

A unanimous Dec. 14 vote by Nebraska Public Power District's Board of Directors to increase the amount of power produced at its Cooper Nuclear Station (CNS) could reinforce the utility's already 40 percent, non-carbon emitting generation portfolio.

NPPD will seek to increase the plant's output by 146 megawatts from its current 800-megawatt nameplate, through an extended power uprate (EPU). The increase in generation will require no additional facilities or employees. The project requires some equipment upgrades that complement investments NPPD has already made in replacing major components over the last several years.

"The 146 extra megawatts will help NPPD meet the additional load requirements we expect to have as early as 2018," NPPD President and CEO Pat Pope explained. "Other benefits of an EPU include increasing the amount of electricity we can produce from a non-carbon producing resource, when potential greenhouse gas regulations are on the horizon. In addition, off-system sales from the facility into the regional energy market could be a significant benefit to Nebraska customers when such revenues are returned and put toward NPPD's operational expenses." One of the key pieces of equipment to be replaced will be the plant's high-pressure turbine, ordered last May due to the long, lead time in manufacturing.

"Regardless of a decision to move forward or not with an extended power uprate, the turbine would still have to be replaced," stated Pope, noting that the turbine is one of the oldest in the country's nuclear fleet. Since 2005, NPPD has replaced other major components including two low-pressure turbines, a generator rotor and stator, eight feedwater heaters, and main power transformers, all of which enhance the benefits of an uprate.

"The board's approval is not a guarantee the project is a given, but it is a very good generation opportunity for NPPD to pursue," Pope explained, noting that a thorough analysis must be conducted along with obtaining regulatory approvals. NPPD will seek Nuclear Regulatory Commission approval for a license amendment and approval from the Nebraska Power Review Board.

An EPU involves conducting a thorough analysis to ensure the plant can safely generate more power, evaluating the Missouri River's temperature limits as they relate to the plant's thermal operations, studying the transmission requirements, installing the high-pressure turbine, and making the appropriate modifications and upgrades to plant equipment. The uprate is achieved by increasing coolant flow to the reactor, increasing fuel enrichment, generating more heat in the reactor core, and increasing steam flow to the turbine/generator.

The project requires an estimated capital investment of \$243 million dollars, \$60 million of which is already committed to modifications necessary to meet relicensing requirements NPPD agreed to in 2010 when the Nuclear Regulatory Commission (NRC) renewed NPPD's operating license, extending it to 2034.

Much of the new equipment will be installed during three, successive refueling and maintenance outages scheduled for 2014, 2016, and 2018. The new high pressure turbine is expected to be installed during the 2016 outage. Cooper had a small uprate approved by the NRC in 2008 of 1.6 percent, resulting in an increase of about 12 megawatts.

NPPD Seeks Power Uprate at Cooper Nuclear Station; Requires Estimated Capital Investment of \$243 Million

Written by www.anewspaper.net

Thursday, 20 December 2012 20:00 - Last Updated Thursday, 20 December 2012 20:01

At last Friday's monthly meeting, the Board approved the resolution to implement an extended power uprate and also took two additional actions. The Board approved two contracts with GE-Hitachi Nuclear Energy Americas, LLC, to provide the engineering services to perform analyses and evaluation of the nuclear steam supply system in order to make the application to NRC, at a cost of \$30,547,411, and an additional \$14,195,000 for the purchase of power range neutron monitoring system, a system upgrade related to the EPU project.

NPPD will continue to evaluate and then implement as necessary other generation, energy efficiency and demand side management options in accordance with the Integrated Resource Plan process.