

FY06-LV(55)-F - 146

"Lignite Vision 21 Feasibility Project-Phase III"

Submitted by: Great Northern Power Development, L.P.;
Principal Investigator: Charles Kerr

PARTICIPANTS	
<u>Sponsor</u>	<u>Cost Share</u>
Great Northern Power Development, L.P.	\$ 1,310,443
NDIC	\$ 1,310,443
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Total Cost	\$ 2,620,886
Project Schedule - 15 Months	Project Deliverables
Contract Date – 4/21/06	Status Reports:
Start Date – 10/1/05	3/31/06(✓); 9/30/06(✓)
Completion Date – 12/31/06	Final Report 12/31/06(✓)

OBJECTIVE / STATEMENT OF WORK:

This is Phase III of IV for developing a 500 MW lignite-fired power plant and its associated surface mine in western North Dakota. The Phase III work will further the necessary transmission development, market/business development, mine development, transmission, permitting support, and engineering work to move the project into the customer contract, financing and pre-construction phases. It is anticipated this Phase III stage can be completed within fifteen months and, upon receipt of the necessary permits, transmission, and customer commitments, the design and construction stages will then be pursued.

STATUS

October 1, 2005 – March 31, 2007

Generation work activities included participation in the high sodium CFB slagging study, updates to the site-specific plant engineering costs, and revisions to technology studies to reflect plant emissions and balances relative to the recent air permit application to enable its completeness determination. GNPD also intensified its research into gasification and continued its involvement in industry clean coal task forces as well as the feasibility of underground coal gasification (UGC) relative to its potential for utilizing lignite.

Items of work in the transmission arena for this period involved working with the recently established North Dakota Transmission Authority to identify/define process and procedures, LV21 Program's transmission consultant, independent transmission companies, and regional transmission owners to develop an adequate pathway to the consumer for the project's generation output. GNPD also participated in UGPTC, MISO, and WAPA meetings as well as meetings with local utilities as well as monitoring FERC progress on transmission issues.

In the environmental arena the major work activities revolved around obtaining a DOH completeness determination by responding to DOH requests and questions on GNPD's August 18, 2005 air permit application. Some of the main activities included meetings with the DOH, EPA, NPS, US F&W to address environmental permitting concerns. The proximity to Theodore Roosevelt National Park dictates extensive additional impacts analysis to ensure no adverse impacts. Analyses were conducted on Best Available Control Technologies (BACT) requirements, visibility impacts, and plume impacts in response to questions on our application submittal. Other activities included research and monitoring of CO₂ and mercury control technologies. Additionally, GNPD began the investigation of timing and feasibility of the mine permit base-line data gathering processes.

Business development activities conducted during this phase included the aggressive pursuit of GNPD's marketing strategies, holding meetings with IOU's and cooperatives, pursuing RFP's for response / updates, and updating project information for coalitions. Work also continued in the refinement of the business and marketing plans as well as the development of flexible business arrangements that entail structures ranging from complete ownership to Power Purchase Agreements (PPA's). All viable opportunities to enter into a contract with a utility/project developer as the final project team member continue to be pursued.

The Phase III Mine / Site Development activities for this period centered primarily on land control and access relative to the plant location and mine reserve development as well as buffer zone requirements to comply with PSD air permit application.

GNPD has encountered no fatal flaws and the Project's goals of positive feasibility studies, successful permit application and venture formation remain intact. GNPD continues pursuit of all contract opportunities with regional utilities targeted as the final member of the project team.

April 1 – September 30, 2006

GNPD also intensified its research into gasification and continued its involvement in industry clean coal task forces to determine if alternative coal conversion technologies are available that would allow the project to forego transmission constraints.

The transmission arena work items for this period included continued meetings with the North Dakota Transmission Authority to identify/define process and procedures, LV21 Program's transmission consultant, independent transmission companies, and regional transmission owners to develop an adequate pathway to the consumer for the project's generation output. GNPD also participated in UGPTC, MISO, and WAPA meetings, local utilities meetings and monitoring FERC progress on transmission issues. Significant effort is being expended to solve the transmission constraint or examine alternative coal conversion technologies that would allow the project to become operational prior to transmission constraint resolution.

The air permit completeness determination from the NDDOH, received on July 17, 2006, was the major work accomplishment in the Environmental Arena this period. Other main activities involved the initiation of the mine permit baseline data gathering process. Work also continued into monitoring research of CO₂ and mercury control technologies.

Further intensity into Business development activities were conducted during this phase. This included the aggressive pursuit of GNPD's marketing strategies, holding meetings with IOU's and cooperatives, pursuing RFP's for response / updates, and updating project information for coalitions. Refinement of the business and marketing plans as well as the development of flexible business arrangements that entail structures ranging from complete ownership to Power Purchase Agreements (PPA's) were other work items furthered during this period. Pursuit of all viable opportunities to enter into a contract with a utility/project developer as the final project team member was also an additional focus of this phase.

The Phase III Mine / Site Development activities for this period continued to center primarily on land control and access relative to the plant location and mine reserve development as well as buffer zone requirements to comply with PSD air permit application.

Final Report

GNPD discovered potential, and plans to continue its research, in gasification, coal-to-liquids, and other alternative coal conversion technologies as the project moves forward. GNPD continued to work to identify/define process and procedures in the transmission arena and will continue the effort for transmission constraint resolution in the next phase of the project. Items completed included meeting with LV21 Program's transmission consultant, independent transmission companies, and regional transmission owners to develop an adequate pathway to the consumer for the project's generation output. GNPD also participated in UGPTC, MISO, and WAPA meetings, local utilities meetings and continued monitoring FERC progress on transmission issues.

Baseline data gathering was the main effort of this period in the environmental area. The air permit completeness determination from the NDDOH, received on July 17, 2006, was another major accomplishment in Phase III. Work items completed that will also continue into the project's next phase include monitoring research of CO2 capture/sequestration and mercury control technologies.

GNPD completed all Phase III Business Development activities and will continue many of the following in the next phase of the project. This includes the aggressive pursuit of GNPD's marketing strategies, holding meetings with IOU's and cooperatives, pursuing RFP's for response / updates, and updating project information for coalitions. Refinement of the business and marketing plans as well as the development of flexible business arrangements that entail structures ranging from complete ownership to Power Purchase Agreements (PPA's) were other work items furthered during this period. Pursuit of all viable opportunities to enter into a contract with a utility/project developer as the final project team member was and will continue to be a prime focus for the furtherance of this project.

Significant effort was expended to solve the transmission constraint and examine alternative coal conversion technologies that would allow the project to become operational prior to transmission constraint resolution. GNPD continued pursuit of all contract opportunities with regional utilities targeted as the final member of the project team. GNPD has encountered no fatal flaws and the Project's goals of positive feasibility studies, successful permit application and venture formation remain intact.