FY99-XXXIII-91
INVESTIGATION OF PASTE TECHNOLOGY FOR CCB DISPOSAL AND MINE RECLAMATION

CONTRACTOR: En-Rock, Inc.

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PARTICIPANTS

Sponsor	Cost Share
Great River Energy	$300,000
ND Industrial Commission	$100,000
Total Project Costs	$400,000

Project Schedule - 12+ Months
- Contract Date – 5/13/99
- Start Date – 5/13/99
- Completion Date – 5/15/00+

Project Deliverables
- Status Report – 7/31/99✓
- Status Report – 1/31/00✓
- Status Report – 9/1/00✓
- Final Report – 2/1/01✓

OBJECTIVE / STATEMENT OF WORK

The objective of this project is to demonstrate paste technology as an alternative disposal practice for Coal Creek Station coal combustion byproducts (CCB) and The Falkirk Mine. Current disposal practice involves placement of CCBs in either geomembrane lined storage ponds or in an earthen lined landfill facility. The goal of this study is to demonstrate the paste technology as an environmentally acceptable and economically preferable alternative disposal practice.

STATUS

Testing verified the suitability of the Coal Creek Station CCB to produce a stable and inert paste. Kinetic testing, leaching studies and paste stability studies were completed. During kinetic testing samples were collected and analyzed for pH, conductivity, alkalinity, acidity, Ca, Fe, $(SO_4)^{-2}$, and Eh. Leachates were collected for weeks 0, 1, 5, 10 and 15, and analyzed for common ions: Cl^-, $(HCO_3)^-$, $(CO_3)^{=}$, OH^-, K^+, Mg^{++} and Na^+; for trace metals: Ag, Al, As, B, Be, Cd, Co, Cr, Cu, Hg, Mn, Mo, Ni, Pb, Sb, Se, Sr, Tl, V and Zn; and other constituents:

B, F, nitrate/nitrite, ammonia phosphate, sulfide and total dissolved solids (TDS). The kinetic testing and leaching studies demonstrated the Coal Creek Station CCB is a suitable material to produce a stable paste. Demonstration test cells were constructed and paste material added to the cells. Test cell monitoring was completed and the results show the laboratory kinetic, leachant and stability studies are valid to predict demonstration test cell performance.

The Great River Energy request to the North Dakota Department of Health to reclassify the Coal Creek Station fly ash paste as an inert waste was not granted and a case-by-case review is required prior to reclamation and disposal.