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SUBJECT - Low Impact Hydropower Institute (LIHI) Re-certification Review for P-1417-Kingsley Dam Project, September 18, 2013

BACKGROUND

The Central Nebraska Public Power and Irrigation District (Central) is a political subdivision of the State of Nebraska, formed in 1933. Central's original purpose was to provide irrigation water to a region where rainfall was inadequate for consistent agricultural production. The Kingsley Dam Project, FERC Docket P-1417 (Project), operated by the Central, was issued a 40-year license on July 29, 1998. The license expires on July 29, 2038. The Kingsley Dam Project consists of dams, reservoirs, canals, and power plants located on the North Platte and Platte Rivers in Garden, Keith, Lincoln, Dawson, and Gosper Counties in south-central Nebraska.

The 3-mile long Kingsley Dam, on the North Platte River, impounds Lake McConaughy, which has a surface area of 30,500 acres and a maximum allowable storage capacity of 1,790,000 acre-feet. Kingsley Hydro, a 51.9-MW single-turbine hydroelectric plant, abuts Kingsley Dam and discharges to Lake Ogallala. The Central (or Tri-County) Diversion Dam, located 50 miles downstream of Kingsley Dam at the confluence of the North Platte and South Platte rivers, diverts Platte River flow into the 75-mile-long Supply Canal, which incorporates 27 dams and impoundments and three 18-MW hydroelectric power plants (Jeffrey, Johnson No. 1, and Johnson No. 2).

The Kingsley Hydro Plant contains one 50,000-kW turbine and one 50,000-kW generator, with an installed capacity of 50,000 kW. The Jeffrey Hydro Plant contains two 10,440-kW turbines and two 10,800-kW generators, with an installed capacity of 20,880 kW. The Johnson No. 1 Hydro plant contains two 10,030-kW turbines and two 10,800-kW generators, with an installed capacity of 20,060 kW. The Johnson No. 2 Hydro plant contains one 22,960-kW turbine and one 22,500-kW generator, with an installed capacity of 22,500 kW. The total installed capacity of the project is 113,440 kW. The average annual generation from the project is approximately 322 GWh.

The Project was initially certified by the LIHI for five years with this certification terminating on May 22, 2013. Central has submitted an application for Re-Certification of the Project.

LIHI RE-CERTIFICATION PROCESS

Re-certification review focuses solely on determining the answers to the following two questions:

- 1) Has there been a material change in circumstances since the original certification was issued?

For purposes of recertification review, a "material change in circumstances" will mean one or both of the following:

- (a) Non-compliance: Since receiving its last certification from LIHI, the certificate holder/applicant has not implemented, or has delayed implementing, or has done an inadequate job of implementing obligations at or near the facility that are of relevance to LIHI's criteria. These obligations could be in the form of terms and conditions of license(s), settlement



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agreements, resource agency recommendations or agreements, LIHI conditions of certification including annual notifications, agreements with local municipalities or other third parties or similar relevant obligations; or

(b) New or renewed issues of concern that are relevant to LIHI's criteria: Since receiving its last certification from LIHI, either new issues of concern and relevance to LIHI's criteria have emerged that did not exist or were not made known to LIHI at the time of certification, or there continues to be ongoing problems with previously known issues that appeared to LIHI to be resolved or on the road to resolution at the time of certification but in fact are not resolved, and are ongoing at the time of the re-certification application.

If a new license, settlement agreement, prescription, biological opinion or other similar regulatory decision has been made since the original recertification, these documents will be evaluated to determine if new or renewed issues have been raised.

2) Have any of LIHI's criteria, or the Board's interpretation of one or more criterion, changed in meaningful ways since original certification that are applicable to the circumstances of the facility seeking re-certification?

Central's Re-Certification Application was reviewed to assess adherence to the LIHI certification criteria with the above in mind. A FERC e-library search was conducted to verify claims in the Re-certification Application.

SUMMARY OF E-LIBRARY SEARCH

All FERC docket searches were confined to the period from the start of the previous LIHI certification, approximately May 1, 2008 through September 17, 2013, for FERC docket number P-1417. No major issues were found. Areas of discussion pertaining to this re-certification centered on:

- Service comments on proposed Environmental Assessment (EA) for the Land and Shoreline Management Plan at Kingsley Dam,
- Endorsement by the Nebraska Public Power District (NPPD) pertaining to Central's management of the Environmental Account.
- FERC authorization of NPPD to proceed with its springtime operations with regards to the Reservoir Restriction Plan for the Kingsley Dam (Article 400),
- FERC approval of the Kelly Tract Five- Year Report (Article 419),
- FERC approval of Water Year Annual Operating Plans for the Environmental Account (Article 404),
- FERC approval of Management Plan for Least Terns and Piping Plover nesting on the shore of Lake McConaughy (Article 421) ,
- FERC approval of Central's Jeffrey Island Habitat Area 2006-2010 Report (Article 417 and 418),
- FERC approval of Central's Project Boundary Review Annual Reports for the Project,



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- BARBER & BARBER, P.C., Attorneys at Law representing Jeffrey Lake Development, lessees of Central. Comments centered on lease fees and Central's control of shoreline development, its ability to remedy breaches of the leases, and its ability to terminate leases.
- FERC approval of new replacement leases to residents of Merriweather Subdivision regarding the Johnson Lake Development, Article 421 Land and Shoreline Management Plan 3-Year Endangered Species Reevaluation Report,
- FERC approval of Central's 2008 Wildlife Monitoring Report (Article 423),
- FERC approval of Cultural Resources Management Plan Annual Reports,
- FERC's Environmental Assessment for the Kingsley Dam Project,
- FERC approval of Central's compliance with FERC Order Modifying and Approving Land and Shoreline Management Plan,
- FERC approval of construction of the bike trail at the Johnson Lake Dam,
- FERC approval of Project Boundary review reports,
- FERC 2009 environmental inspection stating the Project is in compliance with the requirements of the license under P-1417
- FERC approval of Central's Lake Ogallala channel enhancement,
- FERC approval of temporary waiver of non- irrigation season release (Article 405).

RE-CERTIFICATION REVIEW

1. *LIHI Criterion-Flows*: Central is required to consult with resource agency recommendations regarding flow conditions for fish and wildlife protection, mitigation, and enhancement and to provide annually 10 percent of the storable inflows into Lake McConaughy to an Environmental Account (FERC Article 400). This account is used as desired by the U.S. Fish and Wildlife Service (Service) to augment in-stream flows and seasonal pulse flows.

Throughout the prior LIHI certification period, no non-compliance issues or new areas of concern were found.

2. *LIHI Criterion-Water Quality*: The Project must be in compliance with all conditions issued pursuant to the Clean Water Act and Nebraska regulations. Lake Ogallala, a tailrace reservoir below Lake McConaughy, has been listed on the 303(d) list of impaired waters for low dissolved oxygen (D.O.). Central, along with the NPPD, Nebraska Game and Parks Commission (NGPC), University of Nebraska-Lincoln, and the Nebraska Department of Environmental Quality, conducted studies to determine the Total Maximum Daily Load and determine the cause of the low D.O.¹ The cause was determined to be pollution entering the lake from upstream waters and not caused by the Project.

Central and the other entities developed a two-part plan to address the low D.O. concerns in Lake Ogallala. Central maintains a minimum D.O. level at the end of its tailrace by bypassing the turbine of the Kingsley Hydroelectric power plant and spraying the water into the air through a bypass valve. In addition, Central monitors D.O. and temperature at one-meter intervals at five separate

¹ TMDL for Lake Ogallala – Jun 2007



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stations around the lake on a weekly basis to assure adequate D.O.² In 2009, a channel was cut through a peninsula and through shallow areas of the lake to improve circulation.

Throughout the prior LIHI certification period, no non-compliance issues or new areas of concern were found.

3. *LIHI Criterion-Fish Passage and Protection:* The Project must be in compliance with all Fish Passage Prescription for upstream and downstream passage of anadromous and catadromous fish. Central states in the Re-certification Application that there has never been concerns about the passage of fish either upstream or down.

Throughout the prior LIHI certification period, no non-compliance issues or new areas of concern were found.

4. *LIHI Criterion-Watershed Protection:* Central abides by a FERC-approved Land and Shoreline Management Plan that identifies safeguards in regard to development, use, and wildlife protection along the entire shore of the facilities. The plan identifies setbacks from the water's edge where construction is not allowed, recreational areas where further development is limited, constraints on land use that may result in point source pollution, and species protection zones where habitat for species of concern (endangered species and bald eagles) are located. Central submitted an amendment to this plan in December, 2009 after completing consultation with the agencies and is still awaiting FERC approval. Some amendment revisions are designed to strengthen and expand environmental protection for endangered species by ensuring consultation with agencies prior to any variances given that may affect their habitat. Other proposed revisions make the plan easier to administer. In addition, a large portion of the Facility's shoreline is under a no-fee management lease to the NGPC.

Additionally, the Kelly Tract 5-Year Management Plan (Apr 2010 to Mar 2015), a conservation easement and management agreement with The Nature Conservancy (FERC Article 419), includes not only the acres under agreement with Central, but also other grasslands owned by The Nature Conservancy on the Kelly Tract.

Throughout the prior LIHI certification period, no non-compliance issues or new areas of concern were found.

5. *LIHI Criterion-Threatened and Endangered Species:* Both threatened and endangered species, as well as species of concern, are within the Project area. The Project must be in compliance with all aspects of the Recovery Plan for the threatened Great Plains population of piping plovers (*Charadrius melodus*), the endangered Interior least tern (*Sterna antillarum*), the recently de-listed American bald eagle (*Haliaeetus leucocephalus*), and downstream only, the endangered Pallid Sturgeon (*Scaphirhynchus albus*).

² Lake Ogallala Bathometric Project Mitigation Report 2012, Lake Ogallala Water Quality Report 2012



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FERC Article 421 requires Central to provide protection for piping plovers and least terns along the shores of its facilities, as well as perch and roost trees for bald eagles. The Land and Shoreline Management Plan and the Management Plan for Least Terns and Piping Plovers Nesting on the Shore of Lake McConaughy were developed in coordination with the Service and the Nebraska Game and Parks Commission. Both plans are implemented on an interim basis while awaiting FERC approval. These conservation plans are designed to provide a benefit to the species; include implementation assurances; and include features that will assure effectiveness.

The Management Plan for Least Terns and Piping Plovers Nesting on the Shore of Lake McConaughy was approved in March of 2010. The three-year reevaluation of the plan by the Service was completed in December of 2011, without any recommendations or changes. Central is currently negotiating with the Service and NGPC concerning additional protection of Least Tern and Piping Plover nests on the Lake McConaughy shoreline.

Throughout the prior LIHI certification period, no non-compliance issues or new areas of concern were found.

6. *LIHI Criterion-Cultural Resource Protection:* Central must be in compliance with FERC Article 425. This article requires implementation of a programmatic agreement among the FERC, the Advisory Council on Historic Preservation, and The Nebraska State Historic Preservation Officer (SHPO) for managing historic properties that may be affected by a license issued to Central for the Project. This agreement was finalized in July of 1998. As part of this Agreement, Central must file an annual Cultural Resource Management Plan (CRMP) report with FERC and the SHPO.

An archaeological and historic inventory of the Project area was done in 1991. Eighteen archaeological sites, one building, and an engineering system were inventoried. Recent investigations concluded that five archaeological sites are eligible for the National Register of Historic Places along with the Jeffrey Lodge and Central's facilities engineering system. Central's Cultural Resources Management Plan includes the guidelines for the protection of historic cultural resources within the Project by working closely with the Nebraska State Historical Preservation Society.

FERC has approved the annual CRMP reports submitted by Central throughout the prior LIHI certification period. No non-compliance issues or new areas of concern were found.

7. *LIHI Criterion-Recreation:* Central must be in compliance with the Land and Shoreline Management Plan (FERC Article 421). Central has stated it considers all of its shorelines adjacent to the lakes and canal system open to public access, unless an operational safety concern, natural hazard, or environmental protection issue requires access restrictions. Central has leased much of the land within the FERC Project Boundary and adjacent to the lakes to the NGPC, for use as State Recreation Areas or Wildlife Management Areas. Therefore, the majority of existing Public Park, camping, and water access facilities on the lakes are managed by the NGPC (~6,000 acres). Recreation areas are equipped with picnic tables, grills, water wells and boat ramps. Additionally, about 36,000 acres of lake water comprised of Central's many lakes and reservoirs is available for boating activities.



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Throughout the prior LIHI certification period, no non-compliance issues or new areas of concern were found.

8. *LIHI Criterion-Facilities Recommended for Removal:*

A review of the FERC docket indicates that during the prior LIHI certification period, Central does not have any facility that has been recommended for removal by a natural resource agency.

RECOMMENDATION

A review of the Re-certification application and a FERC docket search from the start of the previous LIHI certification, approximately May 1, 2008 through September 17, 2013, exemplifies Central is a good steward of the environment. Central has been proactive regarding environmental issues associated with the Project. Most required filings were on time without the need of time extension requests. The docket search review resulted in no non-compliance issues surfacing in the record. Additionally, no new or renewed issues of concern were discovered. The project continues to satisfy the entire LIHI criteria. It is my recommendation that Central be issued a LIHI re-certification for an additional five years for the Kingsley Dam Project, FERC Docket P-1417.

Gary M. Franc



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