



JOHN W. DWYER, *President*

MEMORANDUM

Date: December 16, 1992

From: Clifford R. Porter *Clifford R. Porter*

To: North Dakota Industrial Commission
Governor, Ed Schafer ✓
Attorney General, Nicholas J. Spaeth
Attorney General-Elect, Heidi Heitkamp
Commissioner of Agriculture, Sarah Vogel

Subject: ~~Clean Coal Technology V Proposals from North Dakota:~~
~~IGPFB Project Milton R. Young Unit 3~~ submitted by
BNI and Liquid Transportation Fuels submitted by DGC

I have completed a preliminary review of the two proposals submitted to the United States Department of Energy (DOE) under the Clean Coal Technology Program Round V solicitation. These two proposals were approved by the Industrial Commission for funding under the Lignite Research Fund, subject to certain conditions of funding, review and award by DOE.

During the process of preparing the proposals for the DOE, each of these two projects escalated in total project cost. The total cost of these two projects, as submitted to the DOE and as estimated in the proposals submitted to the Industrial Commission, are summarized as follows:

PROJECT TITLE	INTEGRATED GASIFICATION PRESSURIZED FLUIDIZED-BED(IGPFB) DEMONSTRATION PROJECT
PROJECT TEAM	BNI COAL, LTD., BABCOCK & WILCOX, MINNESOTA POWER
PROJECT COSTS	\$425,850,506 AS SUBMITTED TO DOE ON 12/7/92 \$330,000,000 AS SUBMITTED TO INDUSTRIAL COMMISSION ON 10/1/92 \$95,850,506 ESCALATION
STATE COMMITMENT	\$19,000,000 REMAINS UNCHANGED

PROJECT TITLE PRODUCTION OF LIQUID TRANSPORTATION FUELS AT
 THE GREAT PLAINS PLANT

PROJECT TEAM DAKOTA GASIFICATION COMPANY

PROJECT COSTS \$394,298,586 AS SUBMITTED TO DOE ON 12/7/92
 \$202,000,000 AS SUBMITTED TO INDUSTRIAL
 COMMISSION ON 10/25/92
 \$192,276,586 ESCALATION

STATE COMMITMENT \$15,000,000 REMAINS UNCHANGED

Review of these projects, the recommendation of the Lignite Research Council, and approval by the Industrial Commission was specified "in an amount not to exceed" for each project. Therefore, the State share on these projects has not changed. An escalation in total project cost, as a result of the more detailed engineering and cost estimations required for the DOE proposal, is not surprising. I am in the process of reviewing each of the proposals to DOE in more detail and will be preparing additional updated information.

The primary cause for the escalation of the IGPFB project is related to increased equipment cost for the gasifier section of the plant. The escalation in costs for the Liquid Transportation Fuels project at DGC is due to increased estimates for design engineering and increased feedstock costs.

The projected new coal production from BNI's Center mine for the IGPFB project as submitted to DOE is 622,051 tons per year. This production rate is from coal to electric power generation and assumes the high net cycle efficiency and a projected availability factor of 85%. The 622,051 tons per year estimate does not include any new production for the manufacturing of char. The estimated combined production of electricity and char from the Center Mine is 1,000,000 tons per year.

The attached summary sheet represents the most current estimates and updated information available on the projects. If the projects are selected and move toward demonstration and operation, it is reasonable to assume that project costs and operational factors will be updated further.

CRP/sb
Enclosures

cc: Karlene Fine

LIGNITE RESEARCH FUND
DEMONSTRATION PROJECTS

LIGNITE ENHANCEMENT

MILTON R YOUNG UNIT 3

A HYBRID TECHNOLOGY

ELECTRICITY AND CHAR

LIGNITE PRESERVATION

GREAT PLAINS SYNFUELS PLANT

AN INNOVATIVE TECHNOLOGY

NATURAL GAS AND DIESEL

DEMONSTRATION PROJECTS

FUNDING SUMMARY

<u>SOURCES</u>	<u>FUNDS (\$)</u>
PRIVATE INDUSTRY	400,782,239
US DEPARTMENT OF ENERGY	385,366,853
STATE OF NORTH DAKOTA	34,000,000
<hr/>	
TOTAL DEMONSTRATION PROJECTS	\$820,149,092

REGIONAL PROJECT TEAM MEMBERS

MINNESOTA POWER	HOST UTILITY
BNI COAL LTD	COAL COMPANY
MINNKOTA POWER	PLANT OPERATOR
EERC	TECH DEVELOPER
DAKOTA GASIFICATION CO	HOST FACILITY

IGPFB PROJECT

FUNDING PARTICIPANTS

MINNESOTA POWER	\$168,925,253
BABCOCK & WILCOX	20,000,000
BNI COAL, LTD	5,000,000
STATE OF NORTH DAKOTA	19,000,000
US DEPARTMENT OF ENERGY	212,925,253
<hr/>	
TOTAL PROJECT COSTS	\$425,850,506

PROJECT TEAM MEMBERS

MINNESOTA POWER	HOST UTILITY
BABCOCK & WILCOX	PRIME CONTRACTOR
	PROJECT MANAGER
BNI COAL, LTD	COAL SUPPLIER
MINNKOTA POWER	PLANT OPERATOR
SARGENT & LUNDY	A&E SUBCONTRACTOR
EERC	PROJECT SPECIFIC
	DEVELOPMENT
BRAUN INTERTEC	ENVIRONMENTAL
	MANAGEMENT
ARGONNE NATIONAL	PROJECT SPECIFIC
LABORATORY	SUBCONTRACTOR

LIQUID TRANSPORTATION FUELS

FUNDING PARTICIPANTS

DAKOTA GASIFICATION COMPANY \$172,756,430

STATE OF NORTH DAKOTA \$15,000,000

US DEPARTMENT OF ENERGY \$172,441,600

PROGRAM INCOME \$34,100,556

TOTAL PROJECT COSTS \$394,298,586

PROJECT TEAM MEMBERS

DAKOTA GASIFICATION COMPANY
(PROGRAM MANAGEMENT)

A&E FIRM
(PROJECT MANAGEMENT)

PROCESS LICENSOR
(FISCHER-TROPSCH TECHNOLOGY)

ENVIRONMENTAL MONITOR
(ENVIRONMENTAL MANAGEMENT)

LIQUID TRANSPORTATION FUELS

PROJECT SUMMARY

SIZE: 10,000 Barrels per Day of Liquid
Transportation Fuels (Diesel - gasoline)

LOCATION: Beulah, ND, At the Great Plains
Synfuels Plant

COSTS: \$394,276,586

COAL: 2,280,000 tons per year of existing
production (approximately)

PERFORMANCE GOALS:

- **Environmentally Clean Transportation Fuels**
 - 0% sulfur diesel
 - 0% aromatics diesel
 - lower particulate emissions
 - reduced CO and NO_x emissions

- **Energy Security**
 - potential for reducing import of foreign oil

- **Economic Goal**
 - future profitability of the Great Plains
Gasification Plant



INDUSTRIAL COMMISSION OF NORTH DAKOTA

Governor,
George A. Sinner

Attorney General,
Nicholas J. Spaeth

Commissioner of Agriculture,
Sarah Vogel

LIGNITE RESEARCH, DEVELOPMENT AND MARKETING PROGRAM

December 11, 1992
crp
finecct.bni

MEMORANDUM

Date: December 11, 1992
From: Clifford R. Porter *Clifford R Porter*
Director, Lignite Research & Development Program
To: Karlene Fine
Secretary to the Industrial Commission
Subject: BNI Coal, Ltd. CCT V Application

Please find enclosed the cover letter which was attached to the copy of the CCT V proposal to DOE from the BNI project team.

Also, I have attached a copy of the receipt from Babcock & Wilcox which shows that the BNI proposal was delivered to DOE on December 7, 1992. In addition, I have received a copy of the proposal submitted by the BNI project team, "Integrated Gasification Pressurized Fluidized-Bed (IGPFB) Demonstration Project".

Therefore, BNI Coal, Ltd. has accomplished the work under Contract No. LRC-XI-41 and are entitled to receive the \$150,000 consideration specified in the contract.

CRP:sb24S5a
Enclosures

LIGNITE RESEARCH C
John Dwyer
Chairman
Dir
P.O. Box 2277
Bismarck, N.D. 58

(701) 258-7117

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Do a memo to
Hamm
requesting \$150,000 payment
to BNI Contract # LRC-XI-41

RONALD H. BERTOCH
Executive Vice President



FAX (701) 222-1547

December 9, 1992

Mr. Clifford Porter
Director of Lignite Research and Development
P.O. Box 2277
Bismarck, ND 58502

Ms. Karlene Fine
Secretary to the Industrial Commission
North Dakota State Industrial Commission
State Capitol
Bismarck, ND 58505-0001

Dear Mr. Porter and Ms. Fine:

In fulfillment of the requirement under Lignite Research Council Contract No. LRC-XI-41, paragraph 3, BNI Coal, Ltd. is pleased to submit a copy of the Clean Coal Technology Demonstration Project (CCT V) Application titled "Integrated Gasification Pressurized Fluidized-Bed" (IGPFB). The CCT V application was prepared by Babcock & Wilcox and submitted to the Department of Energy on December 7, 1992.

Volume 4, Section A, of the submitted CCT V application contains certain financial information that is market sensitive and as such was removed in order to remain competitive in the market place.

If you have any further questions, please feel free to call me at your convenience.

Sincerely,

A handwritten signature in cursive script that reads "Ronald H. Bertoch".

Ronald H. Bertoch



Babcock & Wilcox
 a McDermott company

ALLIANCE RESEARCH CENTER
 1562 BEESON STREET — ALLIANCE, OHIO 44601
 ATTN: _____

LYNCHBURG RESEARCH CENTER
 MT. ATHOS — LYNCHBURG, VIRGINIA 24505
 ATTN: _____

PURCHASE ORDER DEVIATION REPORT

INITIATOR _____ SECTION _____ DATE _____
 VENDOR _____ P.O. NO. _____ PACK SLIP NO. _____
 SHORTAGE OVERAGE WRONG MAT'L DEFECTIVE MAT'L CERTIFICATION OTHER _____

MATERIAL RECEIVED		MATERIAL ORDERED	
ITEM	QTY. DESCRIPTION	QTY.	DESCRIPTION
	⑧ Stanley 7. Coll		Stanley 7. Coll
	TIME 9:20		
	DATE 12/7/92		

SUGGESTED CORRECTIVE ACTION: _____

REQUISITIONER (OR AGENT) _____ SIGN _____ QA/QC _____ SIGN _____

PURCHASING DISPOSITION: ACCEPT CREDIT VENDOR RETURN CHANGE OTHER _____ APPROVAL SIGN _____ DATE _____

PAY INVOICE COMING TO REPLACE MATERIAL NOTICE

MATERIALS SHIP AUTHORIZATION

INITIATOR F.D. Russell SECTION CRD DATE 12/4/92
 SHIPMENT TO VENDOR (REQUIRES PURCHASING APPROVAL) OTHER (SHIPMENT TO CUSTOMER, CONTRACTS, ETC)

MATERIAL QTY/DESCRIPTION: B&W Proposal No. 92-123

REASON FOR SHIPMENT: REPAIRS CALIBRATION P.O. DEVIATION (SEE ABOVE) OTHER _____
 EXPLAIN: _____

SPECIAL INSTRUCTIONS: HAZARDOUS MATERIALS OTHER _____ APPROVAL SIGN _____ DATE _____

COMPANY: DEPARTMENT OF ENERGY
Headquarters Procurement Operations
Room 1E-057 -- Forrestal Building, PR 33
 STREET: 100 Independence Avenue, SW
 CITY/STATE: Washington, DC 20585 ZIP: 20585
 ATTN: Document Control Specialist
Herbert D. Watkins
(202) 586-1026

P.O. NO.: _____
 CHARGE NO: 09030-175-001
 SHIP VIA: FEDERAL PPD COLLECT
 VALUE: \$100.00
 COPY TO: M. Steffer

MATERIALS HANDLING USE ONLY			CARRIER		
NO. CTNS	WEIGHT	FREIGHT BILL NO.	DATE SHIPPED	DECLARED VALUE	SIGNATURE
					<i>Herbert D. Watkins</i>

DRAFT

March 17, 1993

The Honorable Hazel R. O'Leary
U.S. Secretary of Energy
Department of Energy
1000 Independence Avenue, NW
Washington, DC 20585

Dear Secretary O'Leary:

On behalf of the State of North Dakota, and as the administering agency responsible for North Dakota's R&D program, we want to advise you of our strong support for the Integrated Gasification Pressurized Fluidized-Bed (IGPFB) demonstration project, otherwise known as Milton R. Young Unit III, that was submitted by Babcock & Wilcox to the USDOE under Round V of the Clean Coal Technology Program.

The State of North Dakota has committed \$19 million to this \$425 million project and the local county is also expected to contribute 5% of their coal severance tax, pending final legislative action by North Dakota's 1993 Legislature. The necessary legislation has already unanimously passed the state Senate and favorable action by the state House of Representatives is expected in the next two weeks.

The IGPFB proposed project would utilize North Dakota lignite and demonstrate for the first time under the same structure, the operation, reliability and controllability of a pressurized fluidized bed combustor combined with the mild gasification process. If successful, the IGPFB demonstration project would achieve a 46% net cycle efficiency, which would result in a conversion efficiency increase of about 40% over today's traditional power plant. In addition, this highly efficient, super clean project would achieve emission performance goals for both SO₂ and NO_x at .1 lb/MM Btus, which is several times less than the standards required under the 1990 Clean Air Act.

Besides tremendous strides in efficiency and emission control standards, this IGPFB project would provide a unique diversity of method by "marrying" two advanced technologies; it would apply the technologies to the vast lignite resources of our country, which to date do not have a clean coal project; it would provide regional diversity since North Dakota represents various climatic, environmental, socioeconomic and regulatory conditions; and it would provide an excellent candidate for technology transfer to Eastern Europe which has almost exclusively low rank coal with characteristics most similar to North Dakota lignite.

In brief, the state of North Dakota believes this IGPFB project, if successfully demonstrated, has the potential to evolve into the next generation of power plants for the entire country.

We hope you will do everything you can to bring the proposed IGPFB project to reality.

Sincerely,

Ed Schafer
Governor

Heidi Heitkamp
Attorney General

Sarah Vogel
Agriculture Commissioner

cc: Senator Kent Conrad
Senator Byron Dorgan
Congressman Earl Pomeroy