone, wildlife habitat and recreation enhancements, and resource management plan (RMP) into a single RMP for the project, and require consultation with local leaseholders and landowners when preparing the RMP to lessen or avoid impacts on agriculture and landowners.
- ù Install an interpretive sign at the powerhouse.
- ù Prepare and implement a cultural resources management plan.

The fish cover structures, the buffer zone and related wildlife habitat enhancements, and the recreation facilities would all involve significant costs. The basis for our recommending these measures is as follows.

#### Fish Cover Structures

The four structures proposed by PacifiCorp would provide cover for game and forage fish in an area where cover is needed. We believe that the increase in fish habitat that would result would lead to increased public use of the reservoir fishery such that the \$8,000 to \$10,000 cost would be balanced by at least as much public benefits over the term of the license. Therefore, we recommend that PacifiCorp prepare a plan for installing the proposed fish cover structures in consultation with the UDWR and the FWS.

#### Vegetative Buffer Zone, Wildlife Habitat Enhancement, and Management Plans

PacifiCorp would develop a Resource Management Plan (RMP) to protect and enhance wildlife habitat, recreation, and the continuation of managed



agricultural uses at the project. PacifiCorp has proposed a number of specific measures to enhance riparian areas and wildlife habitat north of State Highway 30. The RMP would also contain the same kind of enhancement measures for all project lands south of State Highway 30.

PacifiCorp's proposed measures for lands north of State Highway 30 and south of the highway (RMP) would enhance wildlife habitat. The buffer strip and seeded areas would provide food and cover for waterfowl and other wildlife. Also, the buffer strip would assist in reducing shoreline erosion and removing sediment and nutrients from sheet runoff, which would improve water clarity and may ultimately increase duck production. Including similar management techniques in the RMP, as PacifiCorp proposes, would enhance wildlife habitat south of State Highway 30. Enhancing project wildlife habitat would offset, in part, the cumulative impacts that agriculture, irrigation, hydroelectric projects, and industry have had on waterfowl in the Bear River Basin.

We believe the public benefits that would accrue over the term of a new license through increased public use of the project area as a result of these measures (buffer zone - \$200,000; habitat enhancements - \$50,000; RMP - \$50,000) justifies their cost. Therefore, PacifiCorp should prepare a final RMP that includes the location and final design of the proposed measures for the buffer zone and wildlife habitat enhancements.

#### Recreation Enhancements

There is an obvious need for additional, designated public access on the project reservoir. The lake is large, and is a significant resource very near a major population center. Further, this area of Utah has a growing population and many other lakes in this region are being used at near-capacity levels. PacifiCorp's proposed recreation developments would greatly enhance public access to the Cutler reservoir, and should lead to significantly greater use of the project area such that the \$440,000 cost is justified. We discuss the expected increase in use below, and in Section V.

#### Conclusion

As we've said, fish and wildlife resources, water quality, and recreation would be enhanced under PacifiCorp's proposal. We've generally adopted, as have the resource agencies, PacifiCorp's proposal. The only changes that we would make is to require that a cultural resources management plan be prepared and implemented for the project.

Because this measure wouldn't add a significant cost to PacifiCorp's proposal, we haven't added any extra cost to our analysis. Finally, we have used PacifiCorp's cost estimates for their proposed enhancement measures in our analysis. Where a range was provided (for example \$5,000-\$10,000), we have used the higher number. We have dismissed the no-action alternative, because it would not allow for any environmental enhancement measures.

The combined cost for PacifiCorp's proposed enhancement measures for the project is \$751,000, plus \$55,000 per year for O&M. This equates to an

average annual net cost, over the term of a 30-year license of \$221,600. The table below shows the impact that this cost would have on the project's economics.

Table 1. Impact of the recommended alternative on project economics.

	Net Annual Benefit in Dollars	Net annual Benefit in mills/kWh
Current Project	\$4,326,300	40.81
Recommended Alternative	\$4,104,700	38.72

We believe the public benefits from our recommended alternative justify the cost to the project. First, over 50 percent of the annual cost would be from the proposed recreation enhancements. The potential exists for the lake to attract over 150,000 annual recreation visits, based on current use data from other lakes in the region. The majority of these users would be viewing wildlife, hunting waterfowl, fishing, and boating.

Walsh (1986), reviewed 62 studies that estimated the economic value of a range of outdoor recreation activities. The average value of a recreation day over all activities was \$13.00. In order to justify the additional annual cost of \$221,600 for all of our recommended enhancement measures, just over 17,000 additional people per year would have to use the Cutler project over the term of a 30-year license (17,046 x \$13.00 = \$221,598). We believe that this level of growth is attainable and could go much higher. We, therefore, find that issuing a new license for the Cutler project, with Pacific Corp's proposed enhancements, and our minor additions, would be in the public interest. This alternative, which allows for the continued production of a renewable energy resource, would best adapt the project to a comprehensive plan for improving, developing, or conserving the Bear River.

#### VIII. RECOMMENDATIONS OF FISH AND WILDLIFE AGENCIES

No fish and wildlife agency recommendations were filed for the project in response to our notice that the application was ready for environmental analysis.

#### IX. CONSISTENCY WITH COMPREHENSIVE PLANS

Section 10(a)(2) of the Act requires the Commission to consider the extent to which a project is consistent with federal or state comprehensive plans for improving, developing, or conserving a waterway or waterways affected by the project.

Under Section 10(a)(2), federal and state agencies filed five plans that address various resources in Utah. Four plans are relevant to this project 8. No conflicts were found.

#### X. FINDING OF NO SIGNIFICANT IMPACT

In this EA, we find that issuing a new license for the project would not significantly adversely affect the resources identified for analysis, and would enhance fish, terrestrial, wildlife, water quality, aesthetics, and recreation resources. The only unavoidable adverse impacts would be an adverse impact on 0.98 acres of wetlands due to the proposed recreation facilities, and a probable loss of agricultural productivity on some lands adjacent to the project reservoir. We conclude that issuing a new license for the project would not be a major federal action significantly affecting the human environment. Therefore, an Environmental Impact Statement is not required.

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Staff Responses

APPENDIX A - Comments on the Draft Environmental Assessment and  
Hydropower Licensing