

MEETING MINUTES
LIGNITE RESEARCH COUNCIL
July 23, 2009
Best Western Doublewood Inn, Bismarck, ND

MEMBERS (or their authorized alternates) PRESENT:

Wade Boeshans, BNI Coal, Ltd.
Charlie Bullinger, Great River Energy
Randel Christmann, North Dakota State Senate (District 33); Lignite Research Council Vice-Chairman
Pat Clement, ALLETE
Kevin Cramer, North Dakota Public Service Commission
Carroll Dewing, The Falkirk Mining Company
John W. Dwyer, Lignite Energy Council; Lignite Research Council Chairman
Bob Fagerstrom, Dakota Gasification Company
Layton Freborg, North Dakota State Senate (District 8)
Joe Friedlander, The Coteau Properties Company
Shane Goettle, North Dakota Department of Commerce
Carlyle Hillstrom, North Dakota Farm Bureau
Mike Jones, Ph.D., Energy & Environmental Research Center
Luther Kvernen, Minnkota Power Cooperative, Inc.
Ed Murphy, North Dakota Geological Survey
Terry O'Clair, North Dakota Department of Health
John Phillips, ND Coal Conversion Counties Association
Jan Rudolf, Otter Tail Power Company
Dave Smith, SaskPower
Andrea Stomberg, Montana-Dakota Utilities Co.
Jenny Tennant, U. S. Department of Energy – National Energy Technology Laboratory
Mark K. Thompson, Basin Electric Power Cooperative
Rich Voss, Great Northern Project Development
Bill Weaver, Dakota Westmoreland Corporation

OTHERS PRESENT:

Dave Allard, Lignite Energy Council
Steve Benson, Ph.D., University of North Dakota Department of Chemical Engineering
Jeff Burgess, Lignite Research Council
Karlene Fine, North Dakota Industrial Commission
Vicki Gilmore, Lignite Energy Council
Curtis Jabs, Basin Electric Power Cooperative
Todd Joyner, South Heart Energy Development
Chuck Kerr, Great Northern Project Development
Jim Sheldon, Basin Electric Power Cooperative
Renee Walz, Lignite Energy Council

Lignite Research Council (LRC) chairman John Dwyer called the LRC meeting to order at 12:08 Central Time) July 23, 2009, at the Best Western Doublewood Inn, Bismarck, ND.

Approval of May 19, 2009 LRC Meeting Minutes:

Dwyer asked for a motion to approve the minutes of the May 19, LRC meeting. Luther Kvernen so moved; seconded by Randel Christmann. Motion carried.

Program Financial Summary:

Karlene Fine, executive director and secretary of the North Dakota Industrial Commission (NDIC), briefly summarized the Lignite Research Program's (Program) available funding.

Available funding for the 2007-2009 biennium (as of 7/23/09) is \$40,793 for administration of the Program; \$416,621 for litigation; \$1,000,000 for non-matching feasibility studies (Lignite Energy Council Lignite Vision 21 Program, transmission, litigation, etc.); \$695,999 for small research projects; \$0 for marketing projects; and \$7,830,801 for demonstration projects. (The \$7,830,801 for demonstration projects does not include the commitment of \$16,053,807 over future biennia for the final phases of the Lignite Vision 21 Program projects (the Coal-to-Liquids project, the Spiritwood Energy project or the Great Northern Project Development project) and \$2,000,000 of committed funding for non-Lignite Vision 21 Program projects.)

Jeff Burgess, technical advisor for the NDIC and the LRC, summarized the Lignite Research, Development and Marketing Program (Program) financial information. From 1987 to present, there have been 128 small research projects (\$16.8 M from NDIC for the 128 projects; \$104 M total project costs; \$1 in state funds to \$6 total investment); 22 demonstration projects excluding Lignite Vision 21 Program (LV21P) projects (\$21.8 M from NDIC for the 22 non-LV21P demonstration projects; \$363 M total project costs; \$1 in state funds to \$17 total investment); and eight LV21P projects (\$22 M from NDIC; more than \$240 M total project costs.)

He said that the current technical advisor activities involve 29 projects (\$32 M from NDIC; \$515 M total project costs). There is one marketing project (\$2.4 M from NDIC; \$4.8 M total project costs); 13 small research projects (\$2.5 M from NDIC; \$38 M total project costs); and 14 demonstration projects: (\$7.4 M from NDIC for 11 non-LV21P projects; \$7.4 M total project costs; 236 M total project costs; and 19.3 M from NDIC for three LV21P projects; more than \$235 M total project costs).

Project Updates:

Burgess asked James Sheldon of Basin Electric Power Cooperative (BEPC) to give an update about BEPC's Antelope Valley Station "CO2 Capture Demonstration Project". Sheldon said it is expected to begin commercial operation by approximately January 2013.

Grant Round LXVII (67) Grant Application LRC-LXVII-A: "Annual Lignite Energy Council Education Seminar: Energy, Economics & Environment"; Submitted by: Lignite Energy Council; Principal Investigator: John W. Dwyer; Request for: \$156,000; Total Project Costs: \$312,000; Project Duration: 24 Months.

For this portion of the meeting that deals with the Lignite Energy Council's proposal (grant application LRC-LXVII-A), Dwyer turned over the chairmanship of the meeting to Randel Christmann, vice-chairman of the LRC.

Fine said that she had given this Lignite Energy Council proposal to two technical peer reviewers for their review. The proposal's objective is to educate teachers from North Dakota and neighboring states about the economic benefits, career opportunities and operations of the lignite industry, enabling teachers to educate their students about the lignite industry.

Fine said that the two technical peer reviewers gave the proposal an average weighted score of 217.5 out of 250 points. The weighted scores were 225 out of 250 points from reviewer 01-01 and 210 out of 250 points from reviewer 01-02. She said that both technical peer reviewers recommended that the project be funded.

Fine said that as Executive Director of the NDIC, her recommendation is that the proposal should be funded (small research project funds). The 2009 North Dakota Legislature expanded the Lignite Research Program's (Program) scope to include educational projects. Outreach to teachers who influence students and parents is a key to meeting Program priorities. She said that there is no cash match for this proposal, which is something that is generally required. She said that the contingency for funding is that documentation is to be provided of the in-kind match.

Fine said that the conflict-of-interest parties are the Lignite Energy Council members.

Renee Walz of the Lignite Energy Council gave a presentation in support of the proposal.

Christmann turned the chairmanship of the meeting back to Dwyer.

Grant Round LXVII (67) Grant Application LRC-LXVII-B: "Advanced Power Systems Initiative: Lignite Feasibility Study"; Submitted by: University of North Dakota Department of Chemical Engineering; Project Manager: Steven A. Benson, Ph.D.; Principal Investigators: Michael A. Mann, Ph.D. and Srivats Srinivasachar; Request for: \$400,000; Total Project Costs: \$400,000; Project Duration: 12 Months.

Burgess said that with this project, the University of North Dakota (UND) Department of Chemical Engineering proposes to determine the feasibility of constructing a clean advanced lignite-fired power system to produce steam and electricity for the UND campus which would replace the three subbituminous coal-fired stoker boilers on campus.

Burgess said that the three technical peer reviewers for this proposal gave the proposal an average weighted score of 178 out of 250 points.

The weighted scores were 181 out of 250 points from reviewer 09-7, 200 out of 250 points from reviewer 09-8 and 152 out of 250 points from reviewer 09-9. Technical peer reviewers 09-7 and 09-8 recommended that the project be funded; technical peer reviewer 09-9 recommended that funding may be considered.

As technical advisor, Burgess recommended that the project be funded. He said that the new lignite-fired power system for UND would replace Montana subbituminous coal with North Dakota lignite, and the new system would supply all steam and electrical needs not currently met by the aging system.

He said that the new system would also provide a good opportunity for future R & D projects, including testing of emission control technologies being advanced through both the UND Department of Chemical Engineering and the UND Energy & Environmental Research Center (EERC).

Burgess said that there are no conflict-of-interest parties for this proposal.

Steve Benson, Ph.D., of the UND Department of Chemical Engineering, gave a presentation in support of the proposal. He is project manager for proposal LRC-LXVII-B.

Motions re: Confidential Session; Open Session:

Dwyer called for a motion to close the meeting for confidential session regarding discussion about the Great Northern Project Development (GNPD) revision of application, and the Lignite Energy Council Lignite Vision 21 Program – Phase V Contract LMFS-07-39 application revision.

It was moved by Mark Thompson and seconded by Rich Voss that the Lignite Research Council meeting be closed pursuant to NDCC 54-17.5-06 to receive and consider a confidential revised scope of work regarding the “Lignite Vision 21 Feasibility Project Phase IV – Engineering, Business Development and Design” project of Great Northern Project Development and Allied Syngas Corporation - (revising the scope of work previously approved on Nov. 19, 2007 (proposed Contract FY08-LXII-161); and also to consider a revised scope of work and request for additional funding for the Lignite Energy Council Lignite Vision 21 Program – Phase V “Environmental Permitting & Transmission Plan Development of Lignite Vision 21 Projects” - (consideration of revisions to the scope of work and the approval of additional funding for three studies:

- 1) “Beneficiated Lignite Market Study”(\$150,000 in Lignite Research Fund non-matching dollars);
- 2) “A Study of Lignite-Based Advanced Generation Technology Systems” (\$140,000 in Lignite Research Fund non-matching dollars); and
- 3) ”A Study of Carbon Dioxide Capture Technologies and Costs Associated with Lignite-Based Electrical Generating Stations” (\$462,000 in Lignite Research Fund non-matching dollars). (The previously approved project costs were in the amount of \$851,000. Request for an additional \$752,000 in Lignite Research Fund non-matching dollars = \$150,000 for the first study, \$140,000 for the second and \$462,000 for the third.)

The confidential session began at 12:58 p.m. and ended at 2:18 p.m. Dwyer called for a motion to adjourn the closed session and return to open session. Christmann so moved; seconded by Luther Kvernen. The meeting returned to open session.

Use of Additional Non-Matching Lignite Research Funds for Three Studies:

Burgess said that through the existing Lignite Energy Council LV21P contract LMFS-07-39 with NDIC, the three studies are planned as follows:

- 1) “Beneficiated Lignite Market Study” - (a regional beneficiated lignite marketing study); contractor: an EERC and Worley Parsons team; duration of study: 8/1/09 – 4/30/10 (9 months); cost: \$150,000 from NDIC plus \$75,150 from EERC and the U. S. Department of Energy = \$225,150 total project cost;
- 2) “A Study of Lignite-Based Advanced Generation Technology Systems” - (technology characterization for new lignite-fueled electrical generating plant); contractor: a Burns & McDonnell and Microbeam Technologies, Inc. team; duration of study: 8/1/09 – 1/31/10 (6 months); cost: \$140,000 from NDIC; and
- 3) “A Study of Carbon Dioxide Capture Technologies and Costs Associated with Lignite-Based Electrical Generating Stations” - (carbon capture technologies for lignite-fueled power plants); contractor: The Shaw Group (Stone & Webster, Inc.); duration of study: 8/1/09 – 3/31/10 (8 months); cost: \$462,000 from NDIC.

Burgess said that contingent upon recommendation from the LRC at today’s (7/23/09) meeting and approval on 7/31/09 from the NDIC, the three contracts will be executed under Lignite Energy Council LV21P contract LMFS-07-39.

Ballot Results re: Recommendations for NDIC to Approve Funding

Dwyer announced the results of the LRC's confidential ballots concerning the LRC's recommendations for the NDIC to consider funding, as follows:

Grant Round LXVII (67) Grant Application LRC-LXVII-A: “Annual Lignite Energy Council Education Seminar: Energy, Economics & Environment”; Submitted by: Lignite Energy Council; Principal Investigator: John W. Dwyer; Request for: \$156,000 (Lignite Research Fund/Small Research Project Funds); Total Project Costs: \$312,000; Project Duration: 24 Months. -

Fund: 23 votes. **Do Not Fund:** 1 vote.

Grant Round LXVII (67) Grant Application LRC-LXVII-B: “Advanced Power Systems Initiative: Lignite Feasibility Study”; Submitted by: University of North Dakota Department of Chemical Engineering; Project Manager: Steven A. Benson, Ph.D.; Principal Investigators: Michael A. Mann, Ph.D. and Striates Srinivasachar; Request for: \$400,000 (General Fund Dollars); Total Project Costs: \$400,000; Project Duration: 12 Months. -

Fund: 22 votes. **Do Not Fund:** 2 votes.

“Lignite Vision 21 Great Northern Power Development/Allied Syngas Corporation Feasibility Project - Phase IV” – Consideration of a request from Great Northern Project Development and Allied Syngas Corporation to revise the scope of work previously approved on November 19, 2007. (Proposed Contract FY08-LXII-161). Total Project Costs: \$28,300,000; Request remains the same at \$7,328,807. -

Fund: 20 votes. **Do Not Fund:** 4 votes.

“Lignite Vision 21 Program - Phase V “Environmental Permitting & Transmission Plan Development of Lignite Vision 21 Projects” – Consideration of revisions to the scope of work, and the approval of additional funding for the following three studies: 1) “Beneficiated Lignite Market Study”(\$150,000; 2) “A Study of Lignite-Based Advanced Generation Technology Systems” (\$140,000); and 3) “A Study of Carbon Dioxide Capture Technologies and Costs Associated with Lignite-Based Electrical Generating Stations” (\$462,000). Total Previously Approved Project Costs: \$851,000; Request for an additional \$752,000 (Lignite Research Fund Non-Matching Dollars). -

Fund: 21 votes. **Do Not Fund:** 3 votes.

NDIC Meeting – July 31, 2009:

Dwyer said that LRC's recommendations concerning the requests will be considered by the NDIC at its meeting scheduled for July 31, 2009.

Grant Application Deadline Dates; Next LRC Meeting:

The next grant application deadline date is October 1, 2009. The next LRC meeting will be held at 12:00 p.m. (CST) November 17, 2009, at the Best Western Doublewood Inn, Bismarck.

Adjournment:

There being no further business, Dwyer requested a motion to adjourn the LRC meeting. Mike Jones so moved; seconded by Bill Weaver. Motion carried. The meeting adjourned at 2:40 p.m. July 23, 2009.

Vicki Gilmore, Recording Secretary
