



LOUP POWER DISTRICT

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September 21, 2016

Honorable Kimberly D. Bose, Secretary
Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Subject: Loup River Hydroelectric Project
Comments on Final Environmental Assessment
FERC Project No. 1256-031

Dear Secretary Bose:

Loup River Public Power District (Loup Power District or District) herein electronically files comments on the Commission staff's Final Environmental Assessment (EA) for the relicensing of the District's Loup River Hydroelectric Project, FERC Project No. 1256 (Project).

In summary, the District provides the following comments on the Final EA and proposed draft license articles:

- Proposed Draft License Articles 404 and 406 jeopardize the District's water right and circumvent water rights administration in the State of Nebraska.
- Proposed Draft License Articles 404 and 406 are arbitrary and capricious and are not supported by the record of this relicensing proceeding.
- Commission staff has failed to consider the significant operational impediments that restrict the District's ability to implement and comply with proposed flow modifications contained in proposed Draft License Articles 404 and 406.
- Commission staff did not adequately address the District's previous comments on the Draft EA.

These comments are discussed in greater detail in the following sections.

Proposed Draft License Articles 404 and 406 jeopardize the District's water right and circumvent water rights administration in the State of Nebraska.

In response to WU-2, the Commission staff concludes that "Our recommended flows for the project would not interfere with the State's water rights. The stretch of the lower Platte River from RM 100 to RM 33, where Nebraska Game and Parks has an instream flow appropriation, is downstream from where the power canal discharges into the lower Platte River, meaning the project (which is non-consumptive), could not affect downstream water rights. Also, Nebraska Game and Parks Commission filed comments on the draft EA in support of our recommended

flows.” The Commission staff’s response does not address the District’s concerns expressed in the June 23, 2014, comments on the Draft EA regarding Nebraska Water Law, and the impact the proposed draft license articles have on the District’s water right, thus requiring the District to further elaborate.

First, the fact that the Nebraska Game and Parks Commission (NGPC) supported the recommended flows is irrelevant to the impact on the District’s water right—the Nebraska Department of Natural Resources (NDNR) is the state agency responsible for administering the state’s water rights, not NGPC. In addition, the NGPC instream flow right is downstream of the Tailrace Canal. The District’s comments are in regard to administration of its water right with respect to water right holders upstream of the District. Reference to the NGPC water right was provided to demonstrate that there is a mechanism in place by which an instream flow can be obtained in the Loup River bypass reach.

Nebraska water law adheres to the prior appropriation doctrine, which includes a priority and preference system. Priority refers to the date on which the appropriation was granted while preference refers to the type of use associated with the appropriation. With respect to priority “As between appropriators, the one first in time is first in right” (Nebraska Revised Statutes [Neb. Rev. Stat.] §46-203¹). Additional clarification between priority and preference is provided in Neb. Rev. Stat. §46-204, which states:

The right to divert unappropriated waters of every natural stream for beneficial use shall never be denied except when such denial is demanded by the public interest. Priority of appropriation shall give the better right as between those using the water for the same purposes, but when the waters of any natural stream are not sufficient for the use of all those desiring the use of the same, those using the water for domestic purposes shall have the preference over those claiming it for any other purpose, and those using the water for agricultural purposes shall have the preference over those using the same for manufacturing purposes.

Further definition is provided with respect to power generation by Neb. Rev. Stat. §70-668, which states:

In applying the provisions of law relating to the appropriation of water, priority of appropriation shall give the better right as between those using the water for the same purpose, but when the waters of any natural stream are not sufficient for the use of all those desiring to use the same, those using the water for domestic purposes shall have preference over those claiming it for any other purpose. Those using the water for agricultural purposes shall have the preference over those using the same for manufacturing purposes, and those using the water for agricultural purposes shall have the preference over those using the same for power purposes, where turbine or impulse water wheels are installed.

¹ See <http://www.dnr.nebraska.gov/Media/Default/DNRGeneral/Publications/SWstatutes2016.pdf>.

In instances where a senior appropriator by priority is subordinate to a junior appropriator by preference, Neb. Rev. Stat. §70-669 states that “No inferior right to the use of the waters of this state shall be acquired by a superior right without just compensation therefore to the inferior user. The just compensation paid to those using water for power purposes shall not be greater than the cost of replacing the power which would be generated in the plant or plants of the power user by the water so required.”

As noted above, NDNR is responsible for administering water rights in Nebraska based on the priority and preference system. As stated in correspondence to the District from NDNR:

All surface water permits have a stated beneficial use, maximum allowable diversion, and priority date based on the date the application for the permit was received at the Department [NDNR]. An appropriation with an earlier priority date is considered to be senior to an appropriation with a more recent, junior, priority date. When there is not sufficient flow in the river for all appropriators, any senior appropriator may call the Department [NDNR] and ask that the Department [NDNR] administer the river to provide water to the senior appropriation. To provide the required amount of water to the senior appropriation, the Department [NDNR] will close a sufficient number of junior appropriators to provide the required amount of flow to the senior appropriator. Before issuing closing notices to junior appropriators, the Department [NDNR] will first check the river flow at the diversion point for the senior appropriator to determine whether in fact the flow is insufficient to meet the demand. The Department [NDNR] will also make sure that if water is provided to the senior, it will be beneficially used and not simply wasted past the diversion point. The Department [NDNR] will not close a junior appropriator simply to see water go unused by the calling senior.²

The District has placed a “call” on the Loup River every year since 2008 and as far back as 1955. This means that when there are insufficient flows to meet the District’s appropriation, NDNR will close junior appropriators until the District’s appropriation is met. The junior user then makes a decision to 1) not use the water, or 2) compensate the District for lost generation. For example, if a junior appropriator (an irrigator) with preference over the District uses all or a portion of its water right for irrigation, the District receives compensation through an interference agreement in accordance with Neb. Rev. Stat. §70-669. This allows the District to be compensated for the lost power generation due to a junior’s use under the preference system. Currently, the District has interference agreements with 926 upstream irrigators.

The Commission staff’s proposed Draft License Articles 404 (Minimum Flows in the Loup River Bypassed Reach) and 406 (Maximum Diversion of Flow into the Loup Power Canal) will not only infringe on the District’s water right, but it will also likely reduce the amount of water available in the Loup River bypass reach and the lower Platte River.

² NDNR, 2007, letter from Ann Bleed, NDNR, to Surface Water Appropriators [including Loup Power District], May 25.

Under Nebraska water administration, if water is to be bypassed as mandated by the Commission staff's proposed Draft License Articles 404 and 406, NDNR will not be able to administer the call on the river; the test for closing the junior appropriator cannot be met because water bypassed is not being used for its stated beneficial use.³ Without NDNR water administration:

1. The interference agreements are no longer enforceable³;
2. The appropriators junior to the District can use all of their appropriation for a consumptive use (irrigation), as opposed to using only a portion of their appropriation, or none at all, under NDNR water administration of a call on the river;
3. Water downstream of the diversion will not be guaranteed to remain in the Loup and Platte Rivers for habitat improvement under Nebraska water law and will be available for new water right under Neb. Rev. Stat. §46-204;
4. Increased upstream consumptive use, and potential new consumptive uses, will ultimately result in less water in the Loup River bypass reach and lower Platte River.

The District's water right to divert 3,500 cubic feet per second (cfs) for the beneficial use of hydropower generation is dated September 15, 1932. During times when insufficient flow (greater than 3,500 cfs) exists in the Loup River, NDNR will close junior appropriators, or the District will be compensated for lost generation, as per administration policy of NDNR. However, if required by the proposed draft license articles to bypass flows, the District would not be able to request closure of the junior appropriator or receive interference agreement compensation because the bypassed flows will not be used for their stated beneficial use, that being hydropower generation. As stated by NDNR, "The Department [NDNR] will also make sure that if water is provided to the senior, it will be beneficially used and not simply wasted past the diversion point. The Department [NDNR] will not close a junior appropriator simply to see water go unused by the calling senior."³ Therefore, the District's water right will be compromised by the Commission staff's proposed Draft License Articles 404 and 406.

In addition, consumptive use consequences would occur with proposed Draft License Articles 404 and 406. If the bypassed flows are not used for their intended purpose, NDNR will not close the junior appropriator or initiate the interference agreement for the upstream user, both of which would curtail upstream water use. Therefore, proposed Draft License Articles 404 and 406 will allow the upstream users to divert and use their full appropriation of water for irrigation, which is a consumptive use, as opposed to those flows, in full or a portion, being used downstream for hydropower generation, which is a non-consumptive use. Doing so will ultimately result in less flow in the Loup and Platte rivers.

In addition, any bypassed flows required by the proposed draft license articles would not be "protected"; those flows could be appropriated to an applicant showing a beneficial use. For example, a surface water irrigator could apply for and be granted a surface water right for part or all of the proposed bypassed flows downstream of the diversion structure per Neb. Rev. Stat. §46-2. As stated in the District's June 23, 2014, Draft EA comment letter, the State of Nebraska has a mechanism in place for USFWS through NGPC to obtain an instream appropriation for

³ NDNR, 2007, letter from Ann Bleed, NDNR, to Surface Water Appropriators [including Loup Power District], May 25.

recreation or fish and wildlife. The process is outlined in Neb. Rev. Stat. §46-2,107 through §46-2,109, and would protect the flows under Nebraska water law. This would be similar to the instream flow right that NGPC currently holds in the lower Platte River.

As demonstrated, the proposed draft license articles requiring bypassed flows will jeopardize the District's water right and circumvent administration of Nebraska State Water Law. Requiring bypass flows will compromise the District's water right, will not allow receipt of their appropriated flow or compensation under Nebraska water law, and will ultimately reduce the amount of water in the Loup River bypass reach and the lower Platte River. Furthermore, statutes are in place that USFWS, in coordination with NGPC, can employ to obtain a water right that will serve their needs without jeopardizing the District's rights.

Proposed Draft License Articles 404 and 406 are arbitrary and capricious and are not supported by the record of this relicensing proceeding.

Throughout the Draft and Final EAs, Commission staff has repeatedly articulated its view that proposed Draft License Articles 404 and 406 would provide geomorphological benefits that would improve on-river habitat for interior least terns and piping plovers. Nevertheless, proposed Draft License Articles 404 and 406 are arbitrary and capricious because the Draft and Final EAs fail to show that current Project operations are harmful to either species or that the changes would benefit the species. Furthermore, the recommendations are made by ignoring or dismissing study results and substantial portions of the record, which includes over 4,500 pages of data that document a lack of Project impact on these threatened or endangered species, and by misstating and misinterpreting the study results.

Furthermore, the Commission staff's conclusions regarding interior least tern and piping plover are not supported by data, other evidence in the record, or meaningful analysis. Specifically, the arguments the Commission staff presents to support its conclusions rely on very little biology or biological data. Instead, these arguments rely on linking the putative effects of Project operations and maintenance to changes in the hydrogeomorphology of the Loup River, the Loup River bypass reach, and the lower Platte River. The Final EA makes similar arguments to support its claims that the Commission's staff alternatives will "enhance" conditions in the Loup River, the Loup River bypass reach, and the lower Platte River, and that piping plover and interior least tern will benefit from these "enhancements." However, these arguments do not rely on data or other record evidence on the probable bio-ecological responses of piping plover or interior least tern to changes in hydrogeomorphology; instead, the Final EA treats potential changes in sandbars as evidence of real changes in the number of piping plover and interior least tern nests. Furthermore, the Final EA fails to discuss the expected magnitude of any effects (that is, how many birds, bird nests, or nestlings are likely to die, experience an adverse effect, or benefit from a staff-recommended measure).

In addition to failing to provide evidence to support its arguments, Commission staff falsely claims that the Endangered Species Act (ESA) requires it to protect or mitigate for effects on

on-river nesting habitat. Specifically, in response to TE-10, Commission staff stated that Section 7(a)(2) requires it to protect or mitigate for on-river nesting habitat. This is incorrect. Section 7(a)(2) requires federal agencies to ensure that their actions are not likely to jeopardize the continued existence of endangered or threatened species in the wild or result in the destruction or adverse modification of critical habitat for these species. The USFWS designated critical habitat in Nebraska for piping plovers in a Final Rule published on September 11, 2002, and this might have provided the limited support for the Commission staff's arguments. However, the Nebraska portion of the critical habitat, excluding critical habitat designated on the Missouri River, was vacated by the U.S. District Court on October 13, 2005,⁴ so there is currently no federally designated critical habitat for the piping plover within the State of Nebraska or in the Study Area. As a result, neither the "essential features" of the critical habitat designation nor the "destruction or adverse modification" standard applies to the Project.

Although the jeopardy standard can consider habitat-related effects, the standard still focuses on whether habitat-related effects or other effects increase a species' likelihood of surviving and recovering in the wild by reducing their reproduction, numbers, or distribution.⁵ Given that the jeopardy standard focuses on interior least tern and piping plover occurrences "in the wild;" that on-river and off-river nesting habitats are both located "in the wild;" and that the reproductive performance of both species on off-river habitats is equivalent to or better than their reproductive performance on on-river habitat, the jeopardy standard would not distinguish between the two habitats. Even USFWS's compensatory mitigation policy for endangered species⁶ would force Commission staff to "ignore the adverse effect to on-river habitat in favor of protecting or enhancing off-river habitat."

The Final EA makes eight claims related to Project effects on piping plover and interior least tern that are weak or unsupported by data, other record evidence, or meaningful analysis. The District finds the Final EA to be "arbitrary and capricious" because it fails to consider important aspects of the problem (relevant record evidence), it offers explanations for conclusions that run counter to the record evidence before the Commission staff, and it fails to articulate a rational connection between the facts in the record and its conclusions. The eight claims are the following:⁷

1. Activities related to the continued maintenance of the project, such as dredging and sand removal, affect least tern and piping plovers in the north SMA [sand management area] by inundating nests or individuals with dredged material, or disturbing site selection, reproduction, or brooding.
2. Activities related to the continued operation of the project, such as peaking, would affect least tern and piping plover nesting habitat downstream of the tailrace return by continuing to erode sandbar habitat.

⁴ See U.S. District Court for the District of Nebraska, October 13, 2005, Nebraska Habitat Conservation Coalition (P) v. U.S. Fish and Wildlife Service (D). Case: 4:03-cv-03059-LES-DLP. Document #: 53. Date Filed: 10/13/05.

⁵ See 50 Code of Federal Regulations 402.02, definition of "jeopardize the continued existence of."

⁶ See 81 Federal Register 61032, September 2, 2016.

⁷ See the Final EA, page xxviii.

3. Additionally, the diversion of water from the Loup River into the power canal affects least tern and piping plover nesting habitat in the Loup River bypassed reach by restricting sandbar and channel-forming flows and preventing the scouring of sandbar vegetation, which are necessary for forming favorable nesting habitat.
4. The proposed suspension of dredging activities in the settling basin from late May through August would protect least tern and piping plover using the north SMA during their nesting period by reducing disturbances to the nesting area.
5. The staff-recommended minimum flow releases into the Loup River bypassed reach would also enhance downstream habitat for the least tern by improving the availability of food sources in the fish community.
6. The staff-recommended maximum diversion of 2,000 cfs into the power canal from March 1 through June 30 would increase the water in the Loup River bypassed reach which would enhance habitat conditions favored by the least tern and piping plover by promoting channel forming and sediment transport mechanisms.
7. Implementing a least tern, piping plover, and red knot management plan would establish management protocols for the north SMA to enhance the protection of least tern and piping plover nesting habitat.
8. Although implementing the staff-recommended measures would minimize potential project-related effects on the least tern and piping plover, relicensing the project is likely to adversely affect these species because continued operation would continue to affect the nesting habitat of the species in the Loup River and lower Platte River.

The arguments Commission staff presents to support these claims do not rely on data or other evidence on the probable responses of piping plover or interior least tern to Project effects. In addition, the Final EA fails to discuss the expected magnitude of any effects (that is, how many birds, bird nests, or nestlings are likely to die, experience an adverse effect, or benefit from a staff-recommended measure). Instead, the Final EA presents data on bird counts or nest productivity that seem intended to create the appearance of biological analysis and deliberation without the reality of it.

The Final EA fails to use biological data available in the record to support the Commission staff's analyses. Commission staff's second claim illustrates this problem: "activities related to the continued operation of the project, such as peaking, would affect least tern and piping plover nesting habitat downstream of the tailrace return by continuing to erode sandbar habitat." Rather than estimating the number or proportion of piping plover or interior least tern nests that are expected to lose nesting habitat by erosion of sandbars, the Final EA argues only that 1) diurnal flow fluctuations increase the wetted fringe of sandbars and 2) that wetted fringing can reduce sandbar size and cause steeper side slopes. The use of the word "can" is important because it implies that the reduction in sandbar size and steeper side slopes are two of several possible outcomes. Nevertheless, the Final EA does not explain why this "possible" outcome is expected to occur at all, much less expected to occur with sufficient frequency to cause sandbars to erode sufficiently to no longer serve as habitat for piping plover or interior least terns or to cause

pipng plover and interior least tern nests to be inundated in numbers sufficient to warrant a management response.

Data on inundation of interior least tern and piping plover nests below the Project Tailrace are available in the USFWS's Draft Biological Opinion (DBO) and in the FERC record, which the Final EA ignores, and these data do not support the Final EA's claim. For example, the Final EA appears to ignore the fact that, in most years (4 of 7 years, or 57 percent), no interior least tern nests have been lost to inundation and that piping plover nests have been inundated in only 2 out of every 3 years. More importantly, these analyses establish only that there is a chance of interior least tern nests being inundated in the lower Platte River. Because nests can be inundated for reasons unrelated to Project effects (it may have occurred even without the Project), they do not establish that Project operations caused the nests to be inundated.

The examples in the previous two paragraphs illustrate that the Commission staff's Final EA appears to have ignored data that were available and relevant to the issues the Final EA addressed. The Final EA also neglects a wide variety of other data that may have led Commission staff to different conclusions. Commission staff ignored data that would establish that differences in the number of piping plover and interior least tern nests above and below the diversion are not statistically different from zero (that is, the differences can be explained as a product of year-to-year variation); that the USFWS expected an average of 0.017 piping plover nests to be inundated by hydrocycling associated with current Project operations, or about 1 to 2 nests every 100 years; and that the data on the frequency and density of piping plover nests are insufficient to establish that the Project adversely affects piping plover nesting in the lower Platte River. These data suggest that the link between Project operations and the nesting success of piping plover and interior least tern is, at best, weak, and if the Project has an effect, that effect appears to be very small.

Similarly, the Final EA appears to neglect data from general and specific studies of sedimentation patterns, alternative operations and sediment management, and flow depletion and flow diversion that the District conducted as part of the relicensing process—and that are in the record for this relicensing proceeding. Data from these studies refute conclusions the Final EA reaches about sediment deficits in the Tailrace Return, sediment coarsening or degradation, undermining associated with the Tailrace Weir, influence of increased sediment transport on sandbar maintenance, and patterns of degradation/aggradation in the Loup River bypass reach and the lower Platte River. The Final EA also neglects or ignores the Platte River Recovery Implementation Program (PRRIP) Tern and Plover Habitat Synthesis Chapters.⁸

The Commission staff's analysis ignores research from the PRRIP Tern and Plover Habitat Synthesis Chapters that present significant scientific evidence that flow and sediment management strategies identical to those included in staff-recommended alternatives "cannot successfully manage flow and sediment to create and maintain suitable in-channel nesting

⁸ PRRIP, 2015, Final Statement – PRRIP Tern and Plover Habitat Synthesis Chapters, available online at https://www.platteriverprogram.org/PubsAndData/ProgramLibrary/PRRIP%202015_Tern%20and%20Plover%20Habitat%20Synthesis%20Chapters.pdf.

habitat” in the Loup and lower Platte River reaches.⁹ The PRRIP analysis considers the implementation of short-duration high flows (5,000 to 8,000 cfs for 3 days) and its ability to produce suitable sandbar habitat for interior least tern and piping plover nesting in areas of sediment balance. Wetted width was not a parameter of concern in this analysis, but rather the ability to create suitably high sandbars in channel widths suitable for nesting. This study compared channel width and nesting colony incidence in the lower Platte River, Loup River, and Niobrara River segments. This comparison indicated that 70 percent of nest sites occurred in channels with a maximum unvegetated width greater than 1,200 feet. The Loup River does not have these widths (1,000 feet upstream, 600 feet downstream). This study concluded that the short-duration high flows were not of the size to produce sandbars exceeding the minimum habitat height criterion.

The Commission staff’s response to comment TE-13 fails to address the District’s comprehensive assessment of the relevance of the PRRIP findings of years of attempting to create instream habitat using flow and sediment management (FSM) techniques. The synthesis report concludes that all efforts to prove the viability of the methods failed in that reach. Further, the synthesis report itself makes numerous mention of surrogates in, and relevance to, the Loup and lower Platte Rivers. The District clearly demonstrated the relevance of the synthesis report’s findings to the flow and sediment regulations proposed in the Final EA. Assumptions regarding sandbar mechanics that were found to be false in the Central Platte River are the same assumptions inherent in the statement in the Final EA in response to comment TE-3 that the 2,000 cfs ceiling on diversions will “allow for channel-forming flows” in the bypass reach, which are assumed to be, but not proven to be, linked to enhanced instream habitat.

The District contends that 1) FSM failed in the Central Platte River, and 2) the specific flow and sediment operating rules proposed for this license are clearly dependent on FSM assumptions such as sandbar heights reached, so therefore, 3) all the conclusions about, and regulations associated with, attempting to manage in-stream bed forms and regime channel dimensions using failed FSM assumptions should be excluded from the Final EA. The Final EA contends that the failed FSM experiments in the Central Platte River are not analogous to the subject reaches, using the claim that “less-altered-flows” are not the same as purge flows. The most significant finding of the PRRIP synthesis report has nothing to do with purge versus less-altered flows. The finding that bars do not build to the level of the water surface under any flow regime, altered or purged, was a significant finding in the report. It is clear that by continuing to require additional flows to build habitat, USFWS and Commission staff have not abandoned that theory although that theory has been disproven by science. The District does not accept the dismissal of the relevance of the synthesis report findings based on a poor and unscientific “analogy.”

The Commission staff’s responses state that “increased flows in the bypass reach ... are expected to improve channel widths and sandbar positions.” Clearly this describes FSM and relates it to assumed impacts on habitat, so the Commission staff cannot argue that FSM is not inherent in the proposed draft license articles. Any statement about the morphological outcome of increased flows is provable by using FSM calculations. The attempt to wipe FSM findings off the table is

⁹ Ibid. Executive Summary, page 1.

an attempt to escape the implications of those findings in the synthesis report. The best available technology (BAT) on flow and sediment mechanics in any part of the Platte or Loup rivers is described in the synthesis report, and the District believes that BAT rules apply. Ignoring the synthesis findings or dismissing them so weakly is arbitrary and capricious.

In addition, although the Final EA acknowledges that inconsistent sampling methods and a suite of confounding variables may produce statistically insignificant results, the Final EA neglects those data rather than recognizing that those data can still be used to estimate the practical significance or *size* of Project effects on piping plover and interior least tern nesting. For example, meta-analyses of the data available suggest that an about 28.3 percent of interior least tern nests (95% CI = 19.2 to 39.6%) were lost each year to inundation between 2008 and 2014. In its DBO on the Project, analyses of these data led USFWS to conclude that hydrocycling associated with current Project operations would inundate an average of 0.017 piping plover nests per year, or about 1 to 2 nests every 100 years.

Finally, throughout the Final EA, Commission staff makes numerous claims and reaches numerous conclusions related to piping plover and interior least terns that conflict with the available record evidence or that have little or no support in evidence. These available data suggest that links between Project operations and the nesting success of piping plover and interior least tern are weak, and any Project effects appear to be very small. Nevertheless, the Final EA concludes that these effects are large enough to warrant changes in Project operations and that staff recommendations would “*enhance* habitat conditions favored by the least tern and piping plover by promoting channel forming and sediment transport mechanisms” (emphasis added).

Without data or other evidence, Commission staff has no support for its claim that the proposed Draft License Articles “benefit” interior least tern or piping plover and that these “benefits” are greater than those provided by the District’s proposal. Without data or other evidence, there is no support for Commission staff’s claim that the staff-recommended minimum flow releases into the Loup River bypass reach would *enhance* downstream habitat for interior least terns by improving the availability of food sources in the fish community; that the staff-recommended maximum diversion of 2,000 cfs into the power canal from March 1 through June 30 would *increase* the water in the Loup River bypass reach, *which would enhance habitat conditions favored by the interior least tern and piping plover*; or that implementing an interior least tern, piping plover, and red knot management plan would *enhance* the protection of interior least tern and piping plover nesting habitat.

Commission staff’s conclusions are not well-reasoned, are not supported by record evidence, and are not well-defended. The Final EA analysis is “arbitrary and capricious” because the Final EA fails to consider available data; the available data support different conclusions than the Final EA reaches; and the Final EA fails to articulate how the conclusions it reached about Project effects and staff-recommended alternatives logically extend from the evidence, particularly given that the Final EA neglects the data available in the record and presents no other record evidence that supports its conclusions.

Commission staff has failed to consider the significant operational impediments that restrict the District's ability to implement and comply with proposed flow modifications contained in proposed Draft License Articles 404 and 406.

In responses to PO-3, PO-4, and PO-6, the Commission staff dismisses or trivializes the District's stated operational impediments to implementing the flow modifications included in the proposed draft license articles. It is clear from the response that the Commission staff does not fully understand the Project's infrastructure and the operating restrictions inherent to that infrastructure. In addition to providing the detailed concerns listed below, the District invites Commission staff to visit the Project to observe actual operations to gain a better understanding of the operational constraints of the Project.

The District provided substantial information as to why the current infrastructure of the Project could not support instantaneous measurements, and could not provide any data when the gage was affected by ice, to remain in compliance with staff-proposed Draft License Articles 404 and 406.¹⁰ The Commission staff responded stating that the District's operations require precise controls so as to 1) not exceed the canal capacity, 2) provide water to those entities having water rights, and 3) meet the demand for Project power. In addition, the Commission staff stated that the District did not identify any operational constraints with the District's 75 cfs minimum flow proposal. The Commission staff also indicated that the flow monitoring location is open for discussion in developing the Operation Compliance Monitoring Plan so as to alleviate ice condition concerns on existing U.S. Geological Survey (USGS) gages.

The District does not have the infrastructure to operate the canal in a precise manner, nor is precise operation required with respect to meeting water demands of the canal irrigators or power production, precision that is also not needed to provide assumed environmental benefits from Project operations, as demonstrated in the following paragraphs.

As stated in the District's June 23, 2014, Draft EA Comment letter and Attachment A of the June 1, 2015, DBO comment letter, the operation of the headworks is an art, not a science. The amount of diverted flow entering the canal is controlled by the Headgate Operator based on extensive experience relating the staff gage reading at the intake structure, the openings of the intake gates, and the flow measured at the USGS gage at the skimming weir (USGS Gage 06792500, Loup River Power Canal near Genoa, NE), which is located 2 miles downstream of the intake structure. The diversion amount is largely dependent on flow upstream of the intake structure and the amount of sediment accumulated at the headgates. Given the dynamic nature of the flows and the nature of sediment buildup upstream of the headgates, there is no known or calculable combination of gate openings (intake or sluice gates) and staff gage readings that will allow the Headgate Operator to produce a given instantaneous flow rate in the canal or bypass

¹⁰ See the District's June 23, 2014, comments on the Draft EA; Attachment A of the District's June 1, 2015, comments on USFWS's DBO; and the District's November 5, 2015, comments on the proposed draft license articles.

reach. In addition, there is no method to gradually reach but never exceed a 2,000 cfs diversion, or to gradually reach but never be lower than the minimum bypass amount.

For example, in those instances where rising flow during and after a runoff event nears the 3,500 cfs capacity, the Headgate Operator will initiate closing the gates so that flows stay below capacity to ensure safe operations. This process is iterative in nature and typically takes several hours, making it far from precise and subject to potential compliance violations with a requirement for instantaneous readings. The operator starts by adjusting the gates based on the rate of rise (or fall) of the staff gage reading at the headgates. Over the next several hours, the Headgate Operator will continue to adjust the gates based on visual observations of the stage in the settling basin. This is necessary because it takes approximately 3 hours of travel time for the gate-adjusted flows to be measured at the skimming weir gage. Once that gate-adjusted flow feedback is available to the Headgate Operator, additional adjustments are made to get within a reasonable flow to allow for safe Project operation.

This same imprecise operational procedure is all that is available to the District's Headgate Operator to remain in compliance with proposed Draft License Articles 404 and 406. If the District is required to comply with the proposed limits, the only measurement procedure available will result in continuous under-diverting or over-bypassing of flow. By virtue of the feedback-based operating procedure and the absolute nature of an instantaneous flow, the diversion will always need to be substantially less than 2,000 cfs, and the bypass flow substantially greater than the minimum. Once the Headgate Operator notes that the canal flow during and after a runoff event is approaching the new limit, flows could be adjusted only to within a few hundred cfs of 2,000 cfs at best. There is no exact setting of the gates and skimming weir readings to produce a specific flow, so significantly lower instantaneous and long-term diversion rates would be imposed. The Headgate Operator would need to make continuous, more-than-conservative adjustments in order to stay below the proposed limit and certainly not on the order of just a few tens of cfs.

Because of the inherent lack of precision in this process, the proposed limitation will require the District to ALWAYS operate under 2,000 cfs, or over the minimum bypass flow, and likely several hundred cfs below or above the maximum and minimum, respectively. Thus, in order to avoid noncompliance, over-scrutiny and over-adjustment of the gate openings would result in forcing the Headgate Operator to err greatly on the side of meeting any license articles, resulting in significant and unnecessary loss of power production and revenues.

Relocating the USGS gage closer to the gates accomplishes nothing in this regard. New gages would absolutely have lower ratings (on the good, fair, poor scale) and greater uncertainties than long-standing ones. New gages cannot be installed and rated overnight, or even over several years. Among other factors, a valid rating is not just a function of the number of measurements. To illustrate, the records for the USGS gage on the Loup River near Genoa show that there were 1,727 streamflow measurements taken between August 1928 through early August 2016. Even with this extensive record of measurements, the individual readings are still most often rated by the USGS field crews as giving "fair" or "poor" measurements. "Good" ratings are relatively rare in the record. A "good" and "fair" rating indicates that about 95 percent of the daily

discharges are within 10 and 15 percent of the true value, respectively. Records that are considered to be less accurate are rated “poor.”¹¹

Further, relocating the gages closer to the diversion structure addresses only one of the eight significant technical objections raised by the District in Attachment A of its June 1, 2015, comment letter on USFWS’s DBO. It appears that Commission staff either ignored or chose not to comment on the other seven items when it decided that meeting the 2,000 cfs and bypass flow criteria does “not require precision to maintain the flow.”¹² The District believes that Commission staff cannot disregard the other seven facts, and then attempt to dismiss all eight with a simple “move the gages” solution.

Relative to meeting the needs of the irrigators having water rights tied to the diversion structure, as listed in FLA Exhibit E, Table E-39, the total allocated annual diversion for irrigation is 70.7 cfs. A standardized agreement between each irrigator and the District provides for safe and reasonable access to water in the Loup Power Canal. There is no guarantee of water from the District. Given the small amount of irrigation water used relative to the amount diverted, there is no need for precise flow measurements for the irrigator.

The District generates electricity based on the amount of water available and the ability to take water into the canal. The District does not increase or curtail the flow amount in order to meet a power demand; rather, electricity generated is based on the amount of flow that has been diverted.¹³ Again, there are no precise measurements involved.

Finally, given the noted operational constraints, the District proposed an alternative measurement that consisted of a 3-day rolling average at the USGS gage located in the Loup River near Genoa (USGS Gage 06793000, Loup River near Genoa, NE), with no single daily average being below a prescribed amount. The proposed alternative was provided in Attachment A of the District’s November 15, 2015, comment letter on proposed draft license articles. Commission staff did not address the District’s proposed draft license article modifications.¹⁴

The District is agreeable to using the USGS gage on the Loup River near Genoa for monitoring (though it cannot operate using instantaneous measurements or when there are ice conditions). Regarding Commission staff’s flexibility on monitoring location, it does not matter where a gage is placed along the Loup River; it will be subject to ice conditions in December, January, and February, as evidenced by the instantaneous flow measurements in the following graphic. This

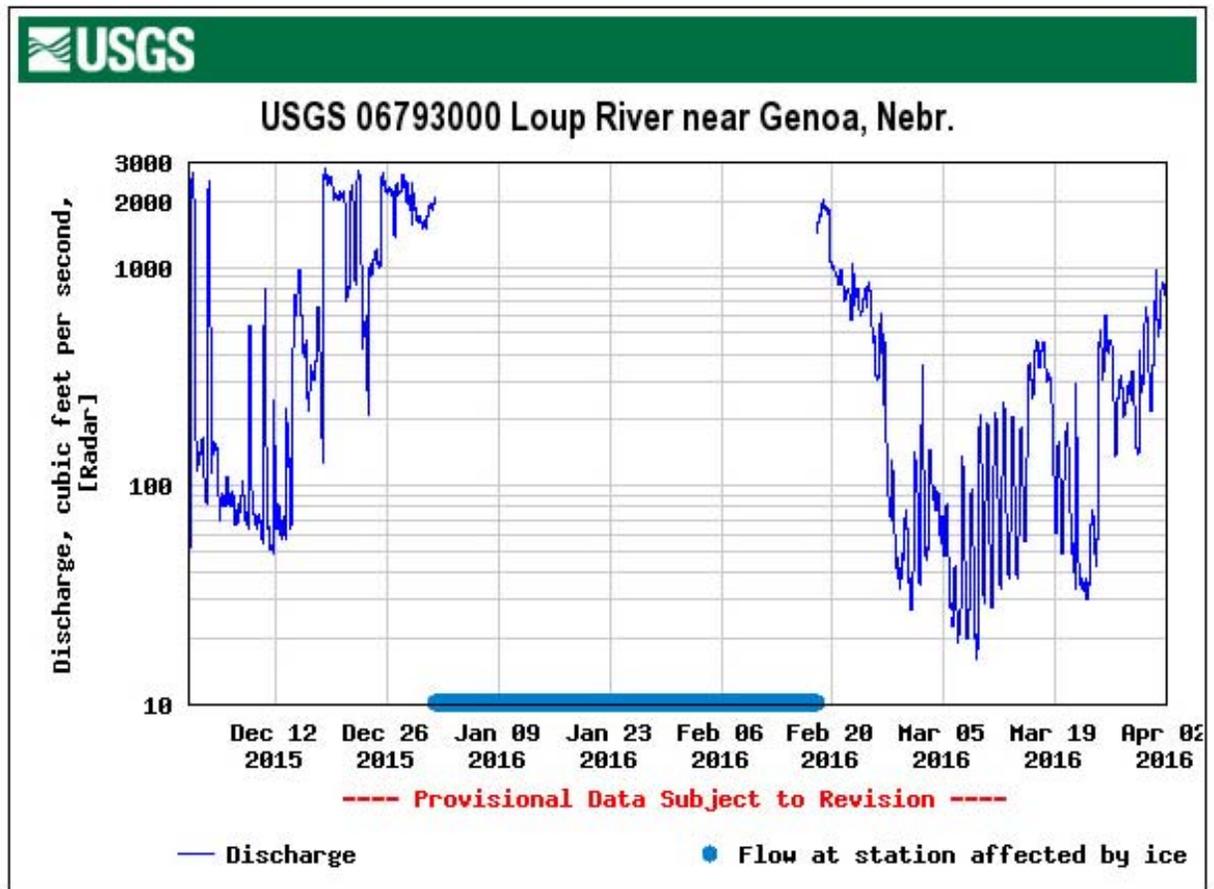
¹¹ Herrett, T.A., G.W. Hess, J.G. House, G.P. Ruppert, and M.L. Courts, 2004, Water Resources Data, Oregon, Water Year 2004: U.S. Geological Survey Water Data Report OR-04-1, 996 p.

¹² See the Final EA, Appendix B, page B-5.

¹³ In its Final License Application, the District noted that project generation was dispatched by the Nebraska Public Power District (NPPD). This element of Project operations has changed due to NPPD’s participation in the Southwest Power Pool (SPP). On March 1, 2014, the SPP began requiring all market participants (which includes NPPD) to submit a day-ahead generation schedule. Therefore, the District now provides a day-ahead generation schedule to NPPD, and NPPD no longer dispatches the Project turbines.

¹⁴ See the Final EA, Appendix B, footnote 220.

is typical of a Loup River bypass reach gage reading in the months of December, January, and February.



Commission staff did not adequately address the District's previous comments on the Draft EA.

The District provides the following comments specific to Appendix B, Staff Responses to Comments on the Draft Environmental Assessment:

- G-4

In its comments on the Draft EA, the District noted that the Draft EA incorrectly identified the Loup River bypass reach as having 6 months with no flow. In the Final EA, the Commission staff corrected these statements. It should be noted that flow data included in tables 2, 3, 4, 5, 6, 7, 9 and 10 include the following information: minimum daily flow, maximum daily flow, and mean daily flow for each month. The minimum and maximum values are the minimum and maximum of the average daily flow, which is

a value that occurred at least once during the period of record (not the average of the minimum/maximum for each day of the month).

- PO-1
The District notes that the Commission staff's reference to an Active Habitat Zone as part of the Preferred Sands Memorandum of Understanding (MOU) is incorrect. Active Habitat Zones are addressed in the Adaptive Management Plan associated with the MOU. Additionally, Active Habitat Zones were found to be unnecessary and/or ineffective and are no longer implemented by Preferred Sands.
- OCM-3
In OCM-3, the Commission staff agreed that bank erosion resulting from Project operation cannot be distinguished from bank erosion resulting from other processes and noted elimination of this discussion from proposed Draft License Article 402; however, proposed Draft License Article 402 still includes the following requirements, which imply the ability to distinguish these effects:
 - (3) a description of the methods that will be used to monitor bank stability to determine the extent and magnitude of any erosion occurring during project operation;
 - (5) the criteria that will be used to assess whether the stream bank requires stabilization or project operation requires modification;These two requirements should be deleted based on the response to OCM-3.
- WU-1
The Commission staff's response to WU-1 indicates that any consumptive use greater than USFWS's 0.1 acre-foot/year (0.0001 cfs) *de minimis* threshold would require consultation under Section 7 of the Endangered Species Act. The Commission staff's proposed flow modifications would result in estimated depletions of 1.9 to 3.1 cfs, thus substantially exceeding the USFWS *de minimis* threshold. However, neither the Commission staff nor USFWS have provided analysis of the impact of this depletion in relation to the threatened or endangered species present in the Project area.
- ST-3
The following statement in the Commission staff's response to ST-3 is incorrect:
Even with the change in operation of the SMAs, Loup Power District needed to construct seven jetties on the north bank in 1993 and 1994. The need for the bank protection structures and the need for their ongoing maintenance indicate that project operation has a localized effect on stream bank stability.

As the District stated on page A-2 of its June 23, 2014, comment letter on the Draft EA, the jetties were constructed as a result of a high flow event and were necessary to redirect the channel to protect Project facilities; they were not constructed due to Project operations. The need for maintenance of all jetties associated with the Project is

primarily due to the wear and tear associated with ice conditions and debris, and not Project operations.

- ST-4

In response to ST-4, the Commission staff states that “Because Loup Power District did not provide any additional data, information, or analysis supporting its conclusion that there is no sediment deficit or degradation in the lower Platte River, our response, which follows, is based on existing sources of information.”

On three separate occasions, the District has provided substantial additional information that indicates there is not a sediment deficit at the Tailrace:

- June 1, 2015, Attachment C, pages 3 through 8 (comments on USFWS’s DBO)
- December 7, 2012, Attachment B, pages B-1 through B-5 (response to USFWS’s 10(j) recommendations)
- November 23, 2011, Attachment B, pages 1 through 12, and Figures 1 through 7 (response to comments on the Updated Study Report)

- WQ-1

In WQ-1, the Commission staff’s statement that the District’s “*Study 4.0 – Water Temperature Study* shows that as flows in the Loup River were diminished, the probability of exceeding the state standard for water temperature in the Loup River bypassed reach increased” was based on a single analysis using the Sinokrot and Gulliver methodology as requested by USFWS during study plan development. The District has provided information explaining why the Sinokrot and Gulliver methodology was flawed and not applicable to the Loup River bypass reach, including in its June 1, 2015, comments on USFWS’s DBO. It is unclear to the District whether the Commission staff reviewed these comments, so they are repeated below:

In its analysis, USFWS fails to consider the results of the District’s Study 4.0, Water Temperature in the Project Bypass Reach (the results of which were filed with the Commission on February 11, 2011, and also restated in the District’s June 23, 2014, letter to the Commission). This study determined that during normal operations, there is a greater volume of water upstream of the diversion than the Loup River bypass reach downstream of the diversion. As detailed in Study 4.0, the results of the site-specific study indicated a statistically significant 1:1 relationship between the temperature upstream and downstream of the diversion; there is a statistically significant relationship between ambient temperature and water temperature; and there is NOT a statistically significant relationship between water temperature and flow rate. Even though there is greater volume of flowing water upstream of the diversion, the measured temperatures were statistically the same upstream and downstream of the diversion.

USFWS’s temperature analysis relies on research conducted by Sinokrot and Gulliver, which is not applicable to Project operations. Sinokrot and Gulliver simulated via a temperature model the addition of “potentially cool water” from Lake McConaughy to the Platte River, and how this addition would impact water temperature. The results

indicated that supplementing Platte River flow with cooler water out of Lake McConaughy would reduce the number of days that 32°C would be exceeded. However, the conditions modeled by Sinokrot and Gulliver are very different from those that exist at the Project's diversion structure (as described below). Sinokrot and Gulliver's analysis is not relevant to water temperature conditions in the lower Platte River for the following reasons:

- The invert of the Lake McConaughy “outlet” (the penstock intake structure) is elevation 3130 feet.¹⁵ Assuming the reservoir is at 50 percent capacity, the pool elevation is 3230 feet.¹⁵ At 50 percent reservoir capacity, the depth of water above the outlet is approximately 100 feet. The average release temperature between May and September (2009 to 2014) is approximately 15.4°C (60°F).
 - The District **does not have a reservoir** (rather it has a diversion structure with a maximum depth of water behind the diversion structure of approximately 5 to 6 feet in depth, which tapers to as little as 6 inches to 1 foot in depth) to provide cold water releases to the Loup River bypass reach and eventually to the lower Platte River to provide the cooling effects modeled by Sinokrot and Gulliver.
 - Additionally, the District's Study 4.0, Water Temperature in the Project Bypass Reach, showed that there is a statistically significant relationship between ambient temperature and water temperature. It stands to reason that this same relationship would hold for discharges downstream in the lower Platte River (that is, water temperature is directly related to ambient temperature).
- FR-2
In FR-2, the Commission staff responded to multiple comments provided by the District regarding minimum flows. Specifically, with respect to the aerial photos submitted by the District on November 5, 2015, the Commission staff stated that the aerials “provide a snapshot in time” and that average minimum flows are less than the 120 to 150 cfs shown on the aerials during July, August, and September. The District agrees that the aerial photos submitted by the District do not represent minimum flows that currently exist in the Loup River bypass reach in July, August, and September. In its November 5, 2015, letter, the District was proposing an alternative minimum flow of 125 cfs that the District believes would achieve the Commission staff's intent to enhance water quality and downstream aquatic habitat. The aerial photos were submitted to illustrate the river connectivity that would be achieved by the District's alternative proposal.
 - ST-1, TE-1, TE-12 & TE-13
The District and the Nebraska Public Power District (NPPD) contend with study results and literature included in the record of this relicensing proceeding that there is insufficient evidence to determine that minimum flows or a cap on maximum flows would enhance habitat for interior least terns, piping plovers, and whooping cranes. The Commission staff states that Alternative 4 in Table 31 of the Final EA illustrates that a minimum flow during the nesting season in the bypassed reach combined with 2,000 cfs maximum diversion would increase dominant discharge, width, depth, velocity, flow

¹⁵ Personal correspondence with Central Nebraska Public Power and Irrigation District staff, May 27, 2015.

area, and sediment transport by approximately 26.9, 5.4, 6.1, 7.2, 12.4, and 40.8 percent, respectively. Alternative 4 in Table 31 shows the results for a maximum diverted flow of 2,000 cfs for the entire year combined with a minimum flow equal to the dominant discharge, which in the case of Alternative 4 is 1,360 cfs, between April 15 and August 31 for a normal hydrologic year (in this case 2005). The minimum flow conditions for Alternative 4 are considerably greater than those proposed by the Commission staff, which is 1,360 cfs compared to 275 cfs, ~ 500 percent increase, yet show minimal and even unmeasurable potential results. For example, the 5.4 percent increase in width is 17 feet, 6.1 percent increase in depth is less than 0.1 foot, and 7.2 percent increase in velocity is 0.16 foot per second. Thus, the proposed flow modifications would result in considerably less potential change than those listed for Alternative 4 in Table 31. The Commission staff has acknowledged that distinguishing these changes from natural processes would be virtually impossible. In addition, the Commission staff states “It is not possible to predict to what degree least terns and piping plover populations could respond to improvements in their habitat; however, the staff recommendation is not required to predict specific outcomes.”

Furthermore, the Commission staff’s analysis ignores research from the PRRIP Tern and Plover Habitat Synthesis Chapters as discussed previously.¹⁶

- TE-4
In response to TE-4, the Commission staff noted that Section 7 of the Endangered Species Act still applies to interior least terns until such time that delisting is complete. When pointing out the proposed delisting of the interior least tern in the District’s November 5, 2015, letter, the District was not requesting elimination of conditions related to interior least terns. Rather, it was the District’s intent that the proposed draft license articles related to interior least tern should note the removal of these requirements once the interior least tern is delisted. This clarification of the proposed draft license articles would eliminate the need to amend the District’s license once delisting is complete.
- REC-2
In REC-2, the Commission staff indicates it will require the District to keep the Headworks OHV Park open regardless of whether the Nebraska OHVA or another third party partners with the District to operate and maintain the OHV Park. In a letter dated, September 6, 2016, the Nebraska OHVA informed the District that they are disbanding, and there is currently no other organization willing to take over the responsibilities of the Nebraska OHVA. The primary reason Nebraska OHVA has disbanded is due to several recent lawsuits against the Nebraska OHVA and the legal and liability issues associated with maintaining and operating the OHV Park. The District cannot and will not keep the OHV Park open if another third party partner does not continue to assist with operations.

¹⁶ PRRIP, 2015, Final Statement – PRRIP Tern and Plover Habitat Synthesis Chapters, available online at https://www.platteriverprogram.org/PubsAndData/ProgramLibrary/PRRIP%202015_Tern%20and%20Plover%20Habitat%20Synthesis%20Chapters.pdf.

- District Comments on the USFWS' Draft Biological Opinion
Commission staff indicated in Appendix B that they responded only to comments relative to the Draft EA. It is unclear if the Commission staff reviewed the District's June 1, 2015, comments on USFWS's DBO or took them into consideration. Although the Final EA footnote on p. B-1 states that the Commission staff's revisions to the Draft EA do not address the District's proposed modifications to the administrative draft license articles,¹⁷ and that such responses will be forthcoming, this footnote is incorrect. The Final EA document responds partially, but clearly not completely, to a select few of the District's objections to the original proposed draft license articles. For example, it addresses proposed Draft License Article 412 on p. B-25 and proposed Draft License Article 408 on p. B-32. Yet responses to much of the content of Attachment A in the District's June 1, 2015, letter could not be found in the Final EA. The District concludes that the Final EA needs to fully address all of the District's comments before it qualifies as "final."

Herein, the District has provided evidence of the following:

- Proposed Draft License Articles 404 and 406 jeopardize the District's water right and circumvent water rights administration in the State of Nebraska.
- Proposed Draft License Articles 404 and 406 are arbitrary and capricious and are not supported by the record of this relicensing proceeding.
- Commission staff has failed to consider the significant operational impediments that restrict the District's ability to implement and comply with proposed flow modifications contained in proposed Draft License Articles 404 and 406.
- Commission staff did not adequately address the District's previous comments on the Draft EA.

On numerous occasions, the District has requested a technical conference with Commission staff and USFWS to discuss the above issues.¹⁸ The District reiterates its request for a technical conference to discuss the draft license articles to develop workable conditions that address

¹⁷ See the District's November 5, 2015, comments on the draft license articles.

¹⁸ See the following letters from the District and telephone records from Commission staff:

- the District's June 23, 2014, comments on the Draft EA, pages 13-14
- the District's July 17, 2014, comments on USFWS's letter related to Section 7 consultation and the Commission's Biological Assessment, page 1
- the Commission's September 4, 2014, summary of endangered species teleconference with USFWS and the District on August 13, 2014, item 4
- the District's June 1, 2015, comments on USFWS's DBO, page 1 and Attachment A, pages 4, 5, and 7
- the District's July 20, 2015, letter regarding USFWS's DBO, page 1
- the District's August 20, 2015, letter regarding USFWS's revised Incidental Take Statement for the DBO, pages 1-2
- the District's September 16, 2015, letter regarding the Technical Meeting with the Commission and USFWS to be held on September 30, 2015, pages 1-2
- the Commission's September 30, 2015, telephone record of the Commission's teleconference with USFWS and the District on September 30, 2015, page 7
- the District's November 5, 2015, comments on the Draft License Articles, page 1

compliance needs as well as operational limitations. Furthermore, the District invites Commission staff and USFWS to visit the Project to observe actual operations.

If you have any questions regarding the District's comments or any information provided by the District, please contact me at (402) 564-3171 ext. 268.

Formally submitted,

A handwritten signature in black ink, appearing to read "Neal D. Sues". The signature is fluid and cursive, with a large initial "N" and "S".

Neal D. Sues
President/CEO
Loup Power District

cc: U.S. Senator Fischer
U.S. Senator Sasse
U.S. Representative Fortenberry, Nebraska 1st District
U.S. Representative Ashford, Nebraska 2nd District
U.S. Representative Smith, Nebraska 3rd District