

TECHNICAL REVIEWERS' COMMENTS
With Applicant's Response
LRC-LXXIX (79) – C
"Annual Lignite Energy Council Education Program"

1. **OBJECTIVES**

The objectives or goals of the proposed project with respect to clarity and consistency with North Dakota Industrial Commission/Lignite Research Council goals are: 1 – very unclear; 2 – unclear; 3 – clear; 4 – very clear; or 5 – exceptionally clear.

Reviewer 01-01 (Rating 5)

Well thought out plan for educational program that supports LECs goals of promoting the product and encouraging employment in the industry.

Reviewer 01-02 (Rating 4)

The applicant does well explaining the need for the project. The purpose is to inform and enrich teachers about the benefits of lignite and the opportunities the industry presents to students as future workforce.

2. **ACHIEVABILITY**

With the approach suggested and time and budget available, the objectives are: 1 – not achievable; 2 – possibly achievable; 3 – likely achievable; 4 – most likely achievable; or 5 – certainly achievable.

Reviewer 01-01 (Rating 4)

Surveying of past participants indicates that the seminar produces favorable impressions of the industry and that the majority of the participants incorporate the information into their teaching plans.

Reviewer 01-02 (Rating 3)

The proposed budget information right below the first table on the budget page leaves off the \$8,000 that is to come from other sponsors. Suggest that be corrected.

The objectives seem achievable if they stay in budget.

Lignite Energy Council response:

To help address the question regarding the \$8,000 seemingly missing from the expenses, we have updated the budget and included that \$8,000 income in the Applicant's Share. The \$8,000 in Other Sponsors income noted in the income portion at the top of the budget was the Petroleum Council's cash share of the North Dakota Energy Tour. The North Dakota Energy Tour costs about \$16,000 to host and the Lignite Energy Council and Petroleum Council split those costs. Therefore, the Applicant's Share of the North Dakota Energy Tour really is \$16,000. I hope that addresses that question.

3. **METHODOLOGY**

The quality of the methodology displayed in the proposal is: 1 – well below average; 2 – below average; 3 – average; 4 – above average; or 5 – well above average.

Reviewer 01-01 (Rating 4)

Four-day seminar employs several methods - tours of mines and coal conversion facilities, presentations and panel discussions on relevant issues.

Reviewer 01-02 (Rating 3)

The seminar states it places an emphasis on technology yet doesn't specify how exactly other than the Automated Response System. It does not specifically say what the emphasis is. The proposal also mentions "by the way of the education website" but gives no other details about said website or its

features, benefits, etc. While mention of the studies and favorability is interesting, the proposal provides no insight on how those numbers were improved.

Lignite Energy Council Response:

The reviewer commented on the Seminar's emphasis on technology but the application did not specify technology used other than the Audience Response System. I believe this is a miscommunication as the application references the importance of technology used in electricity generation from coal. It was not intended to emphasize technology used in the teaching process; rather, to discuss the role research and development plays in improving the technology used in today's power plants and mines. However, it should be noted that the Lignite Energy Council is researching ways to bring new technological methods of instruction to our education program.

4. **CONTRIBUTION**

The scientific and/or technical contribution of the proposed work to specifically address North Dakota Industrial Commission/Lignite Research Council goals will likely be: 1 – extremely small; 2 – small; 3 – significant; 4 – very significant; or 5 – extremely significant.

Reviewer 01-01 (Rating 3)

Grant request addresses goals to promote product and industry, and addresses workforce needs.

Reviewer 01-02 (Rating 2)

I think the results of the ARS poll are very telling. While favorability on topics improved, they did not improve as much as I would have expected. After a seminar I would want to see 75-85% favorability in polled responses in order to feel the seminar accomplished the goals of LRC. Would want to see questions more specific to LRC goals.

Lignite Energy Council Response:

The reviewer wondered how the favorability numbers were improved. Simply put, the participating teachers indicated that their favorability of coal increased through instruction they received during the Seminar.

5. **AWARENESS**

The principal investigator's awareness of other current research activity and published literature as evidenced by literature referenced and its interpretation and by the reference to unpublished research related to the proposal is: 1 – very limited; 2 – limited; 3 – adequate; 4 – better than average; or 5 – exceptional.

Reviewer 01-01 (Rating 4)

LEC's mission is to assist in marketing as well as research and development activities for the lignite industry.

Reviewer 01-02 (Rating 4)

Only received this score because the proposal expressed the need to expand and cultivate new research and promotional videos. The investigator is aware of the need for new, updated materials.

6. **BACKGROUND**

The background of the investigator(s) as related to the proposed work is: 1 – very limited; 2 – limited; 3 – adequate; 4 – better than average; or 5 – exceptional.

Reviewer 01-01 (Rating 4)

LEC is the regional trade association. Staff members serve as industry advisors and have experience managing seminar activities.

Reviewer 01-02 (Rating 5)

Very well detailed. One of the best portions of the proposal

7. **PROJECT MANAGEMENT**

The project management plan, including a well-defined milestone chart, schedule, financial plan, and plan for communications among the parties involved in the project, is: 1 – very inadequate; 2 – inadequate; 3 – adequate; 4 – very good; or 5 – exceptionally good.

Reviewer 01-01 (Rating 3)

The grant proposal includes a budget, indicates what the plans are for promoting the seminar, and the educational methods that will be employed. It also indicates that the program is in transition, with new methods and resources being added. Specific milestones and schedules not provided.

Reviewer 01-02 (Rating 3)

I don't feel like this is presented at all as far as a milestone chart. Budget, dates and presenters are listed but not in one main section of the proposal. They are all scattered throughout the proposal. I feel like this could be better organized.

8. **EQUIPMENT PURCHASE**

The proposed purchase of equipment is: 1 – extremely poorly justified; 2 – poorly justified; 3 – justified; 4 – well justified; or 5 – extremely well justified. (Circle 5 if no equipment is to be purchased.)

Reviewer 01-01 (Rating 5)

No equipment purchase. Service purchases are justified.

Reviewer 01-02 (Rating 4)

The Go-Box is proposed but it is unclear if this will happen or just a proposal. However, it is listed in the budget. So if attainable, it sounds like a good purchase.

9. **FACILITIES**

The facilities and equipment available and to be purchased for the proposed research are: 1 – very inadequate; 2 – inadequate; 3 – adequate; 4 – notably good; or 5 – exceptionally good.

Reviewer 01-01 (Rating 4)

Facility, management and promotional expenses all appear to be appropriate.

Reviewer 01-02 (Rating 5)

BSC is a great facility

10. **BUDGET**

The proposed budget value relative to the outlined work and the financial commitment from other sources is of: 1 – very low value; 2 – low value; 3 – average value; 4 – high value; or 5 – very high value.

Reviewer 01-01 (Rating 4)

Seminar budget is realistic. When you consider the one-time expense of training each teacher is multiplied by the number of students the teachers will share the information with, expenses even more reasonable.

Support provided by sponsors including LRC support is greater than 50 percent of the educational seminar budget.

Lignite Energy Council Response:

I appreciate the reviewer's comment and it gave me pause to consider that we have not adequately publicized the costs off-set by the in-kind support received from the industry. In future applications, the Lignite Energy Council will provide a breakdown of what the actual costs associated with the in-kind support we get from the industry as if we were to pay those expenses out-of-pocket including items such as dragline down-time, tour guides, time and travel for industry speakers and representatives.

Reviewer 01-02 (Rating 3)

I don't feel I have a great grasp of "value" in this case. However, I would like a better understanding of presenters--if it is only the three listed I feel like there should be opportunities for more speakers. As noted previously there is an error on the budget page.

Lignite Energy Council Response

Reviewer 01-02 requested opportunities for more speakers. I failed to adequately explain the Seminar format and include a draft agenda which would have addressed the Reviewer's concerns. The Lignite Energy Council's Lignite Seminar and ND Energy Tour feature more than 20 professionals from within and outside of the industry that provide instruction and presentations. Additionally, the Lignite Energy Council is required to adhere to the North Dakota University System's requirement that a minimum of 75% of instructional time be provided by individuals with a master's degree or higher. I have attached the 2015 Teachers Seminar Agenda, of which the 2016 Seminar will be based upon. (Attachment A)

We have reviewed the budget and see how there would have been confusion, I hope to be able to clear that up with the revised budget attached (Attachment B) and with some explanation. As noted in this year's application, the Lignite Energy Council is no longer applying for a grant for just the Lignite Education Seminar; rather, the budget and application are intended to cover a fully-encompassing Education Program. Because of this program expansion and inclusion, it becomes difficult to really piece out education expenses that are only dedicated to one part or piece of the program when really most efforts will be used to support all facets of the program. For example, in the management and administrative expenses, that total is not reflective of just the Seminar or just the Energy Tour, but rather the program as a whole.

OVERALL COMMENTS AND RECOMMENDATIONS:

Please comment in a general way about the merits and flaws of the proposed project and make a recommendation whether or not to fund.

Reviewer 01-01 (Rating: FUND)

Recommend that the grant application for LEC's seminar be funded.

This is an established program that appears to be successful in its goal of providing educators with a favorable impression of the industry, and that the majority of the educators are incorporating the information and resources provided into lesson plans. There, however, does not seem to be a means in place of measuring whether or not there is any impact on the students' impressions of the industry or if the program has had any impact on growing the industry's workforce.

Reviewer 01-02 (Rating: FUND)

I think the seminar is a great opportunity to educate professional educators about the benefits of the lignite industry - however I would like to see a better variety of speakers and improved results from the polls of attendees. I do think the Commission should fund the project but should look heavily at improving educational materials (videos) and continue with sharing of quality lesson plans in order to have higher marks for lesson plan integration.



**2015 Lignite Education Seminar:
Energy, Economics & Environment
June 15 – 18, 2015**

Monday, June 15

- 7:45 a.m. **Registration** begins – National Energy Center of Excellence (NECE),
Bismarck State College – Fourth Floor
- 9:00 a.m. Welcome, Introductory Remarks and Pre-Test
**Kay LaCoe, Communications & Education Coordinator, Lignite
Energy Council**
- 9:30 a.m. *Lignite: The Region's Best Kept Secret*
**Steve Van Dyke, Vice President of Communications, Lignite Energy
Council**
- 10:30 a.m. **Break**
- 10:45 a.m. *North Dakota Geology*
Ned Kruger, Subsurface Geologist, ND Geological Survey
Chocolate Chip Cookie Mining
- 12:00 p.m. **Lunch**
- 1:00 p.m. *Lignite Mining and Reclamation Process*
Jessica Unruh, Environmental Specialist, The Coteau Properties Co.
Freedom Mine
- 2:30 p.m. **Break**
- 2:45 p.m. *Lignite Industry Career Choices*
Kent Ellis, Special Projects Coordinator, Bismarck Public Schools
- 4:00 p.m. **Wrap-up – Day 2 Preview**
Introduction to North Dakota Energy Curriculum
Emily McKay, Director, Great Plains Energy Corridor
- Tour of the Power Plant Program Facilities**
- 5:30 p.m. **Dinner**

Tuesday, June 16

- 7:00 a.m. **Breakfast – NECE**
- 8:00 a.m. *Electricity Generation Choices*
John Weeda, Director of North Dakota Plant Operations, Great River Energy
- 9:15 a.m. **Break**
- 9:30 a.m. *Transmission – Transporting Electricity by Wire*
Matthew Stoltz, Manager Transmission Services, Basin Electric Power Cooperative
- 10:30 a.m. **Break**
- 10:45 a.m. *Enhancing Lignite’s Future through Research & Development*
Mike Jones, Vice President of Research & Development, Lignite Energy Council
- 12:30 p.m. **Lunch**
- 1:15 p.m. *Plant Level Environmental Compliance*
Craig Bleth, Plant Environmental and Engineering Manager, Minnkota Power Cooperative, Inc.
- 2:30 p.m. **Break**
- 2:45 p.m. *Economics and Electricity 101*
Brian Kalk, North Dakota Public Service Commissioner, State of North Dakota
- 3:30 p.m. **Break**
- 3:45 p.m. *Energy and CO2 Management: Carbon Capture and Storage*
Dan Daly, Plains CO2 Reduction Partnership, Energy & Environmental Research Center, University of North Dakota
- 5:00 p.m. **Wrap-up – Day 3 Preview**
- 5:30 p.m. **Dinner**

Wednesday, June 17

- 6:15 a.m. **Breakfast at BSC Student Union**
- 7:00 a.m. Load buses in front of Student Union
- 7:15 a.m. Buses leave for *Coal Country Tour*
- Group One**
- 9:00 a.m. Tour Freedom Mine
- 11:15 a.m. Bus leaves for Antelope Valley Station
- 11:30 a.m. Tour Antelope Valley Station
- 1:00 p.m. Bus leaves for Great Plains Synfuels Plant
- Group Two**
- 8:15 a.m. Tour Falkirk Mine
- 10:45 a.m. Bus leaves for Coal Creek Station
- 11:00 a.m. Tour Coal Creek Station
- 12:45 p.m. Bus leaves for Great Plains Synfuels Plant
- Group Three**
- 8:15 a.m. Tour Center Mine
- 10:45 a.m. Bus leaves for Milton R. Young Station
- 11:00 a.m. Tour Milton R. Young Station
- 12:45 p.m. Bus leaves for Great Plains Synfuels Plant
- 1:15 p.m. **Lunch** at Great Plains Synfuels Plant
- 1:45 p.m. *Synfuels Production from Lignite*
Laura Dronen, Process Engineering Supervisor
- 2:15 p.m. Tour Great Plains Synfuels Plant
- 3:15 p.m. Depart for Bismarck, ND
- 5:00 p.m. Evening on your own

Thursday, June 18

- 7:00 a.m. **Breakfast – NECE**
- 8:00 a.m. *Conservation and Energy-Efficiency*
Jason Grenier, Manager Market Planning, Otter Tail Power Company
- 9:00 a.m. **Break**
- 9:15 a.m. **Workforce Issues and Needs Panel**
- 11:00 a.m. **Break**
- 11:15 a.m. *From the Mine to the Electric Line – Making Connections*
Wade Boeshans, President, BNI Coal, Ltd.
- 12:15 p.m. **Lunch**
- 1:00 p.m. **Post Test**
- 1:30 p.m. *Lesson Plan Collaborative Work*
Terry Hagen, Professor, University of North Dakota
- 2:30 p.m. **Seminar adjourns**



Lignite Energy Council Education Program Budget

9/22/2015

Income

	LRC Share	Applicant's Share	Applicant's In-Kind
Teachers' Seminar	\$80,000	\$40,000	\$40,000
North Dakota Energy Tour		\$16,000	
Additional Outreach (Materials & Efforts)	\$20,000	\$5,000	\$10,000
TOTAL	\$100,000	\$61,000	\$50,000

TOTAL EXPENSES	\$211,000
Total grant request	\$100,000
Lignite Energy Council	\$111,000

Expenses

Facility Costs for Teachers Seminar		
• Meals	\$16,000	
• Dorm Rooms	\$7,200	
• Administration	\$2,600	
• Facility Rental	\$2,000	
• Audio	\$800	\$28,600
Recruitment Efforts		
• Brochures	\$2,500	
• Postage	\$2,500	
• Advertising	\$500	\$5,500
Credits (\$100/teacher – est. 130 teachers)		
• NDSU, UND and MSU	\$13,000	\$13,000
Transportation/Participant Networking		
• Bus transportation	\$9,200	
• Entertainment/Lodging	\$12,000	\$21,200
Management/Administrative Expenses		
• Program management	\$54,000	
• Instructor of Record	\$2,500	
• Professional services	\$20,000	\$76,500
Materials & Supplies		
• Go-Boxes	\$2,000	
• Lesson plan creation	\$2,000	
• Classroom material	\$5,000	\$9,000
Miscellaneous Expenses		
• Speaker Fees and Transportation	\$1,200	
• Audience response/research	\$500	
• Office expenses/Overhead	\$36,000	
• Additional staff resources	\$5,000	
• Contingency	\$14,500	\$57,200
TOTAL EXPENSES		\$211,000