- TECHNICAL REPORT -

(PRELIMINARY/DRAFT)

# AGENCY RECALCITRANCE AND EVASION REGARDING COMPLIANCE WITH THE NATIONAL ENVIRONMENTAL POLICY ACT RELATING TO GLEN CANYON DAM OPERATIONS: A DOCUMENTED NEED FOR CONGRESSIONAL INTERVENTION

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## I. SUMMARY.

Although federal construction of Glen Canyon Dam on the Colorado River was completed in 1963, six years prior to the passage of the National Environmental Police Act (NEPA), a number of operational, structural and legal events and implementations occurred after NEPA was enforced, which should have triggered the Environmental Impact Statement (EIS) process requirements of the Act.

These events included a series of lawsuits against the Bureau of Reclamation (BOR), the agency charged with ownership and management of the dam and power plant, challenging the ongoing management and subsequent impacts of the facility as being out of compliance with NEPA. The continual litigation resulted in legally enforceable representations, stipulations and commitments by the agency to actively engage the NEPA/EIS process through the preparation of either a site specific (Glen Canyon) or comprehensive/systemwide (Colorado River Storage Project) EIS. The BOR did in fact prepare a draft Environmental Assessment (EA) for Glen Canyon Dam in 1976 which succinctly outlined environmental and recreational impacts of operations and identified a spectrum of viable operation scenarios for mitigation of these impacts. The effort, however, was abandoned within one year and the BOR's binding commitments laid in limbo until 1990.

Other events which should have legally engaged the EIS process included documented operational changes involving significantly enhanced peaking operations, power plant upratings, and the Glen Canyon Environmental Studies Program.

After more than a decade of public clamor over lack of NEPA compliance and alarmingly enhanced irreversible environmental and recreational impacts of the dam in Grand Canyon National Park, most notably being the extreme erosion of beaches and riparian habitat, and concern over further impact-enhancing structural and operational changes being both proposed and implemented, the Department of Interior, in direct response to a successful legal challenge against the Western Area Power Administration (WAPA) in issuing its post-1989

power marketing contracts, directed the BOR to begin a two year, site specific EIS process.

The issues presented in light of Interior's recent directive are as follows:

1. Considering a lengthy history of apparent fraud, deceit, contempt of Court, and bad faith evasion of legal responsibilities on the part of BOR in regard to Glen Canyon Dam NEPA compliance, along with the fact that unnecessary, irreversible environmental impacts have been ongoing and accelerating since 1975 when NEPA was legally engaged, the present EIS process is suspect, and interim mitigation and Congressional direction appear mandated;

2. In the absence of Congressional direction, guidance from rule-making, or detailed judicial orders, the BOR will likely accelerate the present EIS process, considering the Agency's historic developmental mission and client base, the history of non-compliance with NEPA and failure to consider a full range of management options and priorities, and the employment of a lesser baseline of data on a fast track process which will tend to narrow the Agency's decision-making options closer to the status quo. It is noted, however, that a more protracted study would paradoxically present the specter of enhanced, irreversible impacts during the study period, which suggests strongly that interim protective operations and flow regimes should be implemented; and,

3. Assuming the BOR does properly identify and quantify the relationships between dam operations and environmental degradation and other impacts in a project EIS, and further, identifies alternative operating scenarios for environmental impact mitigation, the Agency is not bound to any implementation of a mitigation strategy or alternative, considering that NEPA itself only requires full consideration of impacts and alternatives without mandating a "correct" environmental decision.

It is thus the conclusion of this review of the record, that expeditious Congressional action and direction are required regarding the mandated scope of Colorado River NEPA compliance, consistent with the record and articulated in a preferred alternative, as well as measures for both interim and permanent management direction within the present EIS process, if any of the impacted resources and values of Grand Canyon National Park are to be preserved at all. More specifically, immediate Congressional direction is

needed in the following areas: 1) basing the present site specific EIS on a "preferred alternative" of maximum impact mitigation attainable, 2) returning Glen Canyon Dam towards a base loaded flow regime, 3) mandating the study of technologies and methodologies for restoration and stabilization of the riparian environment in Grand Canyon, 4) interim flow management, 5) Department of Interior (DOI) preparation of a comprehensive environmental impact statement addressing systemwide operations and cumulative/synergistic impacts on the Colorado River from all dams, with a view towards redefining and prioritizing project purposes and values, and rationally integrating Colorado River management to mitigate environmental and recreational impacts, with such analysis not to be constrained by present "law of the river," and 6) Congressional investigation and oversight of BOR activities and omissions regarding NEPA compliance, environmental impacts and other relevant aspects.

The tragedy of the Grand Canyon is that even with the presence of Glen Canyon Dam, unnecessary and avoidable environmental and recreational impacts have been permitted to accelerate at extreme rates simply because of agency recalcitrance, evasion and deceit, and that the problem is and always has been to a great extent remediable.

## II. INTRODUCTION.

In 1956, PL84-485 authorized the Colorado River Storage Project (CRSP), a comprehensive scheme for development of the water resources of the Upper Colorado River Basin (UCRB). Project management was delegated to the BOR and project purposes were stated as follows: 1) to regulate the flow of the Colorado River, 2) to store water for beneficial consumptive use, 3) to provide for reclamation of arid and semi-arid land, 4) for flood control, and 5) for the generation of hydro power as an incident of the foregoing purposes. 43 USC 620. The Act's primary purposes of river regulation and providing water, in contrast with its incidental purpose of providing hydropower is reflected in the legislative history and debates on the bill (see Congressional Record April 18, 1955, p. 4566), as well as being reiterated in the Colorado River Basin Project Act (CRBPA) of 1968, 43 USC 1501.

Glen Canyon Dam, the principle component of the CRSP was completed in 1963. Originally designed to impound 27 million acre feet of water into Lake Powell, and to generate 1,150 megawatts of electricity, the dam was designed for base loaded operations, as indicated by technical design information (see

Glen Canyon Dam and Power Plant, Technical Record of Design and Construction, USDOI/BOR, 1970) as well as legislative history (see Colorado River Basin Act Hearings, 1965, Representative Morris Udall).

Pursuant to the Colorado River Compact (CRC), the 1944 treaty with Mexico, the CRBPA, and other "law of the river," the annual minimum objective scheduled release at Glen Canyon Dam has been set at 8.23 million acre feet or greater. Within these constraints, monthly and daily releases are presently scheduled to meet power contract obligations, provided such daily releases are sufficient to assure minimum flows for recreation, fish and wildlife, which were unofficially established (non-binding) at 1,000 cfs. Section 8 of the CRSP Act provided for recreational development and for the mitigation and enhancement of fish and wildlife, both above and below the dam. These environmental considerations and priorities are also reiterated in the CRBPA of 1968, Section 1501, with the generation of hydro power again given "incidental" status.

The closing of the gates at Glen Canyon Dam in 1963 immediately set into motion a succession of irreversible environmental changes, as the Colorado's heavy silt load settled to the bottom of Lake Powell, and as the dam released clear and colder water in flow regimes markedly different from those of the natural river. Instantaneous and rapidly fluctuating power generating flows from 1,000 cfs., or less, to 28,000 cfs., or greater, were now available, as opposed to pre-dam seasonal regimes of rising river tides conforming to seasonal and regional hydrological conditions, the peak flows of which averaged some 90,000 cfs., during spring runoff. Each flood reworked the riparian zone and beaches, redepositing sands and alluvium at flood recession. With the present controlled and constrained flows, the higher riparian terraces are no longer flooded and are subjected to irreversible wind erosion and elimination, while the lower "beach" areas are irrevocably eroding and being washed into Lake Mead due to instability, high fluctuation or "ramping" rates, and lack of new sand deposition. Additionally, debris flows from side canyons which form rapids are no longer being cleared out by spring floods, thus creating continually increasing navigation hazards which will eventually result in completely blocked, non-navigable channels.

Dense floodplain-type vegetation has invaded the former beach zone, and a succession of ecological and biological changes has occurred in response to the very new environmental conditions and destroyed habitat; most notably, the

extirpation of several species of formerly flourishing fish, several of which are now listed as extinct or endangered.

Recreational opportunity on the Colorado River in Grand Canyon, a world-renowned white water experience, now also operates at the whim of agency officials whose water release decisions are economically driven. The safety, aesthetics and even viability of river expeditions have been compromised, endangered and jeopardized by the extent and rate of flow fluctuations available to the dam operators in providing "peaking power."

In 1969, Congress passed the National Environmental Policy Act (NEPA), 42 USC 4321 (effective January 1, 1970), which provides that all federal decision makers must systematically consider and document the environmental and other impacts of all major federal actions having a significant impact on the quality of the human environment. This revolution in agency decision making processes provides more specifically that as Congress now recognizes "the profound impact of man's activity on the inter-relations of components of the natural environment" that:

> "It is the continuing policy of the federal government . . . to use all practicable means and measures . . . to create and maintain conditions under which man and nature can exist in productive harmony and fulfill the social, economic and other requirements of present and future generations of Americans." 42 USC 4331 (Sec. 101).

The "action forcing" or procedural directives of NEPA require among other things that all federal agencies shall:

> "Utilize a systematic interdisciplinary approach which will ensure the integrated use of the natural and social sciences and the environmental design arts in planning and in decision making which may have an impact on man's environment; and . . . include in every recommendation or report on proposals for legislation and other major federal actions significantly effecting the quality of the human environment, a detailed statement by the responsible official on a) the environmental impact of the proposed action, b) any adverse environmental effects which cannot be avoided should the proposal be implemented, c) alternatives to the proposed action, d) the relationship between local short-term uses of man's environment and the maintenance and enhancement of long-term productivity, and e) any irreversible and irretrievable commitments of resources which would be involved in the proposed action should it be implemented" 42 USC 4332 (Sec. 102).

In regard to continuing major federal actions which were begun prior to 1970, the Council on Environmental Quality (CEQ) guidelines and relevant case

law have provided that NEPA requires that agencies have an obligation to reassess ongoing projects and programs in order to avoid or minimize adverse environmental impacts, and that prior acts must be interpreted and administered in accordance with NEPA provisions when ongoing impacts are significant. 40 CFR 1500.13; Akers v. Resor, 339 F.Supp. 1375 (1972); Lee v. Resor, 348 F.Supp. 389 (1972). This concept has been given recognition in both DOI and BOR regulations. 36 Fed.Reg. 19344; 37 Fed.Reg. 1126.

It is the position of this paper that during the 1970's and 1980's, major federal actions regarding the operations and management of Glen Canyon Dam have had enhanced significant impacts upon the environmental and other resources and values of the Colorado River, the Grand Canyon and Grand Canyon National Park. Although NEPA did not carry a retroactive effect relative to the Glen Canyon Dam context, these identifiable actions, events and operational changes should have legally triggered the procedural mandates of Section 102 of NEPA. Additionally, the BOR was continually involved in litigation challenging that Agency's failure to properly comply with the mandates of NEPA, wherein the Agency not only conceded the need for either a systemwide, Comprehensive EIS (CEIS) or a site specific project EIS, but stipulated to the preparation of such documents. These commitments were commenced, but never fulfilled, in an apparent fraud upon the Courts of the United States.

## III. LEGAL HISTORY

### A. DOI/BOR RECOGNIZE NEED FOR AND STIPULATE TO PREPARATION OF EIS'S PURSUANT TO NEPA; AGENCY EVADES NEPA MANDATES AND "DEFRAUDS" FEDERAL COURTS IN 1970'S NEPA LITIGATION.

In 1974, river trip concessioners first brought the issue of BOR non-compliance with NEPA regarding Glen Canyon Dam operations to the Federal Courts, in seeking injunctive relief concerning the rates and volumes of discharges of water from the dam. Appellants in Grand Canyon Dories v. Walker, 500 F.2d. 588 (Tenth Circuit 1974) had alleged that ongoing operations of Glen Canyon Dam, and particularly, the intermittent reductions in the volume of water released below the dam interfered with the safe and viable conduct of appellant's licensed float trips, and that the continuing operation of Glen Canyon Dam was a major federal action significantly effecting the quality of the human environment, and therefore, NEPA required the preparation

of an EIS. The denial of judicial relief was affirmed on the grounds that no evidence was produced indicating that the DOI or any of its subordinate agencies had every considered, let alone decided, whether NEPA had applied to the continuing operations of Glen Canyon Dam. The Court thus held in these adolescent days of NEPA litigation that the threshold determination must be undertaken by the agency in its discretion prior to judicial review and thus the NEPA issue was not "ripe" for review.

In any event, the DOI was now on notice of both legal and "official" public demands and requests backed by documented grounds, for consideration of such a threshold determination under NEPA. Thus, in the following year, the BOR did undertake the formal study and document preparation of an environmental assessment of operations at Glen Canyon Dam.

In January 1976, the DOI published and circulated for review a "Draft Assessment of Environmental Impact Regarding Operation of Glen Canyon Dam and Lake Powell" (DEA), to serve, after comment and revision, as the "basis for determining whether or not a formal environmental statement will be required as provided by NEPA" (cover letter DEA, p. 1). The draft not only addressed certain downstream impacts of the dam and its continuing operations, but discussed "alternatives to provide replacement peaking capacity at Glen Canyon Dam in order to facilitate a release more oriented to recreation and boating" (DEA, p. 5-1). Thus, although the DOI and BOR were further along the NEPA process in 1976 than in 1990, the DOI never followed through with hearings or the preparation of a final environmental assessment; nor was any Finding Of No Significant Impact (FONSI) prepared.

In 1977, as the impounded waters of Lake Powell began to rise towards Rainbow Bridge National Monument, an area to be protected pursuant to language in the CRSPA, suit was filed against the DOI by plaintiffs alleging that, among other things, the BOR had not complied with NEPA regarding not only its operations of Glen Canyon Dam and Lake Powell, but of the entire CRSP.

In Badoni v. Higgenson, 455 Fed.Supp. 641 (D Utah 1977), plaintiffs sought to prevent destruction of a natural area and desecration of sacred areas at Rainbow Bridge National Monument resulting from the threatened inundation by Glen Canyon Dam and Lake Powell. The District Court ruled consistent with Walker that the NEPA issue was not yet ripe for review; however, the Court noted significantly that the DOI was in the process of actively considering and formulating its position regarding applicability of

the Act and the necessity of an EIS regarding Glen Canyon Dam despite the government's claim that its actions at Glen Canyon Dam were ministerial rather than discretionary major federal actions.

The decision was appealed, and in Badoni v. Higgenson, 638 F.2d. 172 (Tenth Circuit 1980), the Court of Appeals affirmed basing its decision upon the government's position before the Court conceding that the NEPA issue was ripe for judicial review and that the agency in fact had formally decided to draft a Comprehensive EIS (CEIS) for the entire Colorado River Basin Project, stating:

> "The information gathered in the preparation of the DEA on the operation of Glen Canyon Dam and Reservoir is intended to be used in the preparation of a comprehensive basin wide EIS which will evaluate the operation of all the Bureau of Reclamation projects on the Colorado River and its tributaries. The determination to prepare a comprehensive basin wide EIS on the Colorado River dams is a reasonable one within the administrative discretion of the Department of Interior" (Brief of Federal Appellees, Badoni v. Higgenson, 1978, pp. 26-27.

The Court agreed that the government's decision to draft the CEIS as opposed to a site specific or project EIS, was reasonable in that Glen Canyon Dam and Lake Powell were important elements or links in the Colorado River water and power development scheme, and thus, cannot be considered alone, as all the existing and planned projects within the upper basin were interrelated and interdependent (Badoni v. Haggenson, p. 181). The Court also noted that no proposal or any other major federal action under NEPA was articulated before the Court involving the Glen Canyon Dam project singly. Thus, the Court of Appeals' decision was based clearly upon affirmative representations and "stipulations" by the government in 1978 to prepare the Colorado River systemwide EIS, committing the government to compliance with NEPA, and rendering moot the question of whether Glen Canyon Dam continuing operations were ministerial as opposed to discretionary.

It is noted that initial work had been done on the CEIS in 1977 and 1978, but the project was then abandoned apparently over either political opposition to continued funding, or internal recalcitrance, although Congress has never specifically denied funds for the effort.

Contemporaneous with the government's 1978 affirmative representations before the Tenth Circuit, the DOI/BOR was asserting a contrary position before the Federal District Court in EDF v. Higgenson, 14 ERC 1008 (District Court,

D.C., 1980), maintaining that the decision to prepare a CEIS was within the reasonable discretion of DOI and that it would not begin the process until Congress had specifically appropriated funds for such. The District Court held that the agency did have discretion to decide when the CEIS would be undertaken, but also noted that "presumably, of course, the CEIS could not be postponed forever" (EDF v. Higgenson, p.____).

The decision was appealed and in 1981 the BOR maintained in EDF v. Higgenson, 655 F.2d 1244 (DC Circuit, 1981), that the agency would not seek funding for the CEIS; but instead, had decided to meet its NEPA obligations by continuing "its past practice of addressing cumulative and synergistic impacts in site specific impact statements for individual projects and their components in the Colorado River Basin." (Appellee's Memorandum to Court, March 27, 1981, p. 1.)

The Court of Appeals thus affirmed the District Court's decision based upon the government's original promise to complete the CEIS, but remanded the case to the District Court for determination of the legality of the government's shift from a CEIS to a site specific project EIS, emphasizing that NEPA compliance was required one way or another, and that EIS's must be prepared addressing cumulative impacts.

In the same year, EDF filed another action against BOR in regard to systemwide salinity impacts and control programs. A stipulated settlement agreement was filed on April 20, 1982 in the Federal District Court, District of Columbia, wherein the BOR and DOI agreed to prepare EIS's on Colorado River hydropower facilities, specifically addressing cumulative and synergistic environmental impacts within each document. The cases pending were thus dismissed pursuant to the stipulation filed and accepted by the Court.

In short, the DOI/BOR formally began the mandatory NEPA process regarding Glen Canyon Dam in 1975, but subsequently abandoned that effort. The DOI/BOR have since stipulated before the Federal Courts that NEPA compliance regarding CRSP operations was in fact required, and that the NEPA/EIS process was in fact being undertaken. The agency, however, has argued and stipulated inconsistently before the Courts in regard to the level of NEPA involvement (systemwide versus site specific), and in fact, has utterly failed to act upon the stipulated EIS processes pursuant to Court findings and orders despite the fact that the Courts have unambiguously upheld

mandated NEPA compliance, and relied upon these stipulations in making their rulings of either dismissing the actions or holding for the government.

B. BOR ENGAGES SITE SPECIFIC MAJOR FEDERAL ACTIONS WITHIN THE MEANING OF NEPA REGARDING GLEN CANYON DAM OPERATIONS AND STRUCTURES DURING LATE 1970'S AND 1980'S WITHOUT MANDATED, STIPULATED OR PROPER NEPA COMPLIANCE; AGENCY EVADES NEPA COMPLIANCE AND COURT STIPULATIONS THROUGHOUT 1980'S BY PROMISING BUT FAILING TO ENGAGE AN EIS PROCESS AFTER A NON-NEPA SERIES OF "ENVIRONMENTAL STUDIES."

1. Lake Powell filling operation criteria/filling criteria.

Prior to 1970, the operations of Glen Canyon Dam were governed by "general principles to govern and operating criteria for Glen Canyon Reservoir and Lake Mead during the Lake Powell filling period." 27 Fed.Reg. 6851, July 19, 1962. These criteria provided for, among other things, minimum flows of 1,000 cfs., and annual releases of 8.23 million acre feet. In 1970, the DOI published pursuant to the CRBPA of 1968, without any reference to NEPA compliance, the "criteria for coordinated long range operation of Colorado River reservoirs." 70 Fed.Reg. 7138, June 10, 1970. These criteria called for radically different and flexible operations now that Lake Powell was approaching its capacity. Representative Morris Udall had in 1965 urged that Glen Canyon Dam be in fact "redesigned" to provide peaking energy for increased revenues, at the point of reservoir filling (Colorado River Basin Act Hearings, 1965). These operational changes involved pursuant to the CRBPA, releases of greater than 8.23 million acre feet annually to satisfy CRC and Mexican Treaty obligations, minimal releases for fish, wildlife and recreation, the equalization of active storage in Lake Powell and Lake Mead, the avoidance of spills at Glen Canyon Dam, and releases scheduled to integrate systemwide and regionally hydroelectric power generation and sales to maximize power production and revenue. Annual (and monthly) plans for coordinated operation between the two reservoirs were promulgated which addressed long term, as well as daily, water release scheduling and power generation. These plans clearly recognized and articulated the interdependence of all components of the CRSP as well as Hoover Dam in Lake Mead, in coordinating operations requiring the "appropriate consideration of the uses of the reservoirs for all purposes including flood control, river regulation, beneficial consumptive uses, power production, water quality

control, recreation, enhancement of fish and wildlife, and other environmental factors." In 1980, more specific operating criteria were promulgated for Glen Canyon operations, to be revised in 1985 and every five years thereafter.

The practical effect of these operational proposals, decisions, and discretionary operational changes (i.e., major federal actions) is evident in 1) documented proposals and plans for enhanced peaking power generation, 2) flow records, 3) proposals by the Western Area Power Administration (WAPA) for enhanced peaking power generation, and 4) the recorded observations of significantly enhanced environmental impacts in Grand Canyon throughout the late 1970's and 1980's. In essence, the increased focus upon instantaneous power generation for peak purposes along with the new brokering of hydroelectric power by WAPA pursuant to new schemes and coordination of regional and systemwide resources and components, translated itself into demonstrated, radically enhanced release patterns and ramping rates which are directly related to observed, enhanced environmental impacts and erosional trends.

The 1976 DEA for Glen Canyon Dam and Lake Powell addressed these operational changes and criteria so far as they were documented at that point, along with environmental impacts and alternatives to operations; again however, all NEPA compliance compliance was abandoned prior to any final report despite BOR assurances to the Federal Courts that such compliance and environmental review were being undertaken. The post-1970 operating criteria for Glen Canyon Dam thus by themselves constituted a major federal action significantly effecting the quality of the human environment, and except for the abandoned 1976 DEA, were promulgated and activated unlawfully in light of the requirements of NEPA.

2. Western Energy Expansion Study; Structural Proposals and Project Additions at Glen Canyon Dam (Upratings).

In 1977, the DOI/BOR released its Western Energy Expansion Study (WEES) which summarized the "results of an assessment of the BOR of opportunities to respond to urgent needs for electrical power and energy in the West. . . ." (WEES, p. i).

The report focused upon enhancing the availability of peaking power generation through significant operational and structural modifications at existing DOI/BOR facilities, including Glen Canyon Dam. The study specifically identified a proposal for a 250 megawatt power plant addition to

the existing outlet works at Glen Canyon Dam, as well as the complete rewinding of existing generators and the 104 megawatt uprating of existing turbines at Glen Canyon Power Plant. Other proposals included regional re-coordination of power marketing criteria and transmission techniques which are crucially motivating to the instantaneous operations at federal hydroelectric facilities. Although the proposals were rated on the basis of twelve evaluation factors, including environmental impacts, the WEES was not accompanied by any reference to NEPA compliance.

In 1979, pursuant to the 1977 WEES and the 1978 BOR Peaking Power Status Report, the BOR initiated a study "to determine the economic, environmental and engineering feasibility of expanding the Glen Canyon Dam Power Plant." Proposals for project alternatives were articulated and technical teams engaged to review planning, biological, power, social and recreational aspects, with a view towards a "feasibility report and EIS by 1981" (Glen Canyon Dam Power Plant Expansion Study Newsletter No. 1, November 1979; Public Meeting Brochure, 1979). Along with power increases, the proposal involved significantly increasing the disparity of high and low releases from Glen Canyon Dam (increasing high flows from between 28,000 to 33,000 cfs., to 40,000 cfs. for short periods of time, with a corresponding decrease in average low flows, for longer periods of time).

Importantly, the data and information generated and released by the BOR in the course of its investigation clearly articulated proposals, policies and plans for significant changes in power marketing by WAPA which had the effect of radically altering both the monthly and daily flow regimes at Glen Canyon Dam. Proposals and plans entitled Future Flow Patterns for CRSP Power Peaking Capacity detailed the extreme operational shifts of water releases in order to accommodate the power brokering plans of WAPA so as to generate maximum, high dollar peaking revenues from CRSP facilities. BOR and U. S. Geological Survey flow records illustrate clearly that these "future flow patterns" were in fact already instituted, as water releases were shifted to peak demand months and even particular hours during the days.

Public (and agency) response, concern and controversy regarding the peaking proposals and power plant expansion were generated at a level unprecedented since the 1960's proposals for Marble Canyon and Bridge Canyon Dams in the Grand Canyon. As a result of the public uproar and other agencies (United States Fish and Wildlife Service, Arizona Game and Fish, National Park

Service, etc.) opposition to a project whose erosional, environmental and recreational impacts were obvious and extreme, the DOI discontinued the feasibility study and so-called EIS process, despite the overwhelming demand to maintain an EIS process addressing current operations.

Meanwhile, however, the BOR was actively proceeding with multimillion dollar implementation of its proposal to uprate components of the existing Glen Canyon Power Plant. This program would have essentially the same effect as the Power Plant expansion, although to a slightly lesser degree.

In September, 1979 the BOR wrote a five page "Environmental Evaluation" for the Glen Canyon Power Plant Generator Rewinding Project, noting that the rewinding of two of eight units was already completed. The completed project was stated as yielding an increase in the capacity of Glen Canyon Dam from 1150 megawatts to 1336 megawatts and increasing the maximum release from 32,000 cfs. to 33,700 cfs. (it is noted that these figures were sharply disputed by technical experts who essentially stated that the "present" capacity was overstated and the "rewound" or "uprated" capacity was underestimated, thus raising serious questions regarding the proposed increment of change both statistically and environmentally). The report dismissed environmental impacts as insignificant or nonexistent.

Due to the public and administrative pressure exerted over the Glen Canyon Power Plant expansion, a revised "Environmental Assessment for Glen Canyon Power Plant Uprating: Preliminary" was released in November 1981, "in accordance with the NEPA and current DOI and BOR guidelines" (ID, p. 1). This report now noted the relationship between rewinding the generators and uprating and utilizing the increased capacity of the turbines to effect a greater increase in peaking generation potential. Again, environmental and recreational impacts were dismissed as insignificant or nonexistent.

In January 1982, a "Draft Environmental Assessment for Glen Canyon Power Plant Upratings" was issued. Again, enhanced impacts were characterized and quantified as negligible. Neither uprating report makes note of the fact that generator rewinding was nearing completion.

On December 9, 1982, the final "Environmental Assessment and Finding of No Significant Impact for the Glen Canyon Power Plant Uprating" was issued, stating that the "preferred plan would not be a major federal action resulting in significant environmental impacts" (ID, Cover Letter, p. 1).

Public and professional comments on the EA cited glaring omissions, inaccuracies, the use of obsolete and contradictory information regarding power marketing, false assumptions, erroneous factual and legal conclusions, and deficiencies in the NEPA process itself (e.g., agency's failure to consider and incorporate responsible public, professional, and agency comments and input).

A critique of the final EA for Glen Canyon Power Plant upratings, prepared by Philip Williams and Associates, Consultants in Hydrology, reports that

> ". . . significant interdependent changes in the operation of Glen Canyon Dam have taken place in the intervening years" since completion of the Dam, that "the power plant operation has gradually shifted from providing base load to providing for an expanded peaking power load . . .," and that these changes have "had a significant impact on the seasonal and daily flows downstream. . . . <u>This change in release pattern has had major effects on the river morphology and ecology downstream</u>. The proposed uprating is a continuation of this shift in operation to extend the use of the Glen Canyon Power Plant as a peaking facility . . . which will accentuate the impacts already occurring" (Philip Williams <u>Review of Environmental Assessment for Glen Canyon Power Plant Uprating</u>, April 30, 1982, pp. 1 and 2).

The critique further noted that the EA fails to perform its proper NEPA function in that it "conceals or greatly underestimates adverse environmental impacts of the project," and that "it fails to relate the project to any coherent environmental management goals for the Colorado River downstream" (ID, p. 2).

Thus, the power plant uprating was unlawfully engaged and was justified on erroneous and misleading data and processes, and another opportunity to "correct the deficiencies in the early operational planning of Glen Canyon Dam and to establish environmental criteria for flows within the Grand Canyon" ("within the context of developing an overall management plan for Glen Canyon Dam that optimizes power production while preserving or enhancing environmental and recreational values"), was repudiated by the agency (ID, p. 4).

To further compound the situation, the regional director of the BOR explained in a cover letter to the uprating EA that although the upratings will proceed as proposed, ". . . because of the substantial number of responses to the environmental assessment, which raised questions concerning the impacts of the operation of Glen Canyon Power Plant under present

operating criteria, I have requested and received approval from the office of the Secretary of the Interior to initiate studies to determine the environmental effects of the present and historic operation of Glen Canyon Dam on the resources of the Grand Canyon."

These contradictory actions and failures again evaded the requirements of NEPA and violated the stipulations of the BOR before the federal courts regarding the agency's intentions and activities pursuant to mandated NEPA processes.

C. MAJOR FLOOD CONTROL AND SALINITY CONTROL IMPACTS AND ACTIONS HAVE BEEN CREATED OR UNDERTAKEN BY BOR WITHOUT PROPER NEPA CONSIDERATION OF ENVIRONMENTAL AND RECREATIONAL IMPACTS.

In 1983 and 1984, record precipitation and the failure of federal agencies to prudently, conservatively and non-politically plan for such events within operating and management criteria resulted in unprecedented and uncontrolled post dam flows and bypasses (spills) which caused severe environmental and recreational impacts not only in Grand Canyon but along the entire lower Colorado River.

Expert technical and administrative testimony before Congressional Oversight hearings involving the matter in 1983, illustrated that BOR/WAPA operations at Glen Canyon Dam were driven primarily by generating and brokering hydroelectricity for maximum revenues within Colorado River compact delivery constraints. The agencies have thus arbitrarily relegated the principal, congressionally stated purposes of CRSP, mainly river regulation, flood control, fish and wildlife enhancement and recreational opportunity, to lesser priorities (see Colorado River Management, Oversight Hearings Before the House of Representatives Committee on Interior and Insular Affairs, September 7 and 8, 1983, Serial Number 98-20).

In response to these events, DOI directed the development and promulgation of a modified operating criteria in order to prevent reoccurrence of the "unanticipated bypasses" which clearly violated the CRBPA and regulations issued pursuant to the act. These responses, although not documented in the scope of this examination, arguably provide another "triggering event" or major federal action significantly affecting the quality of the human environment, requiring the preparation of a systemwide CEIS, pursuant to NEPA.

BOR projects and ongoing operations of existing projects in the upper basin have also been compounding the effects of salinity in the Colorado River through the 1970's and 1980's. Various extremely expensive salinity control projects and management have also been undertaken in both the upper and lower Colorado River Basins which are integrally and inherently related to the comprehensive scope of Colorado River management, without benefit of a CEIS or any NEPA process. As noted above, litigation challenging this failure resulted in a stipulation by the BOR to the preparation of a systemwide CEIS, a position that was later reversed and altered to accommodate the consideration of cumulative and sygnergistics impacts within site specific EIS's for projects on the Colorado River, none of which have been undertaken.

D. GLEN CANYON ENVIRONMENTAL STUDIES (GCES) PROCESS STALLS PROPER NEPA COMPLIANCE FOR ADDITIONAL SEVEN YEARS AS IMPACTS ACCELERATE.

In December 1982, pursuant to the Fonsi on Glen Canyon Power Plant upratings, and the BOR request for informal studies, the Secretary of the Interior directed the agency to "initiate a multi-agency study to address the concerns of the public and other federal and state agencies about possible negative effects of the operations of Glen Canyon Dam on downstream environmental and recreational resources" (GCES Final Report, January 1988, Summary page).

The primary objective of the study was stated by the Secretary as seeing "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" (GCES Phase Two and Three Plan for Implementation, February 19, 1989).

The GCES final report disclaims any binding commitment to the NEPA process stating:

> "This study was not intended nor designed to lead directly to changes in dam operations. Any decision to make operational changes would require feasibility studies and National Environmental Policy Act (NEPA) compliance activities to assess the impact of those changes on the primary mandate of the Colorado River storage project (water storage and delivery), power generation, and economic considerations, as well as on the environment and recreation" (GCES Final Report, Summary page).

Although the BOR was now disclaiming any commitment to actively undertake the preparation an EIS, BOR officials in charge of the study assured

the involved public and agencies that the GCES would lead to a full blown EIS regarding the operations of Glen Canyon Dam, and that the studies were designed to flow smoothly into such an EIS (Dave Wagner, U.S. BOR, GCES Study Chief, verbal communications to author, 1983; Commissioner of Reclamation to Luke Danielson, correspondence September 14, 1984; Dave Wagner, verbal communication to Luke Danielson, January 2, 1986; various GCES documents including Phase Two and Three Plan for implementation, February 1989).

The euphemistically entitled, Glen Canyon "Endless" Studies Final Report, issued in January 1988, some five years after its inception, concluded the following:

1) Some aspects of the operation of Glen Canyon Dam have substantial adverse affects on downstream environmental and recreational resources; 2) flood releases cause damage to beaches and terrestrial resources; 3) under current operations flood releases will occur in about one of every four years; 4) fluctuating releases primarily affect recreation and aquatic resources; 5) modified operations could protect or enhance most resources; and 6) our understanding of the relationships between dam operations and downstream resources is not complete (GCES Final Report, Summary pages).

The information and data generated by GCES "Phase One" were reviewed by the National Academy of Sciences and the GCES Executive Review Committee who determined in 1988 that due to lack of reliable detailed information, and severe limitations of the study, a "decision on the impact of operations of Glen Canyon Dam Power Plant could not be made" (GCES Phase Two and Three Plan for Implementation, February 1989, p. 3).

Thus, in June 1988, rather than officially implementing the long awaited EIS process, the Secretary of the Interior ordered that additional studies be undertaken under "Phase Two" and "Phase Three" programs for additional review after an unspecified period of time, for the determination of whether the ultimate GCES recommendations are justified and should be proposed for implementation. The Phase Two and Three Plan reports that "if no changes are justified, then the GCES program will be terminated except for a monitoring program" (ID, p. 8). Should changes be indicated the report then clearly and improperly delegates its "discretion" pursuant to NEPA to the whim of the Basin States, the BOR's clients, and water and power constituency, for further review and action.

The ultimate absurdity of this illegal evasion and delegation, however, is that the DOI has bought almost an entire additional decade of time evading its NEPA responsibilities through sham studies that were self-repudiated and that had absolutely no binding effect nor direction towards legally mandated NEPA compliance despite the stipulations before the federal courts; and meanwhile the enhanced irreversible environmental impacts to beaches and fish and wildlife ecologies continued unabated.

E. 1989 LITIGATION FORCES WAPA TO PREPARE EIS ON POWER MARKETING, PRESSURING SECRETARY OF THE INTERIOR TO ORDER BOR TO ALSO PREPARE EIS; ENHANCED IMPACTS CONTINUE, WITH NO GUARANTEE OF ULTIMATE DECISION TO PURSUE MITIGATING OPERATIONAL CHANGES.

In December 1988, capitalizing upon power constituent infighting regarding post 1989 CRSP power marketing, environmental organizations intervened in litigation challenging the issuance of power contracts for Glen Canyon Dam and other subsidized federal hydropower, alleging, among other things, that WAPA had not complied with NEPA in its failure to prepare a full EIS detailing environmental impacts of the new proposed power marketing plan and criteria, which were largely predicated upon the generation and sale of peaking power at Glen Canyon Dam and other federal facilities.

In September 1989 the court in National Wildlife Federation vs. WAPA, Civil Number 88-C-1175G (U.S. District Court, District of Utah, Central Division) held for plaintiffs and precluded and enjoined the agency from signing and issuing fifteen-year power contracts without first assessing the environmental impacts of power production and policies in an EIS. Pending the preparation of the EIS, WAPA was permitted to market power on a court approved interim plan, which still provides for the generation and sale of peaking energy essentially pursuant to pre-1990 marketing criteria.

In response to the obvious legal and political implications of this decision, the Secretary of the Interior, in October 1989, ordered the BOR to prepare an EIS on Glen Canyon Dam operations. A notice of intent was published in the Federal Register on October 30, 1989 to prepare a draft EIS "to examine the operation of Glen Canyon Dam and its impacts on downstream natural resources within the Grand Canyon National Park and Grand Canyon National Recreation area." The BOR subsequently articulated a two-year study schedule to incorporate the GCES with the EIS; however, certain interests had

requested an extended study period in order to generate more reliable and detailed data.

Meanwhile the documented environmental degradation in Grand Canyon continues at increasingly enhanced rates and arguably the studying of release impacts for several more years under "study conditions," i.e. extreme peak flows with high ramping rates, will further increase the irreversible effects of erosion upon the presently dwindling shorelines and beach areas.

## IV. CONCLUSION

A review of the record of engagement among the agencies involved, the general, interested and professional public, and the federal courts, regarding BOR compliance with NEPA bring to light a lengthy history of apparent fraud, deceit, contempt of court, and bad faith breech and evasion of legal and statutory responsibilities and obligations on the part of the agency.

Meanwhile significant and irreversible impacts to the environment and values of Grand Canyon National Park have been on-going and in fact greatly accelerated by post-NEPA programs and projects of the BOR, without benefit of good faith, lawful compliance with NEPA, federal regulations, or the honoring of court accepted stipulations.

In sum, it cannot be disputed that the NEPA threshold has been engaged considering the legal history and BOR's own admissions, stipulations and conduct. The agency is estopped to deny that it has stipulated in good faith to prepare EIS's, and that the agency actually did engage the preparation of both site specific and comprehensive/systemwide EIS's for Glen Canyon Dam operations and Colorado River management, respectively. Instead, the agency abandoned these efforts and justified further operational and structural upratings at Glen Canyon Dam with a negative declaration (FONSI) and legally insufficient EA, and then embarked upon a sham non-NEPA study process to quell and distract the constituent organizations and public which had been demanding NEPA compliance and impact mitigation for well over a decade.

As a direct result of thirteen years of post-NEPA threshold delay, evasion, and deceit, environmental impacts--most notably the permanent erosion of Colorado River beaches in Grand Canyon National Park--have been unnecessarily imposed upon and accelerated within the National Park for approximately one-half the present operating life of the dam. Thus, the Colorado River environment in Grand Canyon, supposedly afforded the highest

level of protection as a National Park and also as a World Heritage Convention Site, now stands significantly more degraded than it would have been had the agency legally, ethically, and in good faith complied with NEPA, the courts, and its own regulations, representations, and commitments.

This review of the record thus obviates and supports the conclusion that the situation demands immediate Congressional response and action as follows:

1. Immediate Congressional investigation and oversight into BOR activities and omissions regarding Colorado River NEPA obligations, environmental impacts, water availability, and the agency's present methodologies and assumptions involved in operations, management, power marketing programs, salinity control programs, water augmentation programs, etc.

2. Immediate Congressional legislation regarding the site specific Glen Canyon EIS directing that: a) the present EIS process be based upon a non-discretionary "preferred alternative" which articulates the maximum level of impact mitigation, technically attainable, involving a return towards a base-loaded operating regime; b) the present EIS be issued as a DOI document; c) the BOR re-orient its stdy design to explore technologies and methodologies for restoration, enhancement, rejuvenation and stabilization of the riparian environment downstream of Glen Canyon Dam; d) structural alternatives such as a re-regulation dam at Lee's Ferry be precluded, and e) interim flow management be instituted to mitigate accelerating impacts during the EIS process.

3. Congressional legislation directing and adequately funding a DOI systemwide CEIS regarding the operations and management of all components of the CRSP and the cumulative and sygnergistic impacts of these and all developments on the upper and lower Colorado River, with a view towards: a) redefining and institutionalizing project purposes and priorities; b) giving environmental mitigation and enhancement a top priority; c) rationally integrating management of all components in light of higher priorities based upon environmental and recreational values and uses; d) assessing the present body of Colorado River "Law of the River" in light of changing priorities, environmental impacts, environmental constraints water availability, sound methodologies for water and power conservation and efficient use of the resources, and the institutionalizing of systemwide instream flow values.

Other than removal of the dam, nothing short of immediate congressional intervention with creative reform of the obsolete and inefficient water and power delivery schemes presently existing, as well as the inflexible and incongruent "Law of the River," will prevent the continued and ultimate degradation of Grand Canyon and Colorado River environmental and recreational "resources" and values.