White Paper
Relicensing the Loup River Hydroelectric Project

INTRODUCTION

The Loup River Hydroelectric Project is located on the Loup River in Nance and Platte Counties, Nebraska. It is a public power development owned and operated by the Loup River Public Power District of Columbus, Nebraska. The project is licensed by the Federal Energy Regulatory Commission (FERC) under authority granted by the Federal Power Act. The project was last relicensed in 1984 for a 30-year term. Because of the complexity and length of time involved in applying for a new FERC operating license, Loup River Public Power District initiated planning, coordination and information gathering efforts in early 2006 to facilitate the relicensing process.

PROJECT HISTORY AND DESCRIPTION

In 1933 the State of Nebraska approved the formation of the Loup River Public Power District (District) and granted it the right to appropriate Loup River water (water right of 3,500 cubic feet per second) for power generation purposes. The original 50-year federal license for the Loup River Project (FERC Project No. 1256) was granted on April 17, 1934. Project construction began in late 1934 and was completed in the spring of 1937.

The Loup River Project utilizes long gently sloping canal segments and two powerhouses to capture the energy potential of water moving from a higher to a lower elevation. Principal constructed features consist of a diversion weir and gated intake structure located on the Loup River between the towns of Fullerton and Genoa; a linear settling basin; a power canal to the Monroe Powerhouse a 3 unit, 8.25 megavolt amp (MVA) total facility; Monroe Powerhouse; a power canal to the regulating reservoirs – Lake Babcock and Lake North; a forebay canal to the Columbus Powerhouse a 3 unit, 48 MVA total facility ; and a tailrace canal that discharges to the Platte River just downstream of Columbus. The attached figure shows the location of these features on an aerial photo base. The only significant modification since project completion was construction of Lake North in 1963 to expand Lake Babcock, the original regulating reservoir. A major re-build of turbine-generating equipment in both project powerhouses was completed in 2007. Over the years the District has added numerous enhancements for environmental protection, safety, and public recreation associated with the project.

PROJECT OPERATION

The project functions by diverting water from the Loup River through adjustable gates into the two mile-long settling basin. Much of the heavier sediment material settles out in the basin; sediment is pumped from the basin to adjacent disposal areas at various intervals throughout the year. Clarified water exits the basin at a concrete weir, enters the upper power canal, and flows approximately 11 miles to the Monroe Powerhouse. Power is generated as water flows through three identical turbine-generator units under a normal head of 32 feet and discharges to the lower power canal. This 12 mile canal segment leads to a concrete weir structure which overflows into Lake Babcock and Lake North. The District holds a water right of 3,500 cfs, which is also the maximum hydraulic capacity of the power canals. However, the average canal flow is considerably less. In addition to supporting power generation, the project canal delivers water to several dozen small irrigation interests along the route. Water accumulates in the 1100-acre regulating reservoirs and is then available on demand at the Columbus Powerhouse via a 2 mile forebay canal which has a maximum flow capacity of 5,000 cfs. The forebay canal terminates at

a concrete intake structure where water enters three steel penstocks leading to three turbine-generators. Each penstock is 20 feet in diameter and 320 feet in length. Normal operating head at the Columbus Powerhouse is 112 feet. Discharge from the powerhouse enters a 5 mile tailrace canal which empties into the Platte River a short distance downstream from the confluence of the Loup River.

The project does not include any transmission lines. All electric power generated by the project is purchased at the source by the Nebraska Public Power District (NPPD). This purchased power is one component of the overall generation portfolio from which NPPD services its retail and wholesale electric customers. Generation at the 48 MVA Columbus Powerhouse is managed to respond to electrical demand in the NPPD system – while taking into account the amount of diverted flow entering the power canal and the available water storage in the reservoirs. Water flow from the reservoirs into Columbus Powerhouse is actively regulated throughout the day by adjusting the turbine wicket gates. This hydro-cycling arrangement allows the District to provide a specified level of power production – within minutes after it is requested by NPPD.

The Loup River Hydroelectric Project was conceived, licensed and specifically designed for a variable output or hydro-cycling mode of operation; the District is seeking to relicense the project according to existing operations.

FERC RELICENSING PROCESS

Relicensing a hydroelectric power project is a highly structured process that involves the license applicant, FERC, numerous regulatory agencies, stakeholders, tribal interests, special interest groups and the public. Relicensing is also a lengthy process. Depending on the issues involved, it is not uncommon for an applicant to spend 7 to 9 years obtaining a new operating license. The current Loup River Project license will not expire until April 2014. However, FERC regulations require a licensee to formally initiate the relicense process by filing a comprehensive pre-application document (PAD) 66 to 60 months before its current license expires. The District has retained HDR Engineering as relicensing consultant. Together they have initiated planning, outreach and data gathering activities and intend to prepare a PAD for submittal in late-October 2008, the earliest date that the relicense process can officially begin. The District will be the first Nebraska licensee to employ the new Integrated Licensing Process (ILP) which became FERC's default (preferred) process in 2005. As its name implies, the ILP procedure involves earlier and more collaborative participation among all interested parties throughout the relicensing process.

IDENTIFICATION AND RESOLUTION OF ISSUES

All water resource and energy developments involve some degree of economic, cultural and environmental impacts. Different parties may view these impacts as desirable, undesirable, or both. A new project license must comply with many regulations - including the Federal Power Act (FPA), the National Environmental Policy Act (NEPA), the Clean Water Act (CWA), the Endangered Species Act (ESA), and the National Historic Preservation Act (NHPA). Therefore an environmental assessment (EA) or, if appropriate, an environmental impact statement (EIS) will be prepared. The FERC is charged with evaluating input from all sources and seeking a balance between the power and non-power aspects of each licensed project. Concerns and potential impacts raised related to continued project operation will be investigated during the relicensing process. The Loup River Public Power District is committed to working responsibly with all concerned parties to properly investigate and seek appropriate resolution of all legitimate issues raised during relicensing.