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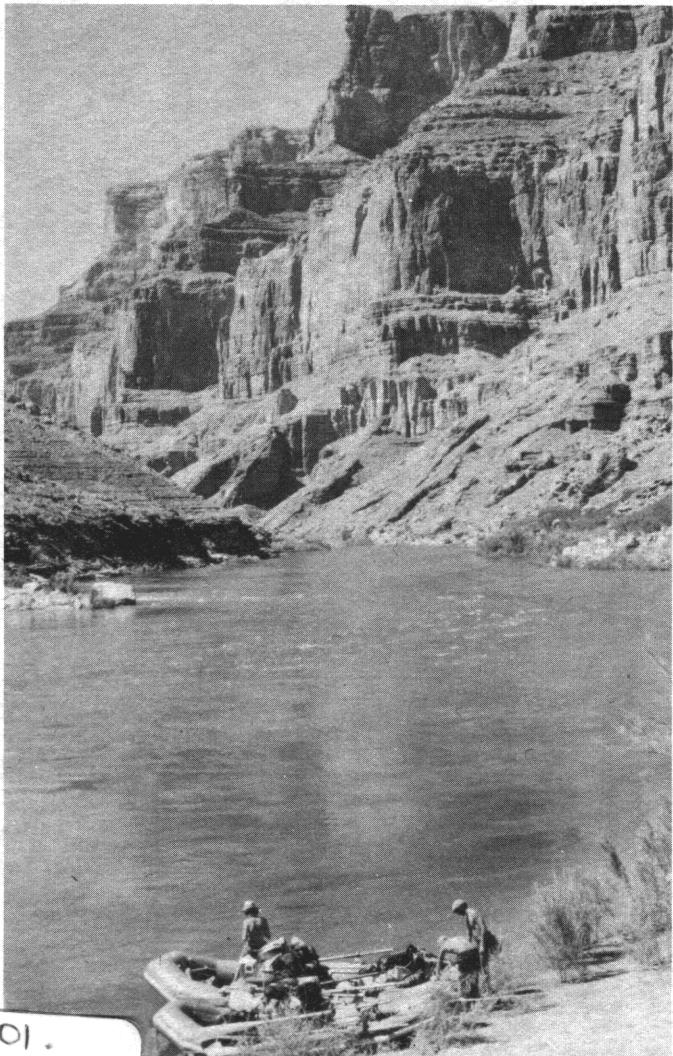
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GLEN CANYON ENVIRONMENTAL STUDIES

PHASE II AND III PLAN FOR IMPLEMENTATION

FEBRUARY 1989



UNITED STATES DEPARTMENT
OF THE INTERIOR



BUREAU OF RECLAMATION
FISH AND WILDLIFE SERVICE
NATIONAL PARK SERVICE

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ADMINISTRATION

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United States Department of the Interior

BUREAU OF RECLAMATION
UPPER COLORADO REGIONAL OFFICE
P.O. BOX 11568
SALT LAKE CITY, UTAH 84147

IN REPLY
REFER TO:

FEB 24 1989

UC-410

Glen Canyon Environmental Studies Constituent Groups

Subject: Glen Canyon Environmental Studies (GCES) Transmittal
of the Final GCES Phase II Implementation Program
Document (GCES)

Enclosed for your information is the final version of the Glen Canyon Environmental Studies (GCES) Phase II and III Program for Implementation. This document is the end product of the series of reviews and constituents meetings which have been held on the GCES Phase II program.

The intent of this document is to serve as the general guide for initiation and completion of the technical and policy level activities associated with the GCES program. As a guide, it will provide us with the basic direction, but is not intended to provide the technical details of the individual studies.

Many written and verbal comments have been received during the development of this document. A wide range of interpretations exists between the constituent groups. This document is a consolidation and integration of those comments and reflects the many areas of concern.

The GCES Phase II and III efforts are an extension of the original GCES program goals and objectives. The objective of the GCES program remains to collect the information necessary to determine if the operational criteria at Glen Canyon Dam requires modification. Issues regarding the National Environmental Policy Act, will be addressed after the technical reports and review by the GCES Executive Review committee are completed.

We appreciate your continued involvement in the GCES program and hope that this document will help you to participate in an effective manner. Please direct any questions that you may have on this document to this office or the GCES Program Manager, David L. Wegner, at (801) 524-6086.

Sincerely,

ACTING

Regional Director

Enclosure

GLEN CANYON ENVIRONMENTAL STUDIES
PHASE II AND III
PROGRAM FOR IMPLEMENTATION

I. INTRODUCTION

The Glen Canyon Environmental Studies (GCES) Program is a cooperative effort among the Bureau of Reclamation (Reclamation), the National Park Service (NPS), and the U.S. Fish & Wildlife Service (FWS) to determine the impacts of the operation of Glen Canyon Dam powerplant on the natural and recreational resources of Glen and Grand Canyons. The Western Area Power Administration (Western), Department of Energy, has been designated as a cooperating agency and participates in both the technical and policy areas.

The objective of this document is to outline the basic process for implementation and completion of Phase II and Phase III of the GCES Program. This document will be used to guide the development of the specific study plans, the public information transfer program, and the completion of the summary reports.

It is the intent of this document to serve as a guide for discussion and implementation of GCES Phase II activities and not to define the technical studies. At the completion of the GCES Phase II technical activities, the decision-policy process (Phase III) will begin. The broad components of Phase III process are included in this document.

II. HISTORIC BACKGROUND

In December 1982, the Commissioner of the Bureau of Reclamation, Department of the Interior (Department) directed that the GCES Program be initiated as part of the Environmental Assessment of the uprating and rewinding of the generators at Glen Canyon Dam (UC-FONSI 83-1). (Attachment 1). The primary objective was stated as, "Studies will be undertaken on the current operation of Glen Canyon Dam to see how the present flow patterns impact upon the total riverine environment in the Grand Canyon and how various low-flow periods affect rafting and the fisheries resources in the river."

Specifically, the studies were to focus on sediment transport-beach erosion studies, biological studies associated with the sediment studies, and environmental studies of the effects of the present and historic operation of Glen Canyon Dam on the vegetation, wildlife, fishery, recreation, and other environmental resources of the Grand Canyon.

In conjunction with the environmental studies, an additional objective was to undertake an analysis of potential alternative operating criteria, consistent with the Colorado River Storage Project requirements, to see if feasible alternatives to present operating criteria could address many of the concerns raised on Reclamation's uprating assessment.

The original GCES efforts, now called Phase I, focused on the collection of the technical information necessary to define the impact that the present operation of Glen Canyon Dam powerplant is having on existing downstream resources of Glen and Grand Canyons. The GCES Final Report, issued in January 1988, reflects the GCES Phase I findings.

While it was possible to address many aspects of the first objective (technical studies), the impacts associated with low and fluctuating flows were not able to be addressed. Greater-than-powerplant-releases and continued high powerplant releases, necessary to prevent flooding, reduced the opportunity to address low and fluctuating flow conditions. The limited information collected on these flows identified some problem areas but not in sufficient detail to establish operational recommendations.

The studies took place in a period of time which was unlike the previous 20 years of operation. During Phase I, flows were much higher and steadier than previously experienced under regulated flow. The application of GCES findings to future situations should therefore be made with caution. The GCES provided much useful information on the relation of resources to operations, but also identified potential conflicting requirements of important resources, such as that between the humpback chub and beaches. The studies showed that the relation between environmental and recreational resources and operations is complex, depends on antecedent conditions in many cases, and involves interactions and indirect effects which are poorly understood. For those reasons, collection of information about response of resources to flows of sufficient detail and reliability to form the basis for long-term operations criteria was not possible within the scope and time limits of GCES Phase I.

The National Academy of Sciences (NAS), Water and Science and Technology Board, was asked to participate in the GCES program in January 1986. The NAS was brought into the program too late to participate in the initial study plan development. However, they were able to review the individual technical study reports and the integrated final report. Their critique and recommendations are included in the publication "River and Dam Management: A Review of the Bureau of Reclamation's Glen Canyon Environmental Studies."

The GCES Executive Review Committee (ERC) made up of policy/management representatives of Reclamation, NPS, FWS, the Department (Office of Environmental Review), and Western took the GCES Phase I

information and through a review of potential management impacts, determined that a decision on the impact of operations of Glen Canyon Dam powerplant could not be made. The ERC recommendations for further study and legal opinions on priorities of operations of Glen Canyon Dam were presented in the May 1988 ERC Final Report which was forwarded to the Department for review and action.

The Department reviewed the May 1988 ERC Final Report and on June 16, 1988, issued a letter concurring with the conclusions of the ERC that additional studies needed to be completed prior to making a decision (Attachment 2). The Assistant Secretaries specifically directed that the GCES Phase II efforts be focused on two areas: "(1) the effects of both low and fluctuating flows on endangered fish species, the trout fishery, and beach aggradation and degradation, and (2) detailed economic analysis of operation options." They further recommended that the study plan should include input and appropriate recognition of the concerns of the associated bureaus and agencies of the GCES Program, all constituent groups, and the NAS. Study plans should also address "as many recommendations by the NAS as feasible in view of the time available for additional study effort." "The technical study design group will determine the exact time necessary and provide that information as guidance to the affected bureaus and agencies of the GCES program and all constituent groups." The duration of the studies will be for a minimum of 1 year, with the end point to be determined by flow levels and the technical effort required.

This implementation document was developed to help focus the responsibilities and direction of the GCES Phase II activities and has been provided to the constituent groups for review and discussion. Their comments are included in Appendix A. Three public information meetings have been held to gather verbal comments and discuss potential GCES Phase II actions.

III. GCES PHASE II PROGRAM

A. Organization. When the GCES Program was initiated in 1982, it was organized as a cooperative effort among Reclamation, the NPS, and the FWS. Primary coordination of the GCES Program was with Reclamation. Additional technical support and expertise were supplied by the U.S. Geological Survey, Arizona Game & Fish Department, private consultants, and academic institutions.

The GCES Phase II Program requires the continued direction and expertise of the original cooperating groups. With the expansion of the studies into economic relationships, additional expertise and input are required from Western, power customers, the Lower Colorado Region (Reclamation), the seven Colorado River Basin States, environmental groups, recreation groups, public interest groups, and additional private consultants.

Two primary study teams are being organized, the Environmental Study Team and the Economic Study Team. The Environmental Study Team will be responsible for the development of the technical study plans associated with trout, endangered species, and beach aggradation and degradation. The Economic Study Team will be responsible for development of the study plan and analysis of the economic relationships associated with the operations of Glen Canyon Dam. As necessary, adjunct work groups will be formed. The composition will be determined by the technical expertise required to fulfill the GCES Phase II needs. Representation of these two study teams is identified in Table 1.

TABLE 1. COMPOSITION OF GCES PHASE II STUDY GROUPS

ENVIRONMENTAL STUDY TEAM

- * BUREAU OF RECLAMATION (UC & LC) *
- * NATIONAL PARK SERVICE (GCNRA & GCNP) **
- * FISH & WILDLIFE SERVICE
- * ARIZONA GAME & FISH DEPARTMENT
- * U.S. GEOLOGICAL SURVEY
- * WESTERN AREA POWER ADMINISTRATION
- * COLORADO RIVER BASIN STATES
- * POWER CUSTOMERS
- * ENVIRONMENTAL GROUPS
- * RECREATION GROUPS

ECONOMIC STUDY TEAM

- * BUREAU OF RECLAMATION (UC, LC & DENVER)
- * NATIONAL PARK SERVICE (GCNRA & GCNP)
- * FISH & WILDLIFE SERVICE
- * ARIZONA GAME & FISH DEPARTMENT
- * WESTERN AREA POWER ADMINISTRATION
- * COLORADO RIVER BASIN STATES
- * POWER CUSTOMERS
- * ENVIRONMENTAL GROUPS
- * RECREATION GROUPS
- * ECONOMIC CONSULTANT

TECHNICAL INTEGRATION WORK GROUP

- * BUREAU OF RECLAMATION (UC & LC)
- * NATIONAL PARK SERVICE (GCNRA & GCNP)
- * FISH & WILDLIFE SERVICE
- * ARIZONA GAME & FISH DEPARTMENT
- * U.S. GEOLOGICAL SURVEY
- * CONSULTANTS
- * WESTERN AREA POWER ADMINISTRATION
- * COLORADO RIVER BASIN STATES
- * POWER CUSTOMERS
- * ENVIRONMENTAL GROUPS
- * RECREATION GROUPS

* UPPER COLORADO & LOWER COLORADO REGIONAL OFFICE
** GLEN CANYON NATIONAL RECREATION AREA
GRAND CANYON NATIONAL PARK

A Technical Integration Work Group will be responsible for combining the environmental and economic studies into a final integrated study plan. The Technical Integration Work Group will be selected by the Senior Scientist and the GCES Program Manager, and will include technical representative from the appropriate groups and agencies. The work group will provide the primary integration between the two study teams and be the primary focus in the development of the integration study report(s). All activities of the integration work group will be continuously coordinated with the Environmental and Economic Study Teams.

B. Process to Completion. Each of the study teams will follow a well defined process. The Environmental Study Team will develop the technical needs of the studies. This will include determination of the timing, flow requirements, technical data requirements, and quality assurance needs. In addition, once the technical environmental studies are agreed upon, contingencies for data collection will be developed in case variable flow, timing, or resource conditions occur during the study period.

The Assistant Secretaries of the Department of the Interior stated that the necessary technical data will be acquired during normal operations of Glen Canyon Dam, and that every effort should be made to eliminate any impact on normal operations. The determination of flow levels to be studied and the timing of studies should be worked into the release programs of Reclamation and Western.

The intent of the GCES Phase II Program is to follow the Assistant Secretaries' directive. However, if specific environmental study requirements or completion of the objectives cannot be achieved due to conflicts with flow release patterns, the following resolution process will be followed:

1. An outline of specific flow requirements which differ from normal operations will be provided to Western. Western will be responsible for coordination with the power customers to determine short-term cost and electrical system impacts.
2. The decision to proceed with technical studies which require specific flows other than normal operation will be made by the ERC after the power impact assessment is completed. If the impacts are determined to be too great either in terms of cost, data, or timing, then contingency plans will be effected. The contingency plans for alternate data collection or analysis programs will be developed by the Senior Scientist and the Environmental Study Team.
3. Initiation of the field technical studies that require special flows will occur after the problems are discussed and resolved by the ERC, and a decision to proceed is made. This will require the coordination with the technical study teams to determine the importance of this information to the overall GCES program objectives.

The Economic Study Team may follow a similar development process. The Economic Studies program will include the following:

1. Agreement on initial specific analyses of operational options and method parameters to be used to assess the economic impacts.
2. Initiate the testing of the prototype economic study scenarios.
3. Coordination of study scenarios with the Environmental Study Team; and
4. Revision and completion of the economic studies consistent with the final recommendations of the Environmental Study Team.

The Technical Integration Work Group will coordinate with both the Environmental and Economic Study Teams to ensure that interactions among components are considered. In addition, the Technical Integration Work Group will be responsible for taking the results of the environmental and economic studies and developing the final technical report(s) which will address the issues raised by the Department and the ERC. The report(s) will be reviewed by all constituents, agencies, and bureaus prior to completion.

C. Study Plan Development. The specific requirements of the environmental and economic studies are that they address the areas identified by the Department, the ERC, and the NAS committee. The NAS, in its review of the GCES Phase I Program, recommended that a senior level scientist be brought in at the beginning of the planning stages and that a scientific oversight group should be established. A Senior Scientist is being sought to oversee the scientific integrity of the GCES Phase II work and the preparation of the technical report(s). The Senior Scientist will be responsible for establishing a scientific oversight/review process for the technical studies and for seeing that the GCES scientific program receives advice and direction from other senior scientists who can provide experience and knowledge not obtainable otherwise. The NAS will continue to function in an advisory and oversight role through all aspects of GCES Phase II.

The environmental and economic study plans will be developed concurrently and will be consolidated by September 30, 1989, into an integrated technical study plan. The plan will be provided to the constituent groups for their information, and will identify monitoring and technical study requirements. The adequacy of the plans to address study goals will be the responsibility of the Senior Scientist, the technical study teams, and the GCES Program Manager.

To ensure the consolidation and integration of the environmental and economic study efforts, a detailed Integrated Resource Study Plan will be developed by the Technical Integration Work Group and the Senior Scientist. By addressing the technical issues in an integrated plan, study timing, budget, and relevant future activities by the other bureaus, constituents, and agencies, can be identified.

The Integrated Resource Study Plan will focus on five primary areas:

1. Identify study components for the environmental and economic portions which should be monitored and/or studied in any continued program.
2. Develop a program for monitoring which will help to determine the response of resources to changes in operations in the short-and long-term.
3. Complete studies to answer Departmental requirements. These studies are those which can be completed within a reasonable time period based on the desired confidence level of the answers as defined by the ERC. The technical study teams will identify the time necessary to acquire the desired confidence levels.
4. Identify the critical resources in Glen and Grand Canyons that should be monitored and/or studied in any continued long-range program after the completion of the GCES Program. This will allow for a full integration of the study components into an adaptive and flexible study program.
5. Monitor assumptions used in the economic analysis and revise assumptions if they become invalid.

A draft Integrated Resources Study Plan, which will take into account the specific work being completed under the environmental and economic study plans, will be presented to the NAS, GCES constituents, the Colorado River Basin States, and the ERC for review and comment. The final Integrated Resources Study Plan will be provided to all GCES Phase II participants and the Department.

The development and implementation of the environmental and economic studies will follow the procedure outlined in Section B. The Integrated Resources Study Plan will provide an outline for the development of the GCES Phase II Final Report(s) and will provide the other agencies and bureaus of the GCES Program information on where to focus their resources and actions.

The development, review, and completion of the GCES Phase II technical integration report(s) will mark the end of the GCES Phase II activities.

IV. GCES PHASE III ACTIVITIES

A. Executive Review Committee Report. At the completion of the GCES Phase II efforts, the ERC will develop a revised ERC Report. This revised report will address the following items:

1. Review of the additional information collected under the GCES Phase II efforts.

2. Consider constituent comments and study results including an evaluation of the costs and benefits associated with any recommendations for modifications in the operation of Glen Canyon Dam; and
3. Review and refine, as necessary, the original ERC recommendations.

Upon completion of the draft Phase II ERC Report, discussions with the Colorado River Basin States, the power customers, the environmental constituents, the recreation constituents, and the other impacted groups and agencies will occur. The results of the ERC analysis, the potential impacts, and recommendations will be outlined and discussed in a series of constituent forums. After completion of the discussions, the ERC Report, the Final GCES Phase II Integration Report, and NAS documentation will be completed and forwarded to the Department.

B. Department of the Interior Actions. The Department will review all GCES Phase II documentation and recommendations (if any) for operational changes at the Glen Canyon Dam powerplant. The Department will determine whether the ERC recommendations are justified and should be proposed for implementation.

If the Department determines that no changes are justified, then the GCES Program will be terminated except for a monitoring program.

If the Department determines that changes should be proposed, then the Department will review these with the Basin States, through informal consultation. If the proposed changes can be implemented within the existing operating criteria and as a routine part of developing the Annual Operating Plan (without creating significant environmental impacts), then the National Environmental Policy Act (NEPA) compliance will not be required. If the Basin States agree that the changes in operations can be accommodated through the Annual Operating Plan, then the changes will be implemented and the GCES program will end except for a monitoring program.

If the States do not agree that the recommended powerplant operational changes can be incorporated within the existing Operating Criteria, or if significant environmental impacts are identified, then the Secretary will request a formal review of the operating criteria with the Basin States as provided under PL 90-537. The NEPA process will be initiated to determine the environmental impacts on the proposed changes in the Operating Criteria.

Under NEPA compliance activities, changes to operations at the Glen Canyon Dam powerplant would be explored. These alternatives could include but should not be limited to: construction of a reregulation dam at Lee's Ferry, establishment of additional transportation access points, operational changes, installation of a multiple-level outlet structure, and no action.

The decision process outlined is based on the premise that any change (within the existing Operating Criteria or a change in the Operating Criteria themselves) will be done in consultation with the Basin States as provided by PL 90-537. Reclamation assumes that the State representatives appointed by the Governors are representative of all valid State interests, including water, power, recreation, and the environment.

D. Section 7, Fish & Wildlife Service Endangered Species Actions. Reclamation is currently involved with endangered species responsibilities associated with the operation of Glen Canyon Dam. In 1978, the FWS issued a Jeopardy Biological Opinion on the operation of Glen Canyon Dam as related to the impacts on endangered and threatened species in the Grand Canyon. This action was taken under the authority of Section 7 of the Endangered Species Act of 1973 as amended (40 CFR Part 402).

As part of the GCES Phase I activities, the 1978 opinion was reviewed and formal Section 7 Consultation was reinitiated. Many of the issues associated with the 1988 Biological Opinion activities are intrinsic to the GCES Phase II Program. Technical field aspects of the environmental biological opinion at the conservation measures will be integrated into the GCES Phase II study plans.

V. SUMMARY

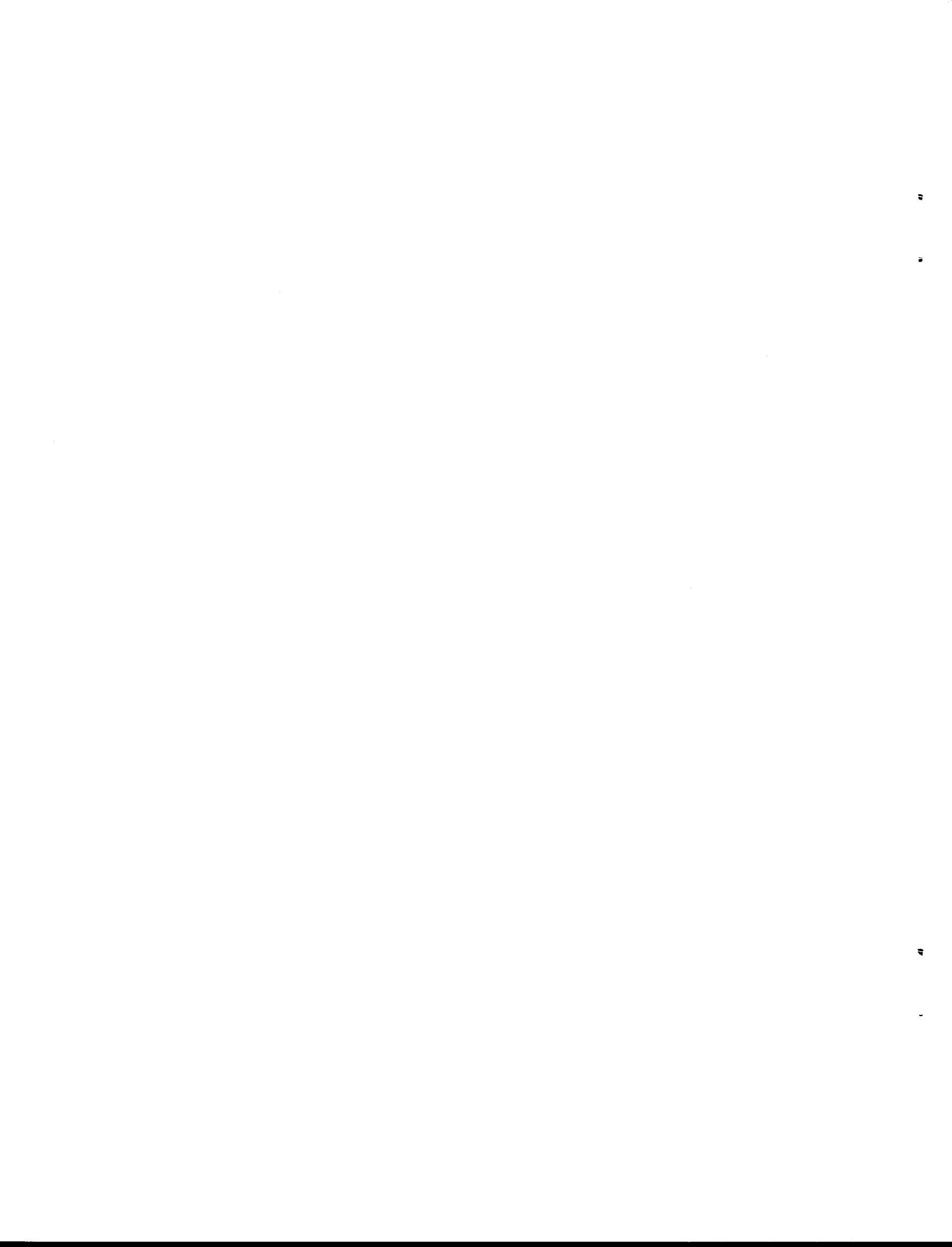
The information presented in this document presents the basic process necessary for completion of the GCES Phase II efforts and provides the focus for potential GCES Phase III efforts.

Timing and the completion of the GCES Phase II Program are of prime importance to agencies, bureaus, State representatives, and constituents associated with the effort. It is imperative that concurrence on the general process presented here is made before initiation of any field studies. Concurrent with the development of this implementation document is the development of the environmental and economic study plans.

The completion of the GCES Phase II and Phase III activities is dependent on the initiation of the program. A full public information transfer program which will include development of review schedules is being initiated. This will help to ensure that all perspectives are included in the GCES Phase II effort.

Attachments (2)

- (1) December 6, 1982, GCES Initiation Letter
- (2) June 16, 1988, Assistant Secretaries Letter





United States Department of the Interior

BUREAU OF RECLAMATION
~~WATER AND POWER RESOURCES SERVICE~~

WASHINGTON, D.C. 20240

GLEN CANYON UN

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DEC 12 '82

IN REPLY
REFER TO: 150

742

DEC 6 1982

Date	Initials	To
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Subj. Corresp. _____
Date Arr'd. _____

7/100

Memorandum

To: Regional Director, Salt Lake City, Utah

From: Commissioner

Subject: Uprating and Studies of Operational Alternatives--Glen Canyon Powerplant--Colorado River Storage Project (CRSP)

We have reviewed the proposed final Environmental Assessment/Finding of No Significant Impact (EA/FONSI) transmitted with your letter of October 27, 1982.

While we concur with your analysis of the potential environmental consequences of the proposed uprating and alternative courses of action, any decision by you to initiate the uprating program should take into account the following guidance:

1. The evidence presented indicates that the uprated generators are still economically viable if used only during maintenance activities or during emergencies and would provide greater flexibility even without any changes in current operating criteria. Consequently, the additional plant capacity resulting from the uprating will be restricted to present maximum water releases ($31,500 \text{ ft }^3/\text{s}$) from the powerplant. This restriction on operation of the uprated generators will remain in effect until a decision process, with appropriate NEPA compliance, has been completed on a long-term operating criteria for Glen Canyon Powerplant.

2. Studies will be undertaken on the current operation of Glen Canyon Dam to see how the present flow patterns impact upon the total riverine environment in the Grand Canyon and how various low-flow periods affect rafting and the fisheries resources in the river. We anticipate that these studies will evaluate various low-flow patterns, such as, 1,000, 3,000, 4,000, 5,000, and/or $8,000 \text{ ft }^3/\text{s}$. We also anticipate that you will evaluate fluctuating patterns as well as periodic high-flow periods to see if there is a point where high flows materially affect beach erosion, recreation, and fisheries.

740

To: Regional Director, Salt Lake City, Utah

2

We concur with your initiation of the following studies:

- a. Sediment transport-beach erosion studies below Glen Canyon Dam through the Grand Canyon.
- b. Biological studies to determine what impacts are occurring based on the above sediment transport studies.
- c. Environmental studies of the effects of the present and historic operation of Glen Canyon Dam on the vegetation, wildlife, fishery, recreation, and other environmental resources of the Grand Canyon.

These studies are to be conducted as a cooperative effort with the National Park Service (NPS), with the Bureau providing the funding, and being the lead agency. Other appropriate Federal and non-Federal agencies should also be requested to participate with the NPS and the Bureau in the above studies. We will need the assistance of the Fish and Wildlife Service in certain of these studies and a copy of this letter is being sent to the Director of the Fish and Wildlife Service to alert that agency of our decision and the need for its assistance.

3. In conjunction with these studies, you should undertake an analysis of potential alternative operating criteria, consistent with CRSP requirements, to see if there are feasible alternatives to our present operating criteria that will address the many concerns raised on our uprating environmental assessment. Should alternatives that meet the above criteria be identified, an environmental impact statement should be prepared. This would lead to a decision process to determine appropriate long-term operating criteria for Glen Canyon Powerplant.

Robert M. Broadbent

Concur:

Harry L. Grier

ACTING Director National Park Service

12/7/82

Date

Craig Volden

Assistant Secretary for Fish and
Wildlife and Parks

12/7/82

Date

David Houston

Deputy Assistant Secretary - Land and
Water Resources

12/7/82

Date



United States Department of the Interior

TAKE
PRIDE IN
AMERICA

OFFICE OF THE SECRETARY WASHINGTON, D.C. 20240

June 16, 1988

Memorandum

To: Director, Fish and Wildlife Service
Director, National Park Service
Commissioner, Bureau of Reclamation

From: Assistant Secretary - Water and Science
Assistant Secretary - Fish and Wildlife and Parks

Subject: Glen Canyon Environmental Studies

JUN 15 1988

We have completed our review of the Executive Review Committee report on the Glen Canyon Environmental Studies (GCES). We agree with the Executive Review Committee that several areas of concern require further study and additional analysis before any action can be considered by the Department.

These areas are: (1) the effects of both low and fluctuating flows on endangered fish species, the trout fishery and beach aggradation and degradation, and (2) detailed economic analysis of operational options. With these concerns in mind, we accept your recommendations to do further study of the foregoing issues, and direct you to develop a coordinated study plan that addresses them. The study plan must be technically and scientifically adequate to address the areas of concern. The development of the study plan should include input from and give fair and appropriate recognition to the concerns of:

- a. Associated bureaus and agencies of the GCES program
- b. All constituent groups
- c. National Academy of Sciences

The study plan also should address as many recommendations by the National Academy of Sciences as feasible in view of the time available for additional study effort.

The studies will require continued coordination among the bureaus and agencies of the GCES program. The technical components of the program should be determined through a coordinated development and review process. The overall program should be outlined and reviewed by the GCES/Executive Review Committee. If conflicts in coordination arise, our offices will be available to help facilitate a resolution.

You are directed to continue to provide the staff support necessary to accomplish the objectives of the GCES program. This support will include coordination of all aspects of the program.

The GCES program has been funded to date through CRSP power revenues under the operation and maintenance program. This same form of funding will be followed for the completion of the additional tasks identified.

The data required for these studies will be acquired during normal operation of Glen Canyon Dam. The study plan will provide for examination of a range of minimum flows and fluctuating flows. This will allow for a complete analysis of the relationships between operations of Glen Canyon Dam and the downstream impacts. Determination of the exact flow levels to be studied and the timing of those studies will be established by a technical study team and worked into the release programs of the Bureau of Reclamation and Western Area Power Administration. You should make every effort to eliminate any impact on normal power operations.

If flow conditions (either too high or too low) constrain the ability to observe the necessary test flows, the specific portion of the study that requires that flow will be postponed until proper flow conditions are possible. The specific contingency plans that will force this action to be taken will be worked out among the affected bureaus and agencies and provided to the technical study plan development group.

You should initiate the study plan development and constituent input immediately so that low flow studies associated with trout fishery concerns can be initiated by December 1988. The duration of the studies will be for a minimum of one year, with the end point to be determined by flow levels and the technical effort required. The technical study design group will determine the exact time necessary and provide that information as guidance to the affected bureaus and agencies of the GCES program and all constituent groups.

APPENDIX A

Constituent Group Comments



United States Department of the Interior

FISH AND WILDLIFE SERVICE

POST OFFICE BOX 1906

ALBUQUERQUE, N.M. 87103

In Reply Refer To:
Region 2: FWE/HC

JAN 27 1989

REC'D

9/10

MEMORANDUM

To: Regional Director, Bureau of Reclamation, Upper Colorado Regional Office, Salt Lake City, Utah

From: Regional Director, Region 2

Subject: Review of Glen Canyon Environmental Studies (GCES) Phase II Implementation Program (Reclamation--Arizona)

The Fish and Wildlife Service (Service) has reviewed the second draft of the GCES Implementation Program for Phases II and III, transmitted by your memorandum dated November 30, 1988, and provides the following general and specific comments.

GENERAL COMMENTS

The GCES program was created in response to the Bureau of Reclamation's (Reclamation) National Environmental Policy Act (NEPA) compliance responsibilities concerning the uprating and rewinding of the generators at Glen Canyon Dam. Use of the uprated capacity is subject to certain restrictions until "... a decision process, with appropriate NEPA compliance, has been completed on a long-term operating criteria for Glen Canyon Powerplant." (Commissioner of Reclamation, memorandum dated December 6, 1982).

Currently, Western Area Power Administration (Western) is also in the process of developing power contracts (post 1989) that relate directly to the daily operation of Glen Canyon Dam.

Both of these efforts clearly fall within the intent of NEPA, i.e., "... ensure that environmental information is available to public officials and citizens before decisions are made and before actions are taken (40 CFR Sec 1600.1)." In our opinion, there should be no question that NEPA procedures will be a part of establishing the long term operating criteria for Glen Canyon Dam. Under NEPA, agencies are required to "... integrate the NEPA process with other planning at the earliest possible time ..." (40 CFR Sec. 1601.2). While not recognized as such, we submit that the NEPA process has in fact been initiated with the effort to obtain public and agency input into what is needed to improve conditions in the river and study needs. This process should continue throughout Phases II and III of the GCES and the continuing process of establishing the long term operating criteria for Glen Canyon Dam.

2

Early recognition of the NEPA process to be followed in the Phase II GCES and establishing operational criteria would resolve one of the major issues raised by constituents at the public meetings in September 1988. While the specific final NEPA documents (Environmental Assessment (EA), Environmental Impact Statement (EIS)) may not be identifiable at this time, an EA will be the minimum document necessary. In short, we believe this document should recognize implementation of the NEPA process in the information gathering stages for this project.

The inclusion of the Commissioner of Reclamation's memorandum of December 6, 1982, was very useful to the understanding of the development and basis of GCES and should be included with any subsequent plan.

From the comments received at the public meetings, discussions at subsequent GCES meetings, and statements in this plan, we can understand the desire of the traditional project entities, water and power interests, to explain their role and to identify their concerns. In this regard, we recommend that their expertise be used to assist the expanded GCES team to consider the economic, legal, and institutional questions confronting GCES in addressing all resource concerns. A report on the existing criteria and implications of determining the long-term operating criteria should be prepared as part of Phase II. With this base, potential alternative operating criteria, as called for in the Commissioner's memorandum, could be developed.

SPECIFIC COMMENTS

Page 2, I. Paragraph (Para.) 1 - We agree that the GCES should be a cooperative effort and recommend that early in Phase II, the roles of the cooperators be defined more completely. The last sentence should be changed to read "... resources of Glen and Grand Canyons."

Page 3, II, Para. 4 - The first sentence should be changed to read "... of Glen and Grand Canyons."

Page 3, II, Para. 5, last sentence - The evaluation of potential, alternative operating criteria is crucial to GCES. Phase I Initiated an understanding of the existing operating criteria, but we believe that work was only a beginning in the substantial effort that will be required. For example, the role of hydropower in the operational priorities of Glen Canyon Dam needs to be addressed. The status of the Department of the Interior Solicitor's response to the questions raised by Western concerning project priorities should be provided to the constituents.

Page 3, Para. 6 - We suggest this paragraph be expanded as follows to explain why the impacts of low flow and fluctuating flows were not able to be addressed.

While it was possible to address many aspects of the first objective (technical studies) the impacts associated with low and fluctuating flows were not able to be addressed. The advent of greater-than-powerplant releases and continued high releases necessary to prevent flooding reduced the opportunity to address these flow conditions. The limited information collected on low and fluctuating flows identified some problem areas but not in sufficient

Glen Canyon
Environmental Study

Received 2/7/89

detail to establish operational recommendations. Further, the findings of the Phase I effort identified that the relationship among the environmental, recreational, and operational components were very complex and dynamic. The second objective (evaluation of alternative operating criteria) was left for the policy-management level staff to evaluate.

Page 3, II, Para. 7 - We believe that the Assistant Secretaries' memorandum dated June 16, 1988, directed the study effort for Phase II based, in part, on the National Research Council's (Council) letter of July 11, 1988. It should be noted that the Council also stressed that "Much more ambitious studies of the native fishes, and particularly of the humpback chub, will be required in the future." We also note that the Assistant Secretaries' memorandum stated that "The technical study design group will determine the exact time necessary . . ." for the additional studies. We recommend that this direction be specified in the Implementation Plan.

Page 4, III.A, Para. 3 and 4 - The organization and composition of the various study teams may not lend itself to an efficient working group. A number of power utilities may now be represented on all the teams. A method of securing the participation of all the interest groups or individuals, while still maintaining efficient working groups of qualified individuals, needs to be developed. We suggest that one team could replace the Environmental, Economic, and Intergration teams being proposed here. Work groups could be formed to assist with specific tasks as needed.

Page 4, B, 3 and 4 - We recognize that the Assistant Secretaries' memorandum directs that ". . . every effort be made to eliminate any impact on normal power operations" and that the procedure outlined here is to permit some degree of experimental design that will allow for hypothesis testing. The consequences of not being able to establish reasonable periods of experimental releases (a longer period of study) should be emphasized.

Page 5, C, Para. 4 and 5 - The Interim Technical Integration Team provided to the GCES Study Manager on November 28, 1988, an outline of work activities to accomplish the directives in the Assistant Secretaries' memorandum, and the intent of the 1982 memorandum of the Commissioner of Reclamation. That outline included an Interim work plan to direct GCES activities until an Integrated Resource Analysis Plan was prepared. We understand that the Integrated Resource Analysis Plan was to be initiated during October 1989. The relationship between the Integrated Resource Analysis Plan and the Integrated Study Plan should be addressed for clarification purposes.

Page 6, C, 2 - The wording here, "study gaps" and "timely manner," implies a limited study effort. Will the determination of a "timely manner" be addressed by the technical study design group?

Page 6, D - The previous discussion in the plan on the conclusion of Phase II activities and the discussion here on Phase III do not identify how the alternative operating criteria will be developed, and more importantly, how they will be integrated into the GCES program. We do not believe these alternatives should be derived after completion of the studies, since it may be necessary to collect data to answer questions raised during the development of the alternatives.

Page 7, I, B - As we mentioned in our general comments, we believe that NEPA compliance will be necessary for any of the decisions presented here that conclude the GCES Program. The decision not to change may be of more significance environmentally than the other listed actions.

Page 7, B, Para. 6 - While a physical possibility, we do not believe it would be in the Department of the Interior's interest to be suggesting another structure on the Colorado River between Glen Canyon Dam and Lake Mead. However, it could be pointed out that there are alternatives to peaking power, such as the Spring Canyon Pumped Storage Project, that do not appreciably impact a live stream or river.

Page 7, D, Para. 1 - The two separate legislative authorities being discussed here should be clarified. The Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 661 et seq.) requires that the Service and the head of the concerned state wildlife agency shall be consulted when the waters of any stream or other body of water are proposed to be modified due to construction or changes in operations for previously authorized projects. Reports by the Service and the state agency will be given full consideration by the project agency. The Service provided a FWCA report on the proposed project in 1988. We provided a FWCA Planning Aid Memorandum on the Concluding Report for the Glen Canyon Peaking Power Studies in 1982. Because collection of basic information on the impact of project operations on fish and wildlife resources is needed, and indeed, will be a substantial portion of the Phase II studies, a FWCA report has not been prepared to advise Reclama-tion and the Secretary of Interior of those responsibilities. This report will be prepared in cooperation with Arizona Game and Fish Department, Reclamation, and the Service.

While the FWCA report may discuss endangered species, the 1978 Jeopardy opinion on the operation of Glen Canyon Dam was issued under the authority of Section 7 of the Endangered Species Act of 1973, as amended (40 CFR Part 402).

Page 7, D, Para. 2 - A draft jeopardy biological opinion on the existing operation of Glen Canyon Dam was issued in 1987. At that time, Reclamation requested that the Service consider the concept of a non-jeopardy biological opinion with Conservation Measures. These measures would be intended to reduce the adversity of the project below a jeopardy threshold level for threatened and endangered species and would, as a result, be agreed to by Reclamation and the Service. We believe that studies included in the biological opinion should be incorporated as part of the GCES Integrated studies, if possible.

Page 8, V, Para. 2 - We are also concerned with the timing of the Phase II study effort and share with you the recognition of the need to agree on the general process before initiating any substantial field studies; however, we support the National Research Council's recommendation that monitoring of critical resources be continued until the integrated studies are developed.

We recognize the complexity of the resources allocation issues that confront the GCES. Our experience with Phase I indicates the need to design the necessary studies adequately at the beginning of Phase II.

The opportunity to review and comment on this draft plan is appreciated. If you have any questions regarding this document, or if we can be of further assistance, please contact Messrs. Sam Spiller (Field Supervisor, Phoenix, Arizona, telephone: 602/261-4720 or FTS 261-4720) or Jim Young (Assistant Regional Director - Fish and Wildlife Enhancement, Albuquerque, New Mexico, telephone 505/766-2324 or FTS 474-2324).



cc: Duane Shrouse, Arizona Game and Fish Department, Tucson, AZ

Mr. Robert Mac Nish, U.S. Geological Survey, Tucson, AZ

Mr. John Reed, National Park Service, Page, AZ

Mr. Galen Buterbaugh, Fish and Wildlife Service, Denver, CO

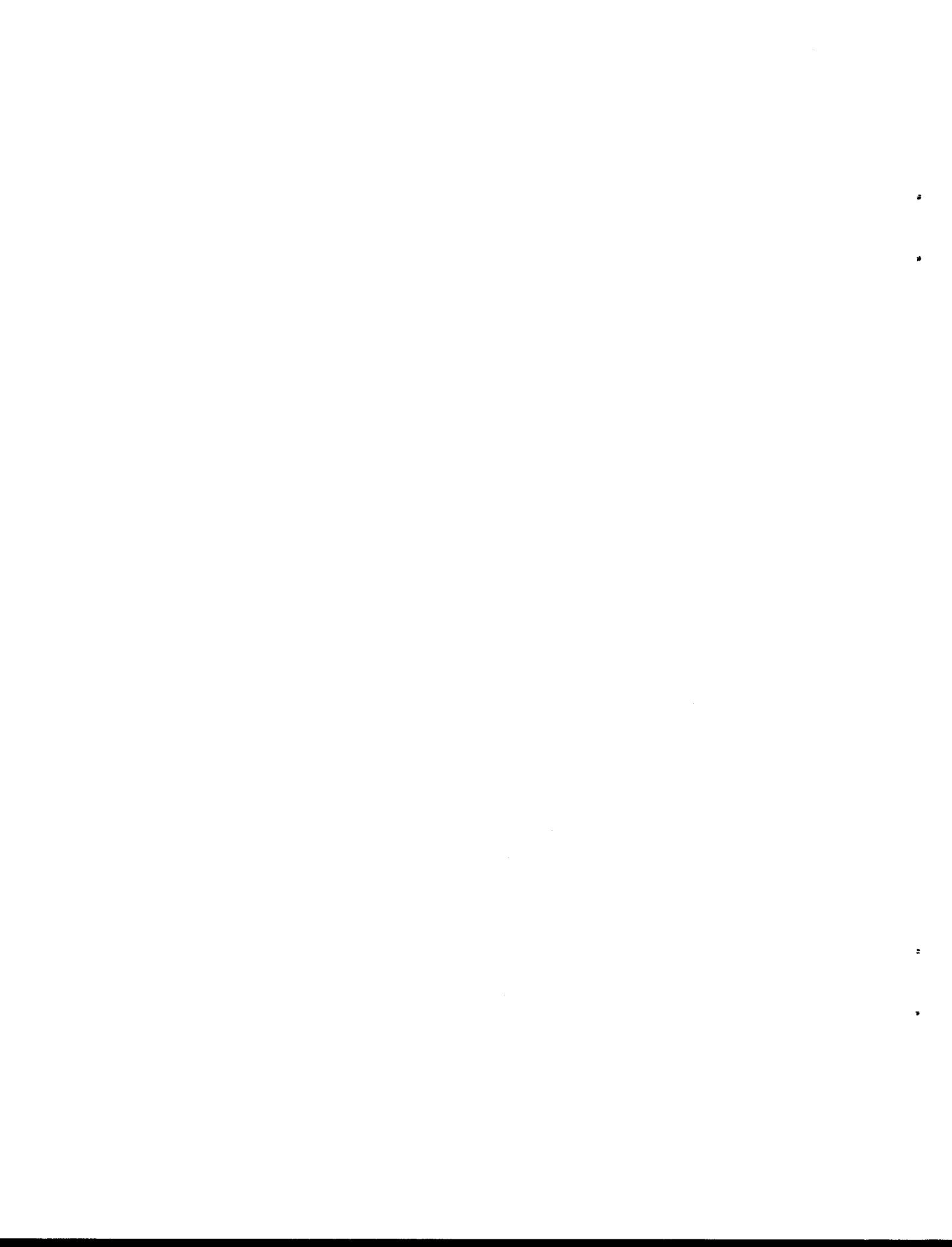
Executive Review Committee Members

Mr. Wayne Cook, Bureau of Reclamation, Salt Lake City, UT

Mr. Jack Davis, National Park Service, Grand Canyon, AZ

Ms. Patricia Port, Department of the Interior, San Francisco, CA

Mr. Lloyd Greiner, Western Area Power Administration, Salt Lake City, UT



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CREDA

COLORADO RIVER ENERGY DISTRIBUTORS ASSOCIATION

Mr. Clifford I. Barrett
January 3, 1989
Page 2

TELECOPIED AND MAILED

Mr. Clifford I. Barrett, Regional Director
Upper Colorado River Region
Bureau of Reclamation
P.O. Box 11568
Salt Lake City, Utah 84147

Re: Comments on Glen Canyon Environmental Studies (GCES) Phase II Implementation Program and Outline of GCES Phase III Activities, Draft dated November 28, 1988

Dear Mr. Barrett:

We have received a copy of the above mentioned draft. You have asked for comments on this draft by January 4, 1989. The CRDA Marketing Committee has previously submitted comments to you on a prior draft by letter of October 10, 1988. Since sending you those comments, we have had the opportunity to discuss our position with the Board of Directors. The Board has not had a chance to examine this draft in detail but has given the Marketing Committee policy guidance on major issues. We will discuss major issues first and then give you our comments on specific references within the draft.

MAJOR ISSUES

The single most important, indeed overriding, issue for this process has to be the specific directives of the June 16, 1988 memorandum of the Assistant Secretaries related to flows from Glen Canyon Dam. We had suggested at the constituent meeting in Las Vegas that the first two paragraphs of the second page of that memorandum be included verbatim in the redacted GCES Phase II document. Since those paragraphs contain key directives to the Bureau of Reclamation, the National Park Service and the Fish and Wildlife Service from their respective Assistant Secretaries, we are greatly disappointed that the critical language in those paragraphs of that document have been excluded from the latest draft for GCES Phase II.

The Assistant Secretaries specifically directed the cooperating agencies, including the Bureau of Reclamation, to maintain the status quo in completing the GCES studies. Their directive to you specifically stated:

The data required for these studies will be acquired during normal operation of Glen Canyon Dam. *** You should make every effort to eliminate any impact on normal power operations.

If flow conditions (either too high or too low) constrain the ability to observe the necessary test flows, the specific portion of the study that requires that flow will be postponed until proper flow conditions are possible. ***.

We find this language clear and unambiguous. The Bureau was directed to maintain the status quo while doing further studies. Indeed, changes from the status quo constituting artificial adjustments in the flow regimen may constitute "major federal action significantly affecting the human environment" and require initiation in the NEPA process before any such activity could be contemplated. Moreover, the December 6, 1982 directive from the Commissioner of Reclamation initiating the GCES program directed that:

Studies will be undertaken on the current operation of Glen Canyon Dam to see how the present flow patterns impact upon the total riverine environment in the Grand Canyon and how various low-flow periods affect rafting and the fisheries resources of the river. (Emphasis supplied.)

The memorandum further stated that you should analyze potential alternative operating criteria "consistent with CRSP requirements, to see if there are feasible alternatives to our present operating criteria that will address the many concerns raised in our operating environmental assessment. Should alternatives that meet the above criteria be identified, an environmental impact statement should be prepared. This would lead to a decision process to determine appropriate long-term operating criteria for Glen Canyon Powerplant."

Considering the plain language of these directives, we find it nothing short of incredible that members of your staff are creating documents that call for artificial scheduling of various levels of flows from Glen Canyon Dam for study purposes irrespective of these mandates. As you well know from our prior comments, we object to artificial manipulation of the flows from Glen Canyon Dam because of the impacts upon the power resources marketed to our members and others by the Western Area Power Administration, revenue from which goes to pay for these studies.

We wish to cooperate with the Bureau and the other agencies in the conduct of these studies and the preparation of the resulting report. We are already paying for these studies and we cannot afford to pay an economic penalty beyond that by virtue of loss of valuable resources from power generation at Glen Canyon Dam.

The solution to the problem created by the failure of this draft to recognize the directives of the Assistant Secretaries and the Commissioner seems obvious to us. The environmental team under the guidance of the Senior Scientist should lay out a series of studies aimed at being responsive to the directives of the June 16th memorandum of the Assistant Secretaries concerning these specific types of studies should be identified, with specific parameters including flows desired, duration, time of day, month or year if sensitive to that requirement, etc. The flow parameters should be analyzed by Reclamation concerning the time in which they are likely to occur under normal operations. The Western Area Power Administration should also examine them relative to power generation requirements. A schedule can then be constructed of when and where specific research and testing will be done. Having gotten this far, it is entirely possible that the Bureau and Western, working in conjunction with CREDA, could then agree upon a range of flexibility that, for purposes of one or more specific studies, would not "impact on normal power operations." We would be happy, once the environmental team has developed these requirements, to participate in such a dialogue. Indeed, we thought a meeting of that nature was going to be called.

Above all, this draft document needs to reflect the above scenario in order to comply with Departmental directives. We believe that the needs of the environmental study team can be accommodated with this process and we have been shown no evidence that such is not the case.

The only objection to conducting business in this format seems to be based on an unwritten requirement that these studies be completed within two years. Since the National Academy of Sciences in its initial review of GCES I clearly demonstrated that that is not the case, we do not understand the apparently self-imposed restriction for two years of study by the GCES people. There is a reference to some "verbal direction" that the studies only take two years. The memorandum of the Assistant Secretaries directed that the studies take at least one year but were totally silent on any ending point. Indeed, the concept of waiting for flows necessary for collection of data totally contradicts the concept of a short-term study period.

We do not believe that this process can move forward until this issue is confronted and resolved. We are ready, willing and able to meet with you to do so.

SPECIFIC COMMENTS

Page 2. We think it would be appropriate for the introduction to reflect that the Western Area Power Administration has become a cooperating agency in the GCES program.

Page 3. We have already discussed the deficiencies of the discussion related to the directive of the Assistant Secretaries. Page 4. We think the addition of Table 1 showing the make-up of the various entities for the study is an improvement. We think the membership in the technical integration group should be personnel other than those appointed to the environmental and economic study teams. It is very difficult to oversee and integrate one's own work.

The process for the environmental study team needs to be rewritten in line with our comments on determination of flows. We would also oppose the use of the Executive Review Committee to make decisions about flow regimen and resulting power impacts. From the directives from the Department, we believe those decisions should be left to the Bureau, Western and the power users.

We disagree that the economic study will follow a shorter decision process. No economic study can be completed until the environmental studies are completed. The scientists must decide what to study at what flows and then further decide which of those studies provide significant data related to impacts before ultimate economic analysis makes any sense. For instance, if studies at a particular flow level produce no significant impact, the study of economic impact of that flow level is not only irrelevant but a waste of time and money. Theoretical studies can be done now on various hypothetical flows, but a real economic analysis of any specific flow or flow regimen must follow identification of that flow or flow regimen. The total time it takes to do the economic studies may be less than the time it takes to do the environmental studies, but logic dictates that the economic studies must conclude after the environmental studies.

Page 5. The biggest single void in the discussion of process as well as study plan development is the total absence of any discussion of budget. While we believe that budget limitations

can be accommodated to some extent by spreading the studies out over a longer period of time than this draft contemplates, nevertheless, some finite rational process of budget estimating must be done for all three study groups as well as the Executive Review Committee.

We also believe the role of the Senior Scientist needs to be clarified. We do not see how an individual hired to oversee technical aspects of environmental work will have the expertise and background to integrate economic studies into the reports. Indeed, that is the function of the Technical Integration Group. We are also not in agreement with the outline of the focus for Assistant Secretaries focused on two areas and that those are the proper focus of the integrated study plan. We believe that the directive of the integrated study plan. That is not to say that resource identification should not be done, but the focus of the study plan has been defined by the Assistant Secretaries.

Page 7. We totally disagree with the first statement on Page 7 about actions contemplated by the Department of the Interior. The Department has not said it will make operational changes based on GCES II if it can rationalize that such are within the scope of the existing operating criteria. The 1982 directive and the directive of the Assistant Secretaries clearly spells out that, if alternatives are identified in this study, the next step is the initiation of a NEPA process. The purpose of GCES is to find out whether there are alternatives worth subjecting to the NEPA process. Those alternatives must then be tested to determine whether any proposed Departmental action constitutes a "major federal action significantly affecting the human environment." There are alternatives outside the GCES study which would have to be examined as part of that process and the Department's obligation to comply with NEPA is totally independent of its obligation to consult with the basin states under P.L.90-537.

At the bottom of Page 7 is a discussion of consultation activities with the Fish and Wildlife Service. At the Las Vegas meeting, we urged that the flow chart that was attached to the first draft of this document be revised to show how and when data acquired through this consultation activity could cross-fertilize into the GCES process. Ostensibly, information already acquired could be of considerable value to the environmental team. Since the draft acknowledges that there are conservation measures that must be addressed in this process, we think that the inclusion of a flow chart showing how information can beneficially be traded between the two processes would be a valuable addition to this document.

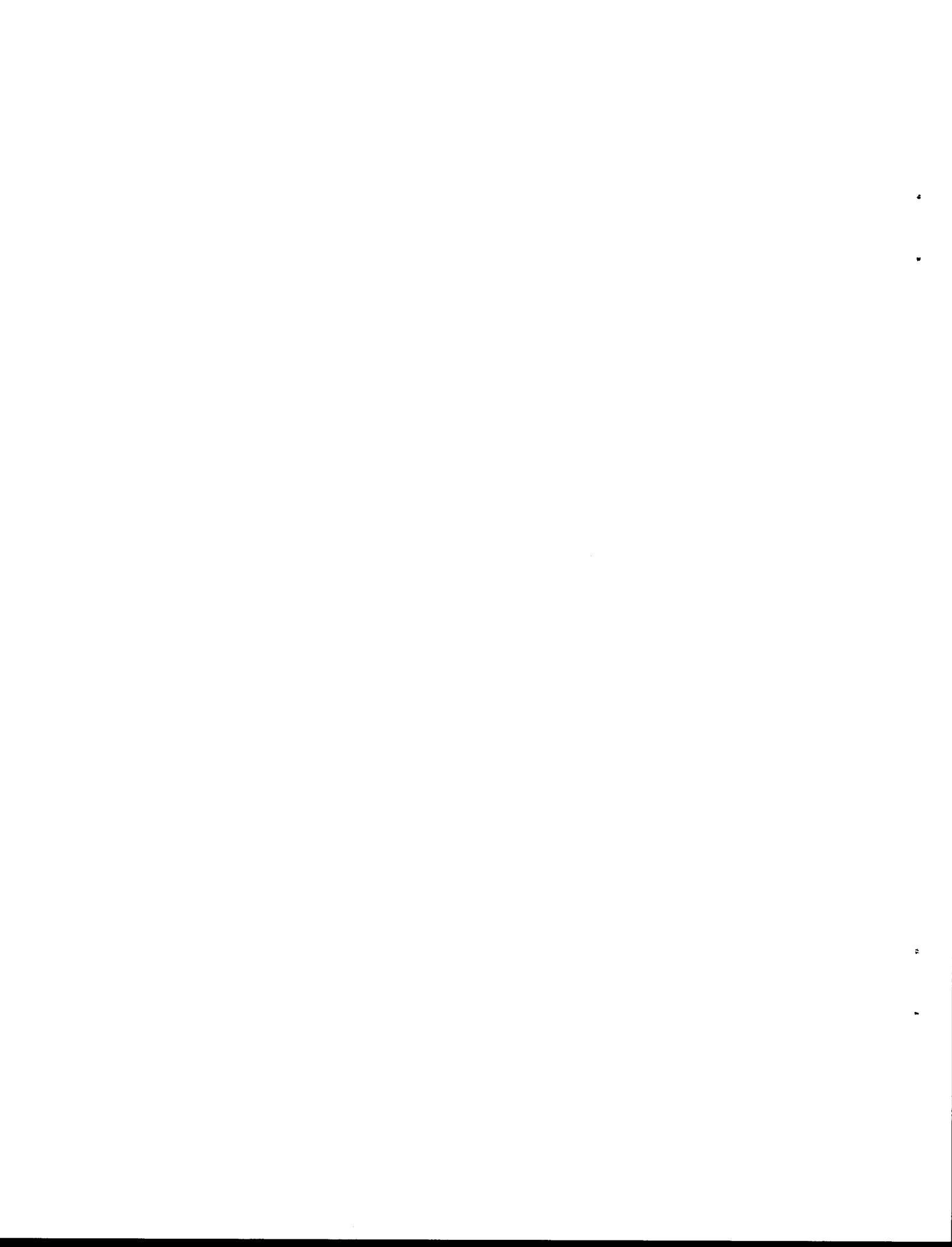
Page 8. Finally, we agree with the statement in the summary that there must be concurrence on the general process to be outlined in this document before initiation of field related studies. To expedite the matter, we would strongly recommend that the environmental team attempt to outline with much more specificity than it has in the December 5th memorandum to the Executive Review Committee the nature and extent of studies that need to be done on the topics identified in Table 1 attached to that memorandum. It seems to us that that is the threshold effort that must be undertaken in order to get on with the study process. In the meantime, we believe the second draft of the GCES Phase II document needs to be rewritten in line with our comments and we would hope that that process would begin as soon as possible.

Thank you for the opportunity to comment on this document.

Sincerely,

John Allum
John Allum,
Marketing Committee

/psr
cc: David L. Wegner, Grand Canyon Study Manager, Bureau of Reclamation
James W. Ziglar, Asst. Secretary of the Interior
William H. Clagett, Administrator, WAPA
Joe Hall, Deputy Commissioner, USBR
Dr. Wayne N. Marchant, Chief, Research & Laboratory Services Division, Bureau of Reclamation
Ed Hallenbeck, Regional Director, USBR
Lloyd Greiner, Area Manager, WAPA
Thomas A. Hine, Area Manager, WAPA
Steve Fausett, Acting Area Manager, WAPA
Gerald R. Zimmerman, Executive Director, Upper Colorado River Commission
Dennis Underwood, Executive Director, Colorado River Board of California
William Plummer, Director, Arizona Dept. of Water Resources
Jack L. Stonehocker, Colorado River Commission of Nevada
CREDA Board of Directors
CREDA Marketing Committee



COLORADO RIVER BOARD OF CALIFORNIA
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January 6, 1989

Clifford I. Barrett
Regional Director
Upper Colorado Regional Office
U.S. Bureau of Reclamation
P.O. Box 11568
Salt Lake City, Utah 84147

Dear Mr. Barrett:

We appreciate having the opportunity to review a revised draft of the Glen Canyon Environmental Studies, Phase II and III Program for Implementation. While we note many improvements in the draft document and the proposed program for implementation, we believe there remain several fundamental problems relative to clearly setting forth the purpose, objectives, scope, and direction of the program and the study approach and offer the following joint comments.

In preparing our comments, the draft program for implementation document was read and reviewed collectively with other recently prepared program documents and meeting notes, including the November 28, 1988 memorandum by the "Glen Canyon Environmental Studies Interim Technical Integration Team" on the subject "Glen Canyon Environmental Studies - Program Direction and Schedule", as well as a rereading of Interior's directives with respect to studies, the December 6, 1982 and June 16, 1988 memoranda.

Our comments herein are divided into overall conceptual comments on the studies program and approach and specific in-place comments on the draft text. We have shared our views on the studies program and approach discussed herein with Wayne N. Marchant during a December 28 meeting with him and other Basin states representatives held to discuss the management of the studies.

Studies Program and Approach

Based on our review of the aforementioned documents, we believe the studies program and scope are still not well defined in these documents due, in part, to the lack of specific and consistent language relative to the studies purpose and to varying and interchangeable references to such terms as objectives, goals, decisions, and focus with respect to the studies, study plans, and study teams.

The Glen Canyon Environmental Studies relate to and are an outgrowth of the Glen Canyon Dam power plant uprating program. The two principal objectives of the studies as set

Clifford I. Barrett
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forth in the December 6, 1982 memorandum are (1) to determine the impact that present flow patterns have on various specific downstream resources, with particular emphasis on low and fluctuating flow patterns as well as periodic high flow periods, and (2) in conjunction with the studies, to identify and analyze potential feasible alternative operating criteria for Glen Canyon Dam power plant that are consistent with the Colorado River Storage Project (CRSP) requirements. This, in turn, "would lead to a decision process to determine appropriate long-term operating criteria for Glen Canyon Powerplant," which has now been identified as Phase III of the program for implementation. It is important to note that the reference to operating criteria is only to the power plant. The identification and analysis of feasible alternative operating criteria for Glen Canyon Dam power plant would be accomplished with full and appropriate consideration of all river uses. Neither of these objectives have been fully met to date. The June 16, 1988 Interior memorandum acknowledges the deficiencies of the work completed to date and identifies additional required studies and analyses (Phase II of the studies) before any action can be considered by the Department.

The program for implementation document and all other program documents must clearly and consistently state the program purpose and objectives which should be confined to those set forth in Interior's December 6, 1982 and June 16, 1988 memoranda. This is particularly important in this case because of the diverse and conflicting goals of the various parties interested in the studies and the apparent forces which are attempting to expand the scope of the studies beyond that for which the studies were intended. The Glen Canyon Environmental Studies are not, nor should they be, implied to be comprehensive umbrella studies for resolving or addressing other issues. Those issues, if they have merit, should be appropriately addressed separately so as not to compound an already difficult and complex task.

For the most part, the two objectives must be accomplished in a progressive sequence and cannot occur simultaneously. The development and analysis of potential feasible operating criteria ("operational options" as referred to in the June 16, 1988 memorandum) for the power plant must await the impact determinations that are to result from studies on "the effects of both low and fluctuating flows on endangered fish species, the trout fishery and beach aggradation and degradation." The impact determinations will

define the level of downstream resources that exist at various flow levels and patterns and will be the basic input for identifying feasible alternative operating criteria for the Glen Canyon Dam power plant. The impression gained from the draft program for implementation document is that the downstream resources studies and the evaluation of operational options are separate and independent activities that are to be combined by a Technical Integration Group. If this is the case, it is not clear as to the relationship of these activities and how they will be integrated. In any event, further work is needed on setting forth the study approach. In addition, the study plans, as represented in the draft document and the Interim Technical Integration Team November 18, 1988 memorandum, should be reshaped to be consistent with the studies objectives and scope outlined in the December 6, 1982 and June 16, 1988 Interior directives.

The principal focus of Phase II and all efforts at this time should be on the additional impact studies to determine the levels of downstream resources that exist at various flow levels and patterns. While they should be accomplished in a timely manner and consistent with the study parameters set forth in the June 16, 1988 memorandum, the duration of the impact studies should be that which is required to produce technically sound results. The identification and analysis of potential feasible alternative operating criteria, consistent with CRSP requirements, would follow and would be based on the findings of these studies. The draft program for implementation implies a much broader scope than that necessary to address the studies purpose and objectives. The document should be modified to ensure that it conveys the proper program focus.

The role and activities of the Technical Integration Group and the Executive Review Committee also need to be better defined as they relate to accomplishing the studies objectives and any follow-up activities. The December 6, 1982 memorandum stated that appropriate federal and non-federal agencies should be requested to participate in the studies. In this regard, there appears to be a lack of involvement of study personnel experienced in river and power plant operations and "The Law of the River". It is recommended that such personnel be assigned to the studies as principal investigators. It is also recommended that the Basin states be represented on the Executive Review Committee. This will help provide for more effective involvement of the Basin states with respect to both of the studies objectives and any subsequent decision process.

We believe the proposed program approach as it has evolved is overly complex and cumbersome and that efforts should be undertaken to use a more direct and simpler approach. While the greater program management being employed by the Bureau of Reclamation will substantially aid the program, we strongly recommend that a reassessment of the program direction and approach, as represented in the various program documents completed to date, be made before any further work is carried out with respect to the studies and that greater control be exerted in maintaining the proper program focus.

In keeping with maintaining the proper program focus, considerations for undertaking any of the recommendations of the National Academy of Sciences or of others in the Phase II studies should be closely scrutinized to ensure that they are required to accomplish the studies' objectives. To effectuate more centralized and effective program management, it is suggested that the role of the National Academy of Sciences be confined to the review of methodology relative to the impact studies and that the Bureau of Reclamation appropriately assume, in its capacities as river manager, the functions of the senior scientist.

An assessment should also be made at this time as to the effect the recently filed lawsuit relative to the Final Post-1989 General Power Marketing and Allocation Criteria for CRSP power plants will have on the studies since it deals, in part, with the same subject matter of the studies.

As the entity responsible for carrying out the Secretary of the Interior's river management responsibilities, it is essential that the Bureau maintain a highly visible leadership posture in this and other programs involving river uses and operations, especially since conflicts between competing uses are expected to intensify as greater demands are placed on the river system. Equally important to the orderly resolution of river issues is the need for the Bureau to maintain adequate in-house expertise to address water management issues in fulfilling the Secretary's river management responsibilities.

Specific Comments of the Draft Text

In addition to the suggested changes and recommendations that are contained in the preceding comments, the following specific in-place comments are offered to aid in modifying the draft program for implementation document.

Clifford I. Barrett
January 6, 1989
Page 5

Clifford I. Barrett
January 6, 1989
Page 6

Page 2. Introduction Consideration should be given to deleting the present text and substituting in its place the Historic Background write up and deleting the side heading "Historic Background".

Page 2. Historic Background In discussing the "Historic Background", frequent reference is made to Phase I of the Glen Canyon Environmental Studies as though the study was originally divided into two phases. We would suggest that the work leading to the January 1988 final technical report be referred to as the original Glen Canyon Environmental studies rather than Phase I, since the Phase II effort is primarily scoped to fill in several critical segments of information that were not completed in the original studies.

Page 3. 1st Full Paragraph Replace Glen Canyon Dam with Glen Canyon Dam power plant.

Page 3. 2nd Full Paragraph Replace the phrase after (technical studies) with "...there was limited opportunity to study the effects of low and fluctuating flows because of high runoff conditions which generally precluded those operating regimes during the study period."

Page 3. 2nd Full Paragraph Delete the second sentence.

Page 3. 3rd Paragraph Replace Glen Canyon Dam with Glen Canyon Dam power plant.

Page 4. 2nd Paragraph Replace Glen Canyon Dam with Glen Canyon Dam power plant.

Page 4. 3rd Paragraph The phrase "development of contingency plans" should be expanded so the reader understands what is meant.

Page 4. last Paragraph In the first line delete the word "decision". The Economic Study Team process should be rewritten consistent with comments on the studies program and approach.

Page 5. First Item 1 Replace "studies" with "detailed analyses of operational options" and after "initiated" add "based on results of downstream resources impact studies," and delete "the process to use, and". Add an Item 2 to read "Agreement on the process to use, and", and change the existing Item 2 to Item 3.

Page 5. last paragraph The Integrated Study Plan description should be rewritten based on studies program and approach comments.

Page 6. 4th paragraph Rewrite the first sentence to read "After the completion of the GCES Phase II efforts, and review of the additional information collected and the constituent comments, the ERC will draft its report and prepare recommendations as appropriate with regard to the long-term operating criteria for Glen Canyon Dam power plant" in keeping with the December 6, 1982 directive. Delete items A1, A2, and A3.

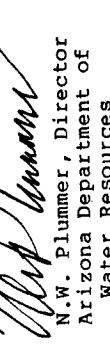
Page 7. first paragraph Replace Glen Canyon Dam with Glen Canyon Dam power plant.

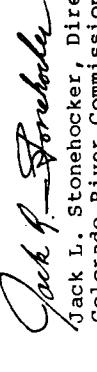
Page 7. 3rd Paragraph Second sentence... Replace the word "proposed" with "recommended" and insert thereafter the phrase "power plant operational" and replace the word "Criteria" with "Criteria for Long-Range Coordinated Operation of Colorado River Reservoirs (Operating Criteria).

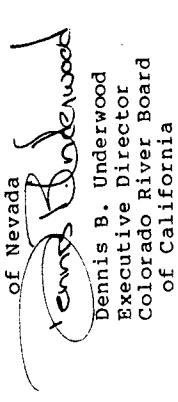
Page 7. 4th paragraph Before the words "operational changes" add "recommended power plant" and replace "operating criteria" with "Operating Criteria". Delete the last sentence.

Page 7. 5th paragraph Delete this paragraph.

Page 7. 6th paragraph Replace criteria in both instances with "Operating Criteria". Sincerely


N.W. Plummer, Director
Arizona Department of Water Resources


Jack L. Stonehocker
Colorado River Commission
of Nevada


Dennis B. Underwood
Executive Director
Colorado River Board
of California

Clifford I. Barrett
January 6, 1989
Page 7

cc: John Allum, Director
Marketing Committee
Colorado River Energy Distributors Association

D. Larry Anderson, Director
Utah Division of Water Resources

Honorable C. Dale Duvall
Commissioner of Reclamation

Joe Falbo, President
Colorado River Energy Distributors Association

Gordon W. Fassett
Wyoming State Engineer

Joe D. Hall
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Edward M. Hallenbeck
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Lower Colorado Region
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Wayne N. Marchant, Chief
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Colorado River Conservation Board

Stephen E. Reynolds
New Mexico State Engineer

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Upper Colorado Region
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Gerald R. Zimmerman
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Upper Colorado River Commission

United States Department of the Interior

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IN REPLY REFER TO
H3815(GRCA-8213)

JAN 03 1989

✓/C

Memorandum

To: Clifford I. Barrett, Regional Director, Bureau of Reclamation,
Upper Colorado Regional Office, Salt Lake City

From: Acting Superintendent, Grand Canyon National Park

Subject: Comments on GCES Phase II and III Program for Implementation

Section III B Page 4.

In addition to impacts on power users, some of the technical studies, particularly those which involve controlled flows sustained over lengthy periods, for example 3000 cu. ft. per sec. over three days can be construed as Federal action significantly affecting the human environment. Could you explain why NEPA review should not be necessary? You imply that WAPA will make a unilateral decision without such review with respect to economic impacts on the power users. We feel that any technical studies potentially affecting the natural and cultural resources of Grand Canyon Nation Park and the human environment will require NEPA review at least at the level of the E.A.

You mention that: "If the [economic?] impacts [on the power users] are to great, contingency plans will be effected." Are such plans currently available for review or are these to be developed when the time comes?

Section III C, Page 5, Paragraph 5.

How will the National Academy of Science function in Phases II and III? Will they be "on call" when and if they are required, or will there be regularly scheduled progress reports delivered to and meetings with the NAS?

Section III C, Page 5, Last Paragraph.

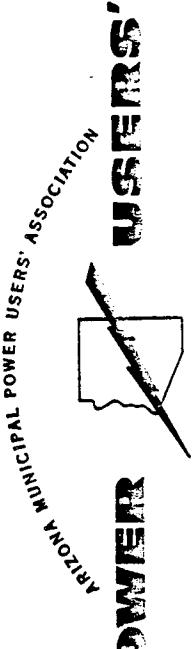
Mention is made that the studies will be completed in a timely manner. What does this mean? The memorandum from the Assistant Secretaries dated June 15, 1988 is quite vague as to what constitutes a "timely manner". Two years has been mentioned several times but we have never seen this in writing. Nor have we seen any rationale for the establishment of this time period. On the surface, it seems rather arbitrary and is in direct conflict with some of the recommendations published by the NAS. We feel the final document should specifically state a time frame for completion of the Phase II and III studies, the rationale as to why this length of time was selected, and the interrelation with the NAS recommendations.

Thank you for the opportunity to comment. If you have any questions, please refer them to Peter Rowlands, Chief of Resources Management and Planning (602) 638 - 7751.

Section III A, Page 4, Paragraph 1.

We feel you should be more specific, i.e., give some rationale, as to why input is required from the various groups listed. The specific roles of the cooperating agencies need to be defined or possibly redefined. In addition, each cooperating agency should be given the opportunity to state, or in some cases, restate their objectives as participants in GCES. The failure to clarify objectives related to the GCES studies and the tying of what objectives were stated to the various agencies' missions (and not specifically to the GCES process) was major criticism of the NAS. For example, what specifically is the role (roles?) of WAPA, CREDA, and others as a participant in GCES? How do they define their objective/s and values, not in terms of agency mission, but what they expect to achieve for themselves and/or their constituents at the termination of GCES Phases II and III. The National Park Service is prepared to do this.

- Bruce Whaling
John Reed
Acting Superintendent



Mr. David L. Wegner
January 4, 1989
page 2

2712 NORTH SEVENTH ST. • PHOENIX, ARIZONA 85006-1003

MICHAEL A. CURTIS
GCES Program Manager
Bureau of Reclamation
Post Office Box 11568
Salt Lake City, Utah 84147

January 4, 1989

Mr. David L. Wegner
GCES Program Manager
Bureau of Reclamation
Post Office Box 11568
Salt Lake City, Utah 84147

Dear Mr. Wegner:

On November 30, 1988, the Bureau of Reclamation distributed copies of the GCES, Phase 2 and Phase 3 Program for Implementation, to the various constituent groups for comment. Also, on November 28, 1988 there was a report to You by the GCEIS Interim Technical Integration Team. The Arizona Municipal Power Users' Association supports and subscribes to the comments being submitted separately by the Colorado River Energy Distributors' Association, but would like to make some notations on overlooked areas.

In the November 28, 1988 report we noticed the Technical Integration Team continues to exclude representatives from the Western Area Power Administration. The commitment and agreement that we understood had been made between the Department of Interior, the Bureau of Reclamation and Western as early as the Spring of 1988 was to include Western (recognizing Western had environmental and other expertise in its organization). It is apparent to us Western continues to be excluded from equal participation in all phases of the GCEIS effort.

AMPUA is concerned about the lack of budget information and a study plan which includes development of a budget for Phase 2 and Phase 3 activities.

The Arizona Municipal Power Users' Association whose membership delivers almost one-half the electricity in the State of Arizona appreciates the opportunity to comment on the Program. Please keep us informed and on your mailing list for notices concerning further developments in the GCEIS.

Very truly yours,

ARIZONA MUNICIPAL POWER USERS'
ASSOCIATION

By *Michael Curtis*
Executive Secretary

cc: Membership

4/10

Also, I see no time frame for the development of these plans. If they are to be as presented, it will take time. I am not suggesting years; however, to do it right, it will take time, and I feel a schedule should have been included in your narrative. If this process is rushed, and all of the problems are not addressed, they will continue.

2 January 1969
105 Buckboard Trail
Flagstaff, Arizona 86004

One general question, I am interested in knowing what will happen if the impacts associated with low and fluctuating flows are not able to be addressed again. We both know that money runs the flow releases from Glen Canyon dam. I also think we both know that no matter how competent and sincere people are when scheduling flow releases, to coincide with research to be conducted below the dam, things happen and the water will come, if the demand is made. What if this happens and the proposed studies are again stymied by the lack of the proper flows?

I will attempt to make the meetings on 9 and 10 of January, but would still like to be included in the process, even if I cannot make the meetings.

Sincerely,
C. O. Minckley
C. O. Minckley

Here are a few comments on the request for review of the GCES Phase II implementation program.

Under your historic background section, the Assistant Secretaries are quoted as specifically directing that "... effects of both low and fluctuating flows on endangered fish species, the trout fishery and ..." be one of two primary efforts. On the next page, under section III GCES Phase II Program, the environmental study team will be responsible for study plans "... associated with trout, endangered species, and beach ..." Once again, trout are put ahead of endangered species. Yes, I realize this could be a typo, or arguing semantics; however, the trout are not native and they are not endangered. The humpback chub is endangered, it has priority over trout now, and always will. The trout have to be addressed because of their economic importance in the Lees Ferry section. They are becoming more economically important in the Grand Canyon, but they are not the priority, as stated by the Assistant Secretaries. I really feel that the fishing public is being addressed more in this manner than the endangered species. Perhaps an analogy between power generation and money and rainbow trout and money can be made? Why the National Park Service would spend thousands of dollars on burros, and then even address an aquatic burro, is beyond me. I feel endangered species should be a specific priority, and not included in a group category.

Under the Process to Completion, # 3, it is stated that "If the impacts are determined to be too great, contingency plans will be effected." I think it would be appropriate to present some of the contingency plans in you narrative.

I also think it is very important that constituent groups, as you call them, be included in all phases of this proposed project. More importantly, their comments should be considered by the appropriate senior scientist, executive committee etc., for their consideration prior to being distilled down to government jargon. Invariably when this happens, much is lost in the translation. I think the inclusion of such groups and more information releases so everyone will be informed what is going on will improve the process.



United States Department of the Interior

GEOLOGICAL SURVEY

Water Resources Division
300 W. Congress Street, FB-44
Tucson, Arizona 85701-1393

Memorandum

To: Director, Upper Colorado Region, Bureau of Reclamation, Salt Lake City, Utah

Subject: December 27, 1989

4/D

From: Julia B. Graf, U.S. Geological Survey, W.R.D., Tucson, Arizona
Water Resources Division (GCES) — review of "Glen Canyon Environmental Studies Phase II and III Program for Implementation", draft 2, November 28, 1988.

I have studied the subject document and have some specific and general comments about its content. Most of the general comments are ones that I have brought up or addressed during meetings of the GCES study teams over the past six months or so.

The distribution list attached to the document seems small for a document of this importance. It should contain the following, at least, in addition to those listed: Harvey Johnson, U.S. Geological Survey, Water Resources Division, Mail Stop 415, 12201 Sunrise Valley Drive, Reston, Virginia, 22092; myself, at the address at the top of the page; other members of the current Integration Team not listed; Senator DeConcini's office; the appropriate individual in the Navajo Nation, and Hualapai and Havasupai tribes; and Dick Marzolf, chairman of the National Academy of Sciences oversight committee. It seems misleading to include Michael Welsh in the category of "interested public" when he is under contract with the Bureau for work on the GCES.

Page 2, paragraph 4: It would be more correct to say "Commissioner, Department of the Interior, Bureau of Reclamation".

Page 2, paragraph 5: (also page 3 in two places) "Sic" is most commonly used to indicate that something is being quoted exactly, even though it contains an error. Although it isn't wrong to use it when there is no error, it tends to imply that there is an error, and this may be misleading.

Page 3, first full paragraph: I suggest beginning paragraph with "The original GCES, now called Phase I, focused ...". Substitute "define" for "quantify" in the second line. Substitute "GCES Final Report" for "GCES Technical Report" in fourth line.

Page 3, paragraph 2: The paragraph does not convey to me the real value of data collected to date and the reasons for further study. Also, it suggests that only the lack of knowledge of the relation of low and fluctuating flows to resources prevent us from being able to recommend changes in operations criteria. The GCES Final Report writing team, the NAS committee, and a substantial part of the GCES Phase II teams believe that significant

questions relating to the impact of floods on all resources (power, water, environmental, and recreational) still remain. Operational changes which may have been taken since the 1983 flood to reduce the risk of flooding have not been evaluated by the teams or the wider scientific community. Floods will certainly occur in the future, the questions are: "with what frequency and magnitude will they occur?", and "what will be the impacts of floods in the long term?". These questions have not been adequately answered. I suggest that the paragraph be reworded to something like the following:

"Although GCES were able to investigate the impacts of some operations on environmental and recreational resources (especially floods and steady flows near the upper end of the powerplant capacity), the studies were not able to study other operations (especially low and fluctuating flows typical of normal powerplant operation). Also, because the studies took place in a period which was unlike the previous almost twenty years of operation and during which flows were much higher and steadier than previously experienced under regulated flow, the extension of GCES findings into the future is very uncertain. The GCES provided much useful information on the relation of resources to operations but also identified potential conflicting requirements of important resources, such as that between the humpback chub and beaches. The studies showed that the relation between environmental and recreational resources and operations is complex, depends on antecedent conditions in many cases, and involves interactions and indirect effects which are poorly understood. For these reasons, collection of information about response of resources to flows of sufficient detail and reliability to form the basis for long-term operations criteria was not possible within the scope and time limits of GCES Phase I."

Page 3, paragraph 4: Delete "several critical segments of information were lacking and therefore", because it suggests that there are discrete gaps which if filled in would allow us to answer all questions. If the paragraph suggested above is used, it should explain this better.

Page 3, paragraph 3: Add after "A Technical Integration Group will" "ensure that the scope of the studies is adequate to accomplish the goals and that the interactions and interrelations among components of the environmental and economics studies are fully considered in study plans and integration of results. The Integration Group will also oversee" ...

Page 4, Section B.2-4: general comments: It is not said in these paragraphs how Western's assessment of the impact of special study flows on its customers will be done. The economic part of phase II has the development of a method for this as its goal — how will Western evaluate this before completion of the economic study in a way that will be acceptable to all parties? The decision to proceed with studies must be based not only on costs to power customers but on impact to recreation and water users and on benefits, such as the value of the knowledge gained in the studies. How will these other factors be considered in making a decision as to whether to have special study flows? The question as to who will make the decision to proceed or not to proceed is not directly answered in section B.4. In my opinion, this decision should be made by the Technical Integration Group in

consultation with its senior science advisors. The Technical Integration Group will have representation from all affected parties. Whichever group bears the ultimate responsibility, the methods used to make this decision must be clearly defined and accepted by all, before any decision is made.

Page 4, section B.2.: Line 1: change "the study" to "specific"; add after requirements "which differ from normal operation". Lines 2 and 3: Delete "which will determine the impact of the technical studies on the power user"; Line 3, change "Western" to "and".

Page 4, section B.3.: Delete "the" before "technical studies", and add after that phrase "which require specific flows other than normal operation".

Page 4, section B.4.: Add after "technical studies" the clause "that require special flows"; change "identified impacts" to "problems"; change "Executive Review Committee" to "Technical Integration Group".

Page 5, Economic studies: Before the method can be agreed upon, the economic and environmental teams need to work together to define the aspects of flow that are that should be considered and the level of detail of estimation of economic impacts that is meaningful to the environmental and recreational resources. Integration of these two parts of the study must be on a very basic level and should be initiated immediately. It was very clear to me as I sat in on the last meeting of the Economics team that a great deal of time and money could be spent unnecessarily if these two groups don't work together at a early stage.

It was my understanding that points 1 and 2 should be:

- 1) to come to agreement on the specific model and model parameters to be used to assess economic impacts, and
- 2) to test the method on a few hypothetical but feasible alternative operations.

Points 1 and 2 on page 5 are vague enough that I can't tell whether they are the same as these or not.

Page 5, Study Plan Development - general comments: This section gives more responsibility to the "senior scientist" than was intended by the NAS committee or is desirable for the project. In my opinion, the Integration Team should have primary responsibility for most scientific aspects of project work and the senior scientist should be responsible for seeing that the team gets advice and direction from senior scientists who can provide a depth and breadth of experience and knowledge not obtainable otherwise. Also, if study plans are integrated as they should be from the start, there will be no need to develop separate environmental and economic study plans. Any separate plans developed should only be used as a means of communicating between teams. In my opinion, only a fully integrated study plan should be reviewed by constituent groups.

Page 5, last paragraph of section B: After "The Technical Integration Group", add "communicate with both the environmental and economics teams to ensure that interactions among components of each discipline and between the two disciplines are considered. The group".

Section C, paragraph 1: After "Department" in line 3, add "and the National Academy of Science Committee". Line 6: change "environmental studies" to "planning stages"; delete "separate" on line 7 and add after "group", "outside of the concerned agencies".

Section C, paragraph 2: change "obtained" to "sought"; lines 2 and 3 delete "the environmental work and the integration of the economics studies in the overall" and substitute "GCES Phase II work and the preparation of"; line 5, change "up the" to "up a"; line 7, change "a technical" to "an advisory and".

Section C, paragraph 3: Line 3, delete "technical and scientific"; after "adequacy", add "of the plans to address study goals"; lines 4 and 5, delete "the senior scientist and".

Section C, paragraph 4: I'm not at all sure what the last sentence means. This should be clarified.

Section C, paragraph 5: I suggest the focus areas should be identified as:

- 1) identification of components of the environmental and economic systems which should be monitored and/or studied in any continued program
- 2) development of a program of monitoring which will help to determine the response of resources to changes in operations in the short and long term.
- 3) continued evaluation of existing literature and data
- 4) special studies to address areas in which knowledge is lacking and to investigate the interactions and interrelations among components of the system

Page 6, Section IV.A. - general comments: The Executive Review Committee report is extremely important, because it is here that the scientific information is used to make management decisions. Some of the recommendations of the first ERC report are not supported by the scientific evidence - the recommendation to raise low-flow limit to 800 cfs and the failure to consider floods in further work are among the issues that concern me from a scientific standpoint. The definition of management goals for further work is vague, and that poor definition makes the translation of those goals into objectives of the scientific program difficult if not impossible. The report does not consider the recommendations of the NAS committee with regard to the scope of further studies. For me, the biggest disappointment of the ERC report and the Department's letter is the failure of either to recognize the realities that were stated so well in the NAS report — that "management of resources is feasible but it demands ecological understanding. Such understanding in this case will require sustained research ...", that "to achieve this level of understanding, managers must make new commitments to involve scientists in the development of management strategies" (both NAS report, p. 3), and that "a willingness

to change flow pattern in response to resource changes is the key to successful management of the system" (NAS report, p. 83).

If scientific information is not used fully and correctly in the development of management goals and in the decision-making process, then all the time, effort, and money spent on getting the best possible study plan and the best data and analyses will be wasted. For the proper use of scientific information to take place, the ERC should work with the Integration Team to develop specific management goals and to translate these into scientific objectives, and the report should be prepared by the ERC and the Integration Team working together. If the ERC does the report on its own, then full review and approval by the Integration Team should be required before the report goes to constituents.

It seems to me that points 2 and 3 should be reversed. Also, "reconsideration" may be a better word than "refinement" in point 2.

Page 7, section IV B, second paragraph: Delete "low-level"; add to end of sentence "which the integration team has determined to be adequate."

Page 7, section IV B, paragraph 3 - general comments - There appears to be much disagreement on what the legal restrictions on operations are and what can be done without having to comply with NEPA regulations. It seems to me that in any "yes" case, impacts will be implied and NEPA process should be followed. It is not clear to me why it is not being followed in GCES Phase II studies. The reasoning for not following the NEPA process should be clearly presented.

Page 7, paragraph 3, last sentence: End with "implemented" and begin new sentence "In this case, the GCES program"; delete "continual"; add to end of sentence "required to determine if predicted environmental and economic responses occur and to provide the basis for further adjustment of operations if response are sufficiently unfavorable."

Page 7, paragraph 5: Sentence 1, change "could" to "should"; change "but not" to "but should not"; delete "alternative flow regimes" (if this is in some way different from operational changes, then explain better what is meant); before "and, no action", add "installation of a multiple-outlet structure for temperature regulation, exploration of the feasibility of superconductive materials to store electricity in the foreseeable future".

Page 7, last paragraph in section B: It seems to me that the states' selections for representation in decisions about the Annual Operating Plan could hardly be unbiased representatives of all valid state interests. To follow through with the process as outlined in this section is to invite charges of bias and non-representation by affected parties.

Page 8, top of page: This sentence is just not true. As a member of both the environmental and integration teams and an occasional observer of economic team activities, I have never been given or even been verbally informed as to what the conservation measures are. The team has been lead to believe that the conservation measures are an entirely separate item, not

subject to review by the teams or integration into the study plan. Having a field team on the same raft trip as GCES scientists does not justify the statement that "the Conservation Measures are being integrated into the GCES Phase II study plans".

Page 9, table 1: In order to make any kind of progress in the short term, the individuals should be identified and should not change from meeting to meeting. Members should agree that all concerned parties are represented, and once that has been agreed to, the membership of the committee should not change. Also, members should be qualified in the areas of concern to the team. Managers and policy makers are an important part of the process - this should be at the level of the ERC. "Observers" should be allowed, but they should be identified as such.

Julia B. Graf
Julia B. Graf
Hydrologist

cc: District Chief, Tucson, Arizona
Harvey Johnson, Reston, Virginia
Wayne Marchant, Bureau of Reclamation, Denver, Colorado
Dave Wegner, Bureau of Reclamation, Salt Lake City

ROSE MCFORD, Governor
Commissioners:
LARRY D. ADAMS, BURNT CREEK, Chairman
FRANCES W. WERNER, Tucson
THOMAS G. WOODS, JR., Phoenix
PHILLIP W. ASHCROFT, Eagle
GORDON K. WHITING, Kondy's

Director:
TEMPLE A. REYNOLDS

Deputy Director:
DUANE L. SHROUFE

ARIZONA GAME & FISH DEPARTMENT

2222 Marigold Road Phoenix, Arizona 85023 602-3000

January 4, 1989

Mr. Clifford Barrett
Regional Director
Bureau of Reclamation
Upper Colorado Regional Office
Salt Lake City, UT 84147

Dear Mr. Barrett:

Enclosed are the Department's comments on the second draft of the Glen Canyon Environmental Studies Phase II and III Program for Implementation dated November 28, 1988. References to page and paragraph of the Implementation Plan are made for the comments in order to facilitate their incorporation into the final version.

You will note from our comments that we feel several segments of the Program for Implementation should be considered in greater depth. The document should offer a more thorough explanation of the events that led up to the initiation of the GCES, the reasons for accomplishments and shortcomings of GCES Phase I, the reasons for Phase I shortcomings, i.e. why are Phase II and III necessary, and how the Program for Implementation attempts to ensure that these shortcomings will not be revisited. Also, we note that the distribution list for this document does not contain certain individuals and organizations that expressed interest in GCES Phase I, including members of the State Legislature and Congress.

We welcome the opportunity to review the GCES Implementation Plan. It is an important step in our cooperative effort to collect the information necessary for the objective evaluation of alternative operating criteria for Glen Canyon Dam.

Sincerely,



Lee E. Perry
Acting Director

Arizona Game and Fish Department Comments on
Glen Canyon Environmental Studies Phase II
Draft Implementation Plan dated
November 28, 1988

Page 1
Para 1
The National Park Service and Fish and Wildlife Service are listed as cooperators in the GCES program. Yet, to the uninformed it would appear that this document (plan) was formulated by the Bureau of Reclamation without input from the other Department of Interior (DOI) agencies. It would be advantageous to clarify for all constituents what roles the three DOI agencies have in the formulation and implementation of Glen Canyon Environmental Studies (GCES).

Page 2
Para 4
We are under the impression that the Environmental Assessment of the uprating and rewinding of the generators at Glen Canyon Dam was conducted under the provisions of the National Environmental Policy Act (NEPA). If GCES is indeed a "...part of the Environmental Assessment...", why is the GCES program not being conducted under NEPA?

Page 2
Para 6
It should be noted that the second objective of GCES Phase I, the "...analysis of potential alternative operating criteria..." for Glen Canyon Dam, was not accomplished. Rather, as the National Academy of Sciences report noted, the analysis of dam operations was largely a justification for the status quo, which confused Bureau of Reclamation agency requirements with legal mandates under the "Law of the River".

Page 3
Para 1
A brief summary of GCES Phase I findings would be beneficial to the readers of this plan. It should also be indicated that Phase I Final Report included a review of current operating criteria and the actual operation of the dam with respect to releases.

Page 3
Para 2
Some impacts of low and fluctuating flows were indeed addressed. For example, AGFD field studies during October 1984 showed that rapid reduction of outflow from Glen Canyon Dam (26,000 cfs to 5,000 cfs) resulted in the stranding, desiccation, and

LEP:DMK
Enclosure

cc: Jim Devos, Research Branch Supervisor
Sam Spiller, U.S. Fish and Wildlife Service, Phoenix

Page 3 Para 2 subsequent mortality of numerous trout. Studies done by investigators at Northern Arizona University indicated that large-scale fluctuations in flow increase the amount of algae and invertebrates dislodged and carried downstream by the river and that these same fluctuations can increase mortality in algae that remain in place through dewatering and desiccation. There are other findings which could be cited.

The readership should be advised as to why low and fluctuating flows could not be evaluated adequately. Furthermore, it should be indicated that the Phase I Final Report did include an analysis of five operations (release) scenarios and their predicted impacts on environmental and recreational resources. An evaluation of economic impacts was not included, because it was not a part of the original directive for the GCES.

We are unaware of any actual "...evaluation of alternative operating criteria..." in the GCES Phase I process. If this was indeed accomplished, the implementation plan should indicate which alternatives were considered.

3 It should be noted in the Plan that the Executive Review Committee (ERC) Report contains dissenting legal opinions on priorities for operation of Glen Canyon Dam and that these opinions have been sent to the Solicitor General's office in Washington, D.C. for resolution. This is very important information for all constituents and interested parties.

3 The composition of the ERC should be given so that all readers (constituents) are aware of which agencies were (are) involved in making recommendations for dam operations to the Secretary of Interior.

It is our understanding that the ERC and DOI reviews included the National Academy of Sciences review committee report. The purpose of this committee, its role in GCES Phase I, and a summary of its findings and recommendations would be most beneficial to the readers of this plan. At the very least, a reference to the document containing the Academy committee's findings should be included.

Page 3 Para 4 The reference to "...the time available for additional study effort," in the June 16, 1988 memorandum from the Assistant Secretaries of Interior is very important. The readers should be advised that the memorandum also directed that "The duration of the studies will be for a minimum of one year, with the end point to be determined by flow levels and the technical effort required. The technical study design group will determine the exact time necessary....".

4 2 How is the composition of the Environmental Study Team, the Economic Study Team, and the Technical Integration Group being determined? It is obvious that with the inclusion of input from many constituent groups, these teams could become so large as to be unworkable. Furthermore, the development of technical study plans requires that involved individuals have expertise in the respective areas of study. How is this being guaranteed? The draft GCES Implementation Plan dated August 30, 1988, provided for "focus groups" which would allow for input to the Phase II process by all interested parties. There is no mention of these groups in the current version. Are they still to be included in the Phase II framework? A flow chart depicting the hierarchy of group involvement in Phase II, such as was provided in the previous draft, would be most beneficial.

4 3 Table 1, as referenced, confirms our fears concerning the size of the study groups. If each group on the list (two for some agencies) has only one representative, there will be between 11 and 13 members on the study groups. These are large numbers of individuals, given the disparity of interests among the involved groups. Will all these groups be required to provide representatives that are technically qualified? How will the size and exact composition of the study groups be determined?

Many readers will not understand the reference to "...development of contingency plans...". The document should explain what contingencies are being planned for and why they are necessary.

4 4 How can Western determine the (economic) impact of the technical studies on the power users? A primary objective of the Economic Study is to develop a model which will predict this impact under different flow regimes. If Western is currently able to make this

- Page 4 Para 4 determination, why is the Economic study being undertaken?
- What will the ERC use as criteria to determine whether impacts are too great from certain technical studies? How will the environmental and recreational impacts of continued current operations be weighed against the economic impacts to power users of proposed technical studies? If contingencies involve extending the period of technical studies for several more years, how will these impacts be measured? These are important questions that should be addressed in this document.
- 5 1 A major role of the Technical Integration Group, as indicated on page 4, para 3, is the combining of the Environmental and Economic study plans into an Integrated Study Plan. This function, which is very important, seems to have been lost in the outlined process to completion. One of the major criticisms of the National Academy of Sciences review committee concerning GCES Phase I was that the program lacked early integration. To ensure that this mistake not be revisited and that Phase II results be considered credible, we feel that it is imperative for both Environmental and Economic study plans to be integrated at the outset. This cannot be accomplished if the Economic study proceeds in advance of finalization of the Environmental Study Plan. Therefore, we strongly suggest that both study teams should operate under similar constraints of timing and review before initiation of the studies.
- 5 3 Here again, we are left with the impression that the Economic Study will be conducted separately, rather than integrated with the Environmental Study at the outset. The role of the senior level scientist(s) should be to oversee the technical aspects of both studies and to ensure their integration in the final Phase II product. To do otherwise would be to ignore the recommendations of the National Academy of Sciences review committee. In this respect, is the National Academy of Sciences review committee being asked to comment on the Implementation Plan?
- 5 5,6 The purpose and timing of the development of the Integrated Study Plan is the most confusing part of the Implementation Plan. Will the Integrated Study Plan be used as a framework for Phase II, and will it ensure that integration of environmental and

- Page 5 Para 5,6 economic findings can be integrated when Phase II is completed? Will the Integrated Study Plan be completed before Phase II studies are initiated during the course of Phase II studies?
- 6 4 ERC Activities--As first stated on page 3 of the Implementation Plan, the original December 6, 1982, directive to initiate the GCES stated that the program should include an analysis of potential alternative operating criteria for Glen Canyon Dam. Will these alternative operating criteria be developed during Phase III? Will they be analyzed using information provided by the Environmental and Economic studies in Phase III? Failure to do so would damage the credibility of the GCES program, and it would undoubtedly invoke an outcry from constituent groups.
- 7 2 How can a determination of no change be made when alternative operating criteria have neither been developed or examined? Furthermore, it appears that invocation of NEPA compliance might well be warranted under a decision of no change by the Secretary of Interior. GCES Phase I results showed clearly that there are negative impacts to environmental and recreational resources from current operations of Glen Canyon Dam. Therefore, a decision of no change would be a decision that these impacts are acceptable. We suggest that this decision cannot be made outside the framework of NEPA and the Endangered Species Act, particularly as it would involve impacts on endangered species.
- 7 4 Again, we feel that it is clear from the original directive for GCES that analysis of potential alternative operating criteria should be within the scope of the GCES program. Alternatives should be developed with information obtained during the course of GCES.
- 7 6 The Arizona Game and Fish Department, under the provisions of Arizona Revised Statutes, the Endangered Species Act, and the Fish and Wildlife Coordination Act, has a legal mandate to manage and protect the State's wildlife. At the state level, the Department is the primary entity empowered to speak for wildlife interests.
- 7 8 The Arizona Game and Fish Department has not received a draft non-jeopardy biological opinion on

-6-



January 4, 1989

Page Para

7 8 the operation of Glen Canyon Dam. The existence of such an opinion should be clarified, because the Department serves in a consultation role to the Fish and Wildlife Service through the Fish and Wildlife Coordination Act. Furthermore, we find it curious that insufficient information was produced in GCES Phase I to judge the impacts of dam operations on the endangered humpback chub, yet a jeopardy opinion may have been reversed based on the same information.

What is the effect of the inclusion of field studies for the Conservation Measures on the duration of Phase II? Can Phase II be finalized until these studies are completed, and the final non-jeopardy opinion is rendered? Hopefully, these questions will be given priority consideration by the technical study teams responsible for determining the timing and duration of Phase II.

Page Para

Department Of Energy

Western Area Power Administration
P.O. Box 11606
Salt Lake City, Utah 84147

JAN 10 1989

Page Para

JAN 09 1989

JAN 10 1989

Members of the Executive Review Committee
Glen Canyon Environmental Studies
Enclosed is a memorandum from John Allum, Chairman of the Colorado River Energy Distributors Association, responding to issues raised in the materials sent to the Executive Review Committee by Dave Wegner.

Sherrie Cherry
dor Lloyd Greiner
Area Manager

Enclosure

cc:
 Wayne Cook, Bureau of Reclamation
 Richard Marks, National Park Service
 Jim Young, Fish & Wildlife Service
 Patricia Port, Department of the Interior
 Jack Davis, National Park Service
 John Reed, National Park Service

NOTICE: IF YOU DETACH
ENCLOSURES PLEASE INSERT
CODE NO. _____

Joe Falbo, President
c/o Maricopa Water District
P.O. Box 260
Waddell, AZ 85355
602-975-2151

Joe Falbo, President
c/o Maricopa Water District
P.O. Box 260
Waddell, AZ 85355
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CREDA

COLORADO RIVER ENERGY DISTRIBUTORS ASSOCIATION

January 4, 1989

Mr. Lloyd Greiner, Area Manager
Salt Lake City Area Office
Western Area Power Administration
438 E. Second South
Salt Lake City, Utah 84147

Dear Lloyd:

Enclosed please find an original and five copies of a memorandum to the Executive Review Committee for Glen Canyon Environmental Studies responding to issues raised in the materials sent to the Executive Review Committee by Dave Wegner. Would you please see to it that members of the Executive Review Committee get copies of this memorandum. It is our understanding that you are the cooperating agent through which our constituent comments should be transmitted.

Thank you for your assistance in this matter.

Sincerely,

John Allum
John Allum, Chairman,
CREDA Marketing Committee

/psr
Enclosures

MEMORANDUM

TO: Glen Canyon Environmental Studies Executive Review Committee
FROM: John Allum, Chairman, CREDA Marketing Committee *JA*
DATE: January 4, 1989
SUBJECT: Memorandum of November 28, 1988 from the Glen Canyon Environmental Studies Interim Technical Integration Team

We have been provided with a copy of a memorandum to the Executive Review Committee together with an agenda for your meeting on January 13, 1989 in Albuquerque, New Mexico and the above referenced memorandum which has been forwarded to you for your consideration.

The purpose of this memorandum is to call to your attention certain salient facts that we believe should be considered by you in approaching any of the subjects on your agenda for January 13th.

The November 28th memorandum could lead you to believe that Phase II of the Glen Canyon Environmental Studies must be completed within two years. "Verbal directives" to that effect are referenced on the bottom of Page 1 of that memorandum. We do not know the source of those directives but, in our view, they fly in the face of the very specific directive given by the Assistant Secretaries in the June 16, 1988 memorandum about how further studies should be conducted. We will not attempt here to give you all the facts on this subject since your January 13th agenda includes a discussion of constituent comments on the most recent draft of the GCES document. We will merely reference you to our comments on that document. Suffice it to say that we believe that GCES Phase II not only is not limited to a two-year study path but, indeed, was never intended to be limited to a two-year study path by the mandates of the Assistant Secretaries given last summer.

Northern Arizona Council of Governments



Memorandum of November 28, 1988 from the Glen Canyon Environmental Studies Interim Technical Integration Team
January 4, 1989
Page 2

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In any event, discussion of time limits at this point is academic since there is no definitive list of environmental studies, flow regimens, duration, time of day, week, year, or other specific parameters. Without such specifics, it is impossible to judge the availability of appropriate time periods and flows within "normal operations of Glen Canyon Dam" as contemplated by the June 16th memorandum. Until such a definitive list has been constructed and analyzed, a discussion of time frame for completion of studies is sheer speculation.

However, we would be remiss if we did not call your attention to our direct and strenuous opposition to the statement on Page 5 of the November 28th memorandum that completion of the studies contemplated by the June 16th directive of the Assistant Secretaries is contingent upon scheduling specific flow releases from Glen Canyon Dam. Indeed, as we outline in detail in our comments on the second draft of the GCES Phase II document, the clear and unambiguous direction of the Assistant Secretaries was that studies would be done when flows occurred on the river during normal operations and not from artificial manipulation of flows from Glen Canyon Dam. There is no mandate to complete the studies directed by the Assistant Secretaries within two years nor is there any evidence that, under normal flow conditions, they cannot be completed within two years. All we have is speculation. However, the directive is clear and unambiguous that, if flows are not available for a particular study at a particular time, the study is to wait until those flows are available. Such a directive is in total conflict with the concept of artificial scheduling of specific flows from Glen Canyon Dam.

We think that the best help the Executive Review Committee could be to this process at this point in time would be to motivate the Environmental Study Team to complete a specific set of proposed studies with specific requirements and circumstances to substitute for Table 1 attached to the November 28th memorandum. Once a list of specific proposed studies is developed and reviewed by the interested parties, a study plan can be drafted. Until specific flows are identified for specific studies, further discussion of the subject seems unproductive.

/psr
E:MGCES

KENNETH J. SWEET
EXECUTIVE DIRECTOR

December 21, 1988

Mr. Clifford Barrett
Regional Director, Upper Colorado Region
Bureau of Reclamation
P. O. Box 11568
Salt Lake City, Utah 84147

Subject: Glen Canyon Environmental Studies

Dear Mr. Barrett:

Thank you for your note of December 13th and copy of the news release on change in coordination of the Glen Canyon Environmental Studies. Northern Arizona Council of Governments is actively involved in water and water quality planning issues in our region and would like to participate in the Glen Canyon study process. We may be interested in serving on any advisory committee that are established. Please let us know if any committees set up on which our participation would be appropriate. We would appreciate your sending us a copy of the draft study plan, which we have not yet received. Please let us know if we may be of assistance in your study program.

Sincerely,

Kenneth J. Sweet
Executive Director

PLATTE RIVER POWER AUTHORITY



TIMBERLINE & HORSEFOOT ROADS • FORT COLLINS, COLORADO 80525 • (303) 226-4000

January 3, 1989

Mr. David L. Wagner
GCES Program Manager
Bureau of Reclamation
P.O. Box 11568
Salt Lake City, Utah 84147

Dear Mr. Wagner:

In his letter of November 30, 1988, Mr. Cliff Barrett, Regional Director of the Colorado Regional Office, asked for comments on the Glen Canyon Environmental Studies ("GCES") - Phases II and III Implementation Program. Platte River Power Authority ("CREDA") has participated with the Colorado River Energy Distributors Association ("CREDA") in preparing comments on this draft, and Platte River fully endorses the CREDA comments which are being submitted separately.

We would like to emphasize that we think it is extremely important that the Western Area Power Administration be an integral part of the federal representation in the GCES and that these studies be properly scoped and sources of funding identified so that everyone understands what is to be accomplished. We appreciate the opportunity to comment on the program document. Please keep us informed of further developments on the GCES.

Sincerely,

PLATTE RIVER POWER AUTHORITY

Thaine Michie
Thaine Michie
General Manager

/jl
cc: CREDA Marketing Committee

UPPER COLORADO RIVER COMMISSION

355 South Fourth East Street
Salt Lake City, Utah 84111

January 6, 1989

410

Dr. Wayne N. Marchant, Chief
Research and Laboratory Services Division
U. S. Bureau of Reclamation
Denver Office
P. O. Box 25007
Denver, Colorado 80225

Dear Dr. Marchant:

The Upper Colorado River Commission has reviewed the Bureau of Reclamation's draft document entitled "Glen Canyon Environmental Studies Phase II and III Program for Implementation" dated November 28, 1988. This second draft of the Glen Canyon Environmental Studies (GCES) program provides a clearer and more acceptable process for conducting the study than the previous draft dated August 30, 1988.

The Commission agrees with your decision to divide the GCES program into a Phase II (technical) study effort and a Phase III (policy-level) decision process, which should allow the technical studies to be conducted appropriately outside of the policy-level decision process.

Representatives of the seven Colorado River Basin States should be provided an opportunity to review the flow levels selected to conduct the environmental studies, and to participate in the decision processes for determining the acceptability of those flow levels and their duration. The November 28th draft, at page 4, does not provide for States' involvement, and thus it should be revised.

At the bottom of page 4 and the top of page 5, the procedure to be followed by the Economic Study Team should be expanded to include coordination with the Environmental Study Group, the Technical Integration Group and the Executive Review Committee (ERC). All of these entities should be involved in identifying the specific flow patterns or combinations of patterns requiring economic analysis.

Dr. Wayne N. Merchant
January 6, 1989
Page Two

The Commission suggests that the discussion of the "GCES Phase III Activities" on page 6 be revised. It is not sufficient to have "informal discussions with the Colorado River Basin States" following completion of the draft of the ERC Report. The Governors of the seven Colorado River Basin States have each designated one person to represent them in matters relating to operation of the Colorado River reservoirs. As sovereign governments, the States believe they should be members of the ERC. The four Upper Division States representatives request that the Commission's Executive Director be appointed to the ERC on their behalf.

The Upper Colorado River Commission appreciates the opportunity to comment on the revised draft GCES program.

Very truly yours,

Jane Bind

for
Gerald R. Zimmerman
Executive Director

Mr. Clifford I. Barrett
Regional Director
Upper Colorado Region
GRZ:hiw

Lower Division States Representatives
Colorado River Energy Distributors Association Representatives

JAN 06 1989

Western Area Power Administration
PO Box 11606
Salt Lake City, Utah 84147

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As representative for the Western Area Power Administration (Western) on the Glen Canyon Environmental Studies (GCES) Executive Review Committee (ERC), I offer the following comments on the November 28, 1988, draft document, "GCES Phase II and Phase III Program for Implementation" (Program).

The transmittal letter accompanying the Program indicated that this was the second draft of the implementation program for Phase II and Phase III activities. The last draft of the Program that Western has reviewed was dated August 30, 1988, and only identified Phase II activities. After comparison of the Program to the August 1988 draft program document, it would appear that those activities once identified with "development of a summary document" now relate to Phase III activities. Was there a previous draft program which delineated both Phase II and Phase III activities?

In the August 1988 draft program document, a figure was included which illustrated the proposed process for completion of Phase II efforts (Figure 1). This figure, which provided a conceptual basis for the interrelationship of GCES Phase II activities, was not included in the latest draft Program document. I suggest that such a schematic be reintroduced into the Program document to illustrate these interrelations. I believe that comments received on the content of the earlier schematic could be incorporated, and the diagram would serve as a useful reference for program participants and interested parties.

I continue to have concern about the role of the Technical Integration Group. During meetings attended by members of my staff, it appeared that the Technical Integration Group is composed of a "subset" of the Environmental Study Team members. I am somewhat confused, as I believe others are, about the role of these individuals as members of both groups. Is the primary purpose of the Technical Integration Group to serve as a planning coordinator responsible for compiling the findings and recommendations of the study teams?

It remains unclear how the senior scientist will interact with or influence the Technical Integration Group. One senior scientist cannot be an expert in all the areas being studied. A bias might be introduced in favor of the senior scientist's area of expertise. A group of senior scientists covering the range of expertise that will be used during the various studies and analyses could provide better oversight. Also, it would be useful to clarify the role of the GCES Study Manager as opposed to that of Reclamation management and the senior scientist.

As described in the Program document, the Phase III process is the "decision-policy process," and will involve review by the FRC of the GCTS Phase II report(s), preparation of a draft Phase II ERC Report, and "informal discussions" with the Colorado River Basin states and others. It is unclear what is intended by the phrase "informal discussions." Also, the need for full consensus among the ERC members with respect to the revised ERC report must be emphasized. The final report should reflect the views and recommendations of all ERC representatives and should not be sent to the Department of the Interior until consensus is achieved.

The statement in the sixth paragraph on page 7 regarding the assumption by Reclamation that the State Colorado River Commission representatives "are representative of all valid state interests, including water, power, and recreation and the environment" is unsupported. These appointed state representatives are primarily interested in protecting the water interests of the states they represent. Their views do not necessarily reflect the other interests which this draft program document purports that they represent. Therefore, the decision process for review of possible changes to the long-range operating criteria should include representatives of all significant interests in addition to the state representatives. It may be that the ERC will continue to have a role during this period.

The draft Program document proposes that Western provide assessments of the impacts to requests for special releases during the study periods and that Western coordinate with power customers in making such assessments. However, on several occasions, I believe that Reclamation indicated that one of the roles of the Economics Study Team was to perform that function.

The Program says study plans will be developed by the study teams and presented to the constituent groups. Table 1 shows the constituent groups as being on the study team already. It would be more manageable if the constituent groups were not on the study teams but were used for review and comment.

The Program documents fails to mention the tentative (revised) schedule for completion of the studies as was done in the August 1988 draft.

I continue to believe that the clearer the Program document, the less confusion will persist among the parties who have committed to participate in the development and implementation of these additional studies. A listing of specific comments on the draft Program is enclosed.

Sincerely,

Lloyd Greiner
Lloyd Greiner
Area Manager

Enclosure

WESTERN AREA POWER ADMINISTRATION

**Specific Comments on November 30, 1988, Draft of
"Glen Canyon Environmental Studies
Phase II and III
Program for Implementation"**

<u>Location</u>	<u>Comment</u>	<u>Page 5, second line</u>	<u>Page 5, second line</u>	<u>Page 5, section B</u>	<u>Page 5, section C</u>	<u>Page 6, second full sentence</u>
<u>Page 1, Introduction</u>	Western should be included in the list of Federal agencies cooperating to determine the impacts of the operations of Glen Canyon Dam. Western is also a member of the Executive Review Committee.	Change the word "second" to "[Bureau of] Recclamation" with reference to the objective of analyzing potential alternative operating criteria.	Included as part of the Environmental Study Team's decision process is the development of study flow needs. The direction from the Assistant Secretaries of Interior states that the data will be acquired during normal operation of Glen Canyon Dam, that every effort should be made to eliminate any impact on normal operations and the determination of flow levels to be studied, and the timing of studies should be worked into the release programs of the Bureau and Western, not vice versa. This paragraph and the following paragraph fail to adhere to the direction that study flows must be based on normal operations and are not to change, interfere with, or study anything other than normal operations.	Included as part of the Environmental Study Team's decision process is the development of study flow needs. The direction from the Assistant Secretaries of Interior states that the data will be acquired during normal operation of Glen Canyon Dam, that every effort should be made to eliminate any impact on normal operations and the determination of flow levels to be studied, and the timing of studies should be worked into the release programs of the Bureau and Western, not vice versa. This paragraph and the following paragraph fail to adhere to the direction that study flows must be based on normal operations and are not to change, interfere with, or study anything other than normal operations.	Included as part of the Environmental Study Team's decision process is the development of study flow needs. The direction from the Assistant Secretaries of Interior states that the data will be acquired during normal operation of Glen Canyon Dam, that every effort should be made to eliminate any impact on normal operations and the determination of flow levels to be studied, and the timing of studies should be worked into the release programs of the Bureau and Western, not vice versa. This paragraph and the following paragraph fail to adhere to the direction that study flows must be based on normal operations and are not to change, interfere with, or study anything other than normal operations.	Change the words "will" and "do" to "may" so that the first sentence reads; "The Economic Study Team may follow a shorter decision process primarily because the economic studies may not require specific field conditions prior to initiation." There words "will" and "do" imply an unnecessary limitation or the scope of the Economic Study Team's decision process.
<u>Page 4, section B</u>	Point 3 of the Environmental Study Team's four step process for completion states that "contingency plans" will be developed if the impacts to power of the team's proposed technical studies are too great. Who will develop these "contingency plans"?	Point 3 of the Environmental Study Team's four step process for completion states that "contingency plans" will be developed if the impacts to power of the team's proposed technical studies are too great. Who will develop these "contingency plans"?	Point 3 of the Environmental Study Team's four step process for completion states that "contingency plans" will be developed if the impacts to power of the team's proposed technical studies are too great. Who will develop these "contingency plans"?	Point one of the Integrated Study Plan areas of focus speaks of monitoring critical Grand Canyon resources that will be used of evaluation of short term and long term impacts on operations. Should the word "on" be "of"?	Point one of the Integrated Study Plan areas of focus speaks of monitoring critical Grand Canyon resources that will be used of evaluation of short term and long term impacts on operations. Should the word "on" be "of"?	Change the word "the" to "initial" so that item one of the decision process for the Economic Study Team reads: "Agreement on initial specific studies to be initiated and the process to use."
<u>Page 5, first line</u>	"4. Monitoring of assumptions used in the economic analysis and revision of such assumptions if they become invalid."	Add a fourth area of study for the Integrated Study Plan as follows:	Add a fourth area of study for the Integrated Study Plan as follows:	"4. Monitoring of assumptions used in the economic analysis and revision of such assumptions if they become invalid."		

Page 6, section A

Rephrase items 2 and 3 of the proposed Executive Review Committee's report to read as follows:

- "2. Consideration of constituent comments and study results including an evaluation of the costs and benefits associated with any recommendations for changes in the operation of Glen Canyon Dam; and

3. Review and refinement, as necessary, of the original ERC recommendations."

Page 7, final paragraph

This paragraph refers to "seven Conservation Measures that must be addressed" in relation to Section 7 Consultation with the Fish & Wildlife Service (F&WS). What are these "seven Conservation Measures"? These measures should be made explicit in the document so that readers will have some comprehension of their focus and scope.

Mr. David L. Wegner
GCES Program Manager
Bureau of Reclamation
P. O. Box 11568
Salt Lake City, Utah 84147

Dear Mr. Wegner:

On November 30, 1988, the Bureau of Reclamation distributed copies of the GCES Phase II and III Program for Implementation to the various constituent groups for comment. Salt River Project fully subscribes to the comments being submitted separately by the Colorado River Energy Distributors Association, but would like to emphasize several areas of extreme importance.

Western Area Power Administration must be identified in the Program for Implementation as being an equal participant in all phases of the GCES effort. The most glaring omission is in the first paragraph of the Program document. Not only must Western be identified in the document, but it follows that they must also be actively involved in all Phase II and III activities.

The study plan referenced in the Program document must be reduced to writing as quickly as possible. Additionally, the study plan should include a budget for the Phase II and III activities.

We appreciate the opportunity to comment on the Program document. Please keep us informed of further developments in the Glen Canyon Environmental Studies.

Sincerely,

Darrell E. Smith
Darrell E. Smith
Director, Resource Planning



United States Department of the Interior

OFFICE OF ENVIRONMENTAL PROJECT REVIEW
BOX 36098, 450 GOLDEN GATE AVENUE
SAN FRANCISCO, CALIFORNIA 94102

January 26, 1989

NEPA comes into play when alternatives that have potentially significant impacts to the environment are considered for implementation. Whether the impacts are beneficial or adverse, the key is potentially significant. Interim changes can be made and evaluated as the EIS is being prepared and completed.

If you have any questions or would like to discuss these issues further, please call at FRS: 556-8200.

MEMORANDUM

TO: David Wegner, Director
Glen Canyon Environmental Studies

FROM: Patricia Sanderson Port
Regional Environmental Officer, San Francisco

SUBJECT: Implementation Plan Comments

Thank you for the opportunity to review this plan. I have some suggested changes in language for Page 7:

B. Department of the Interior Actions

Line 3 "Recommendations (if any) for operational changes at Glen Canyon Dam are to be proposed for implementation".

Third paragraph, line seven "accommodated through the annual operating plan, the NEPA compliance process will begin. Interim changes can be made, but an EIS needs to be initiated to evaluate both alternatives and their impacts to the environment. As the NEPA process progresses, the interim changes can be monitored and the information used in the preparation of the EIS. Since the NEPA process usually takes more than two years to complete, from the draft through final documents, interim changes can be made, and the information gathered should provide data for a realistic and meaningful, rather than theoretical, EIS.

Paragraph 4: as is

Paragraph 5: "When the NEPA compliance is initiated, . . . changes . . . would be explored.

These changes are appropriate because NEPA compliance should begin at the point the Secretary decides alternatives are necessary to the operations of the dam in order to mitigate identified environmental damages. Whether the changes can be accomplished within the existing criteria or not is not the trigger for NEPA compliance.



SIERRA CLUB

Grand Canyon Chapter · Arizona

Dec 30, 1988

Clifford Barrett
Regional Director
Bureau of Reclamation
US Department of Interior
P.O. Box 11568
Salt Lake City, Utah 84147

JAN 5 1989

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Dear Mr. Barrett,

The following comments on the proposed GCES Phase II Implementation Program are submitted on behalf of the Grand Canyon Chapter of the Sierra Club.

After reviewing the document, which was received in mid-December, we must express disappointment with the general thrust of the plan. It is obvious that the Department has absolutely no real intentions of conducting an EIS on the flow regime at Glen Canyon Dam, neither on current flow releases which are significantly extreme, or on proposed flows. The NEPA process would only be utilized if any of the Basin states disagreed that any proposed changes in operation could be implemented within the existing operating criteria. We strongly disagree. Any changes should receive a full NEPA review before being implemented. In fact, in view of the continual problems created by present operation of the dam, we would insist that an EIS be prepared on current operation as well.

We would have been interested in reviewing and commenting on the proposed environmental and economic studies, but page 5 of the plan was not included in the set sent to us. The snippet of information contained on page 4 regarding the study process suggests that no matter what the environmental committee proposes, the studies can be substantially altered by, we assume, the ERC without checking with the study committee. It certainly appears that the economic study process will outweigh the environmental study process.

We intend to participate as much as possible in the studies, but we can not urge you strongly enough to undertake an EIS now.

Sincerely,

Joni Bosh
Chapter Chairperson