CREDA
Colorado River Energy Distributors Association

ARIZONA
Arizona Municipal Power Users Association

Arizona Power Authority

Arizona Power Pooling Association

Irrigation and Electrical Districts Association

Navajo Tribal Utility Authority
(also New Mexico, Utah)

Salt River Project

COLORADO
Colorado Springs Utilities

Holy Cross Energy

Intermountain Rural Electric Association

Platte River Power Authority

Tri-State Generation & Transmission Association, Inc.
(also Nebraska, Wyoming, New Mexico)

Yampa Valley Electric Association, Inc.

NEBRASKA
Municipal Energy Agency of Nebraska
(also Colorado)

NEVADA
Colorado River Commission of Nevada

Silver State Energy Association

NEW MEXICO
Farmington Electric Utility System

Los Alamos County

UTAH
City of Provo

City of St. George

South Utah Valley Electric Service District

Utah Associated Municipal Power Systems

Utah Municipal Power Agency

WYOMING
Wyoming Municipal Power Agency

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March 10, 2023

Sarah Bucklin
Regional NEPA Coordinator
U.S. Bureau of Reclamation, Upper Colorado Basin Region
Via Email only – sbucklin@usbr.gov

RE: Glen Canyon Dam/Smallmouth Bass Flow Options Draft Environmental Assessment (EA)

The Colorado River Energy Distributors Association (CREDA) appreciates the opportunity to provide comments on the EA, issued February 24, 2023.

CREDA and CREDA Member Interests

As a member of the Glen Canyon Dam (GCD) Adaptive Management Work Group (AMWG) and Adaptive Management Program (AMP), CREDA is one of the representatives of contractors who purchase federal hydropower and resources from the GCD, a primary feature of the Colorado River Storage Project (CRSP). CREDA is also a longstanding participant in the Upper Colorado River Endangered Fish Recovery Program. CREDA members serve over 4.1 million consumers in the Colorado River basin states of Arizona, Colorado, Nevada, New Mexico, Utah, and Wyoming, and represents the majority of the firm electric service (FES) customers of the CRSP. As such, CREDA and its members have a unique interest and role in issues associated with Colorado River and CRSP operations, specifically GCD operations. CREDA members are all non-profit entities, composed of municipalities, rural electric cooperatives, irrigation and electrical districts, state agencies, political subdivisions and tribal utilities and communities. Each CREDA member is an FES customer with a long-term contract with the Western Area Power Administration (WAPA) for the purchase of CRSP resources. These resources are used in part by CREDA member utilities to meet their obligation to serve the electrical needs of their customers. Electric service is not discretionary or a convenience. This service is essential to health and human safety.

CREDA appreciates the inclusion of our December 13, 2022 comment letter as part of the EA documentation. We offer the following general and specific comments for your consideration.

General Comments and Conclusions

A. The impacts of the Proposed Action (Action) to the human environment will be significant and cannot be supported by an Environmental Assessment (EA) and Finding of No Significant Impact (FONSI) for the following reasons:
   - The impact of bypassing hydropower production will cause a significant increase in replacement power costs for CREDA members with firm electric service (FES) contracts for power from CRSP facilities.

from CRSP facilities.

- The result of the Action will require WAPA and FES customers to purchase replacement power on the market, yet current projections indicate there may be little to no power availability on the market when the replacement power is needed.
- The source of replacement power, should any be available, will not be carbon free; thus the Action will further exacerbate the impacts of a warming climate.

B. The analysis in the EA is wholly inadequate in its identification and analysis of potential impacts from the Action.
   - There is no analysis on the availability of replacement power or on the impacts to the environment of purchasing replacement power (including impacts to the power grid and a warming climate).
   - The EA fails to meaningfully identify or analyze the impacts on the Upper Colorado River Basin Fund (Basin Fund) and the implications those impacts have on the ongoing operation of the CRSP facilities and programs it funds.
   - The EA fails to meaningfully identify or analyze the affordability of replacement power for FES customers (many of which are at risk or tribal communities).
   - The EA is solely limited to alternatives regarding variations of flows bypassing power production. There is no discussion of potential non-flow alternatives.
   - The EA fails to use the most current information regarding future hydrology and its impacts on hydropower production. Potential impacts of the Action cannot be analyzed in a vacuum. NEPA requires a disclosure of the cumulative impacts of the Action. In this case, Reclamation must analyze the impacts of the Action in light of the ongoing impacts to FES customers from the last 20 years of limited hydropower production and the resulting increased reliance on purchased power.

C. The EA fails to acknowledge how the impacts of this Action will be inconsistent with the "beneficiary pays" construct that has been the cornerstone of Reclamation law and policy for 120 years. Smallmouth bass were not introduced into the CRSP at either the request of, or to benefit, hydropower customers, yet the costs of actions to limit the range and impacts of these fish on native populations are being placed wholly at the feet of WAPA and its FES customers. This must be disclosed.

For these reasons, CREDA believes that the EA is legally inadequate and cannot be the basis for a FONSI.

Specific Comments

Chapter 1. Introduction

1) Section 1.2, page 1-1 describes uses of Lake Powell. As this EA targets operations of GCD, please revise the Background section to refer specifically to GCD's authorizing legislation and stated purposes – the 1956 Colorado River Storage Project Act (see also comment 3) below).

2) Section 1.2, page 1-3 refers to the Secretary's Designee's charge directing Reclamation and GCMRC to work with the Adaptive Management Work group "to develop flow options to disrupt or prevent spawning of smallmouth bass…..". Please include the additional charge in that directive, which was "to minimize impacts to other resources." (May 2022 Directive). None of flow options within the Action include an attempt to minimize impacts to the hydropower resource, notwithstanding viable option(s) were proposed by biologists and hydropower experts from WAPA during the summer and fall of 2022 (WAPA November 18, 2022 and December 15, 2022 letters).

3) Section 1.3, page 1-5. The Purpose and Need Statement is broad enough to include "changes in flow velocity" along with temperature-only focused hypotheses and experiments. (See also comment 9) below regarding alternatives.) As the EA describes an *experimental* action, and the Action is based solely on modeling, please consider reinstating the word "help" prior to "prevent the establishment of…". As Upper Division States TWG

representatives have stated, operational alternatives are not a panacea; fish exclusion should be an immediate priority; the EA is deficient in that more than a single focus (bypass flows) alternative should have been included. Reclamation should prioritize and expedite installation of its preferred prevention technology, and NPS should take action regarding the slough at RM 12, and continue addressing nonnative invasive species as required in its Expanded Non-Native Aquatic Species Management Plan.[1]

4) Section 1.4, page 1-5, 6. Supplementing comment 1) above, please broaden the description of the Colorado River Storage Project Act to refer to its authorized purposes and Section 5, and not just reference to the creation of the Basin Fund. In referring to the Grand Canyon Protection Act of 1992 (GCPA), please include the full mandate of the GCPA, which includes not only Section 1802(a) but Section 1802(b), which requires the protection, mitigation and improvement be done "in a manner fully consistent with and subject to the Colorado River Compact, the Upper Colorado River Basin Compact, the Water Treaty of 1944 with Mexico, the decree of the Supreme Court in Arizona v. California, and the provisions of the Colorado River Storage Project Act of 1956 and the Colorado River Basin Project Act of 1968 that govern allocation, appropriation, development, and exportation of the waters of the Colorado River Basin." Reference to the GCD AMWG should be corrected to refer to that body's responsibility to "Advise GCDAMP and the Secretary of Interior or their designee…. regarding GCDAMP priorities and policies, proposed changes to the criteria and operating plans for Glen Canyon Dam, and the implementation of resource management objectives, research studies, and environmental or cultural commitments" (ROD, page 14). The AMWG does not have any responsibility to "organize and coordinate dam operations." Finally, in describing the GCD LTEMP EIS, please revise the current text to reflect language from p.1 of the ROD: "The LTEMP will provide a framework for adaptively managing Glen Canyon Dam operations and other management and experimental actions over the next 20 years, consistent with the Grand Canyon Protection Act (GCPA) **and other provisions of applicable Federal law**." (emphasis added).

5) Section 1.7, p. 1-7: CREDA recommends including in Operational Guidelines, the text from the LTEMP ROD, page B-7, section 1.2: "Reclamation also will make specific adjustments to daily and monthly release volumes, in consultation with other entities as appropriate, for a number of reasons, including operational, resource-related, and hydropower-related issues. Examples of these adjustments may include, but are not limited to, the following: … For hydropower-related issues, adjustments may occur to address issues such as electrical grid reliability, actual or forecasted prices for purchased power, transmission outages, and experimental releases from other Colorado River Storage Project dams."

6) Section 1.8, page 1-8: The EA refers to Reclamation's close coordination with USFWS through the EA process, which is important. However, in reviewing the USFWS letter (Appendix C), we question whether the statement in the EA that refers to "a potential future decline in humpback chub that **would** occur if smallmouth bass are allowed to establish" (emphasis added) accurately reflects the Service's description of risk and threats (i.e., uncertainty).

Chapter 2. Proposed Action and Alternatives

7) The EA should be clear in its Purpose and Need Statement that the duration of the EA/Action is "up to three years", which is not stated until Chapter 2, section 2.2.1. CREDA's understanding is that since the Table 3-2 impacts are only for 5 months in 2023, the EA only analyzed impacts over the 5 summer months of 2023, and not over the period of the EA, three years. For all resources analyzed, that level of analysis is insufficient.

[1] *See:* ParkPlanning - Expanded Non-Native Aquatic Species Management Plan/EA (nps.gov)

8) Section 2.2, p. 2-1: The description of the Proposed Action with Flow Options (Action) was challenging to understand. Assuming that the last three bullets on page 2-2 are the key drivers, we have the following questions:
    a. Implementation of the experiment appears to be determined by temperatures at the Little Colorado River (LCR). Is it a model that makes that critical determination? Is that the referenced "adapted" model, and has that model been peer reviewed?
    b. Is it feasible, since such a significant experiment is being considered, to use actual temperature data as the trigger? As opposed to projections based on mean daily air temperature from Page, Arizona (77 miles from the LCR), and mean solar radiation from Williams, Arizona (90 miles from the LCR).
    c. Flow Option A, p. 2-4: what percentage of time does "almost always" refer to in achieving the target temperature with all 4 bypass tubes in use?
    d. If "no smallmouth bass have been detected below RM 0, then why not target RM 45. And how is "effective" quantified?
    e. Flow Option B, p. 2-6: this section refers to two flow spikes; yet, page 2-4 refers to "up to three 36-hour flow spikes". Please clarify.
    f. Flow Option C, p. 2-6: is there more recent data (besides 1945, 1957 and 1963) available? And to what degree of certainty can the statement be made that "achieving a cold shock down to RM 0 or RM 15 **would** still be effective at disrupting spawning (emphasis added). How is "effective" defined?
    g. Flow Option D, p. 2-8: What is the science basis (or data supporting) the statement "even if it is not possible to achieve a temperature of 13 C, the flow would likely disrupt spawning, even though data from the Yampa and Green Rivers suggests that smallmouth bass can continue to spawn when temperatures drop to 13.9 C".
    h. An adaptively managed experiment of this significance and uncertainty must include a *description of the proposed experiment*, *the time or frequency of implementation of the experiment*, and *the triggers or other conditions that must exist prior to implementation of the experimen*t. The experiment must also include a description of the *hypotheses that will be tested by the experiment and benchmarks or other identifiable criteria* that will allow the Secretary and interested parties to assess the *success or lack thereof*, *when an experiment or action must be terminated* because of *unacceptable impacts (as specifically defined*) to the listed humpback chub or other legally protected resources. Finally, any *monitoring* included in an implementation plan or experimental design must meet legal standards necessary to implement adaptive management, including monitoring of impacts to LTEMP resources[2].

9) Section 2.3, p. 2-9: Please describe the science basis for concluding without detailed analysis that a penstock only release "does not meet the project's purpose and need." A penstock only release *could* meet the purpose and need if the purpose had remained as it was provided to the AMWG Stakeholders, with the word "help" as a modifier to "prevent". Further, it appears this option was rejected for including one of the same objectives as the Action options: abandoning nests v. disrupting/disturbing spawning. Disrupting/disturbing spawning may have the potential of "high mortality of offspring", which is a secondary objective of disrupting/disturbing spawning. Page 3-7, describing the Action impacts on nonnative fish, is very clear: "All flow options are designed to inhibit smallmouth bass spawning, displace male smallmouth bass from guarding nests, or both". The EA should clearly explain why Option E was rejected for analysis based on the same criteria that is included in all flow options of the Proposed Action.

Chapter 3. Affected Environment and Environmental Consequences

10) Section 3.2.1, page 3-1: Has the population of humpback chub observed in the western Grand Canyon been factored into a risk assessment of smallmouth bass impacts to the chub? From the numbers of fish reported out

at the recent TWG and AMWG meetings, it seems logical that although the dynamics are not fully understood, that sheer numbers should moderate the risk.

11) Page 3-3: Since over 250 juvenile smallmouth bass were found throughout the Glen Canyon reach in 2022, and this number "suggests successful spawning", does that translate to "establishment", and if so, the Purpose and Need as drafted should be reconsidered. In addition, some less impacting actions/operations could be considered, assuming there is already establishment.

12) Section 3.2.2, page 3-6: This section also states that under Options C and D, the cold temperatures **would reach downstream** to the confluence of the LCR. How does that risk to the humpback chub compare to the risk of smallmouth bass traveling down to the LCR? Finally, how can effects to razorback suckers be characterized as "minor" if flow changes "inundate or desiccate backwaters"?

13) Page 3-8: Fish dispersal is a concern inherent to all flow options and "an important consideration for establishment". Flow spikes are identified with dispersal. We know from previous high-flow experiments (HFEs) that dispersal is a key concern. In fact, a decision was made in the fall of 2022 to not undertake an HFE due in large part to concern about nonnative fish dispersal. Is the statement that "green sunfish already occur throughout the Grand Canyon **in low numbers** accurate? Just because there may be "an overall lack of quantitative research on green sunfish movement or dispersal in response to flows", we know that green sunfish is a predator/competitor of humpback chub, and actions that will disperse more of this species should be reconsidered.

14) Page 3-9: The impacts of Flow Options C and D appear to be contrary to the objective of the last 3 years of the bug flow experiment. The flow spikes…."represent a disturbance that would scour benthic substrates and reduce the food-base abundance and biomass." How is this trade-off assessed and evaluated?

15) Section 3.3, page 3-11: CREDA submitted extensive comments during the LTEMP process regarding the cited 1987 Bishop study. CREDA's November 16, 2016 letter states in part: "The Fluctuation Index utilizes information derived from a 1987 study (Bishop et al),[3] which addressed recreational user preference for fluctuating flow levels. In that study, however, 10,000 cfs (*not* 8,000 cfs) was defined as "constant flows". We recommend reference to the 1987 study be removed, as it was mischaracterized in LTEMP, in favor of the work done in 2016 by Bari.

16) Section 3.4.2, page 3-20: We question whether volume of water released during flow spikes "would be within the range analyzed in the LTEMP Final EIS", if the analysis included "up to three years" of flow options B and D and the frequency of flow spikes contained therein.

17) Section 3.6, page 3-27: Please include reference to the September 2022 emergency power supply from GCD to California. Please remove the incorrect reference to the Grand Canyon Protection Act in the last sentence.

18) Page 3-30: Please remove the following sentence which is implied to be a citation from DOI 2016a, p. 3-204): "This type of operation creates large fluctuations in water releases, which has negative impact on environmental resources". The prior three sentences of that paragraph are accurate cites from page 3-204 of DOI 2016a. This last sentence is not.

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[2] *See:* TechGuide.pdf (doi.gov), p. 9; Interior Environmental Statement Memorandum No. ESM 13-11, January 7, 2013, p. 5

[3] *See* FEIS Appendix C, P. C-27, section 4.5

19) Page 3-31: The Power Marketing section of the EA and Section 3.6.2 Environmental Consequences Analysis should disclose the impacts based on WAPA's implementation of WAPA-199 on December 1, 2021. The EA must also address the Action's impact on replacement power availability during the summer months of the experiment. See NERC Summer Reliability Assessment 2022 at pp.5-6: "Drought conditions create heightened reliability risk for the summer. Drought exists or threatens wide areas of North America, resulting in unique challenges to area electricity supplies and potential impacts on demand: Energy output from hydro generators throughout most of the Western United States is being affected by widespread drought and below-normal snowpack. Dry hydrological conditions threaten the availability of hydroelectricity for transfers throughout the Western Interconnection. Some assessment areas, including WECC's California-Mexico (CA/MX) and Southwest Reserve Sharing Group (SRSG), depend on substantial electricity imports to meet demand on hot summer evenings and other times when variable energy resource (e.g., wind, solar) output is diminishing. In the event of wide-area extreme heat event, all U.S. assessment areas in the Western Interconnection are at risk of energy emergencies due to the limited supply of electricity available for transfer." This is not just an issue for WAPA, but for the FES customers and all other utilities in the West. A significant loss of generation from GCD will have significant financial impacts on WAPA and economic and financial impacts on WAPA's FES customers and *their* customers. The EA analysis does not quantify the impact of customers having to replace GCD generation with other resources. The analysis should include the impact on those customers that count their CRSP generation toward meeting their resource adequacy requirements, as well as include their CRSP generation in their greenhouse gas and Renewable Energy Certificates (RECs) reporting. Reduced and/or bypassed generation at GCD/CRSP has implications and impacts to both direct contracts of that/those resources as well as exchange agreements that rely on the output of that/those resources. Consideration of resource adequacy requirements, replacement resource availability, and contractual impacts impacting utilities' obligation to serve customers are essential elements that must be addressed in the EA's effects analysis. On September 28, 2022, CREDA submitted comments to Reclamation regarding potential fall experiments under LTEMP. These comments apply to every experiment or changed operation that may be considered for CRSP generating units.

20) Page 3-33: Please consider revising the last sentence to the following: The replacement power purchased by WAPA and its customers would likely be from carbon-emitting resources and would increase GHG emissions in the region. The EA should assess the impact of the Action on GHG emissions. Previous analysis showed that without GCD, an additional 2.4 million metric tons per 1,000 GWh would be emitted by the WECC."[4] Given the Departments of the Interior and Energy's commitments to maintain and expand renewable generation capacity, the importance of hydropower capacity to the overall power supply for the western United States, and the existing benefits of hydropower that avoids alternate fossil fuel greenhouse gas production[5], strong consideration should be given to the air emission impacts resulting from the Action. Please also include a sentence stating that WAPA and its customers may not be able to find replacement power, whether or not the Basin Fund has sufficient funds available, given resource scarcity during summer months. The paragraph referring to additional analysis for Flow Option A is based on outdated data, as confirmed at the AMWG meeting on February 16, 2023. A more likely scenario, based on recent market prices, is that the values included in the EA on hydropower/Basin Fund impacts are understated. Finally, the discussion of transmission congestion should be modified to remove statements about "reverse direction of historical operations" and "reversal of power;" these statements are confusing and inaccurate. New text should be provided by WAPA to reflect more current modeling by WAPA/NREL/Argonne and should state that societal effects **will** be felt across the Western Power Grid based on that analysis (emphasis added).

[4] *See* Scientific Certification Systems, Life Cycle Impact Assessment (LCIA) of Glen Canyon Hydropower Generation System Compared to the WECC Baseline; Conducted in accordance with ISO 14044 LCIA Framework and the Draft SCS-002 Life Cycle Metrics Standard, Type III Life-Cycle Impact Profile Declarations for Materials, Products, Services and Systems, March 2009, p ii

[5] *See* New Energy Frontier. Balancing Energy Development on Federal Lands. A Joint Report to Congress on Siting Energy Development Projects on Federal Lands. U.S. Department of Interior and U.S. Department of Agricultural. May 2011, pp. 28-31

21) Section 3.7, page 3-34: CREDA disagrees that *only* the recreation resource should be analyzed for environmental justice impacts. Impacts to CRSP hydropower customers, particularly the smaller municipal, rural and tribal customers, should be analyzed in the context of environmental justice. The Proposed Action may disproportionately affect these customers as they will be paying more for an essential service that is necessary for human health; the GHG emissions impacts resulting from replacement power sources may also have a disproportionate impact on these communities. This analysis is required by the EA. The LTEMP Appendix K included a fair amount of impact analysis to tribal customers, in particular. As post-WAPA-199 impacts are direct and immediate to these (and all other) FES customers, the EA should analyze those impacts.

22) Page 3-38: The affected environment should be revised to include the environmental justice populations represented by CRSP FES customers. See section D. of CREDA's December 13, 2022 letter, which is included in the Appendix to this EA.

23) Page 3-39: In a post-WAPA-199 world, direct and immediate impacts are likely borne by *all* WAPA FES customers, not just the "largest of WAPA's customers". The impact assessment should be based not only on the size of an FES customer's CRSP allocation, but also the proportion of its CRSP allocation to its total resource mix. In addition, the ability of an FES customer to access market resources for replacement power is also a factor.

As representative of the Secretary of the Interior, Reclamation has the responsibility to fulfill the Secretary's obligation to meet multiple and sometimes competing statutory requirements applicable to the operation of GCD and the exercise of other authorities as required by the provisions of the GCPA. The United States has described the relationship between the objectives of the GCPA and the CRSP as being "in addition to rather than in substitution of the Secretary's obligations concerning the operations of Glen Canyon Dam for hydropower and other project purposes."[6] "The U.S. District Court for the District of Arizona further clarified that the broadly worded provisions of the Colorado River Storage Project Act (CRSPA) and GCPA impose on the Secretary an obligation to balance many different interests in operating Glen Canyon Dam. The Secretary must continue to recognize that power production is still a primary purpose of the Dam that must be balanced against other purposes, statutory requirements, and water delivery obligations as (s)he considers actions to implement the GCPA."[7] In fact, the failure to incorporate within the EA an experiment that provides a less impacting and more balanced approach to smallmouth bass experimentation is arbitrary and capricious given statutory requirements.[8] As Judge David Campbell stated in the Grand Canyon Trust v. United States case: "The Bureau of Reclamation, as the operator of the Dam, has a complex set of interests it must balance in operating the Dam. Those interests include not only the endangered species below the Dam, but also tribes in the region, the seven Colorado River basin states, large municipalities that depend on water and power from Glen Canyon Dam, agricultural, Grand Canyon National Park and national energy needs at a time when clean energy production is becoming increasingly important."

Leslie James
Leslie James
Executive Director

Cc: CREDA Board
Commissioner Camille Touton
WAPA Administrator Tracey LeBeau
Wayne Pullan – Reclamation UC Region
Rodney Bailey – WAPA CRSP Management Center

[6] *See Grand Canyon Trust v. US Bureau of Reclamation,* 623 F.Supp.2d 1015, 1036, Federal Defendants' Reply Memorandum In Support of Cross Motion for Summary Judgment on Claims 6-8 at p. 26, lines 25-27, (February 20, 2009)
[7] *See* Colorado River Basin State Representatives to LTEMP EIS Scoping, January 31, 2012
[8] CREDA raises here the issue of omission of a statutory requirement from the alternatives identified in a NEPA analysis and reserves the right to litigate the compliance with applicable statutory requirements.