

TECHNICAL REVIEWERS' RATING SUMMARY

G-013-C

North Dakota Petroleum Council Teacher Education Seminar

Submitted by North Dakota Petroleum Council

Principal Investigator: Ron Ness

Request for \$17,900; Total Project Costs \$35,800

Rating Category	Weighting Factor	Technical Reviewer			Average Weighted Score
		13C-5	13C-6	13C-10	
Objective	9	4	4	5	39.0
Availability	9	5	4	5	42.0
Methodology	7	4	3	4	25.7
Contribution	7	3	4	4	25.7
Awareness	5	2	3	4	15.0
Background	5	4	3	4	18.3
Project Management	2	3	3	4	6.7
Equipment Purchase	2	5	5	5	10.0
Facilities	2	4	4	4	8.0
Budget	2	4	3	4	7.3
Average Weighted Score		192	181	220	197.7
Maximum Weighted Score					250
 <u>OVERALL RECOMMENDATION</u>					
FUND		X	X	X	
<hr/> FUNDING TO BE CONSIDERED <hr/>					
DO NOT FUND					

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

Reviewer 13C-05 (Rating: 4)

Educating teachers about the economic benefits and career opportunities provided by the North Dakota oil and gas industry enabling them to educate their students about the industry is a very clear goal. There are few ways teachers can learn about the industry in this hands-on manner and teaching the youth of today will educate the voters of tomorrow.

Reviewer 13C-06 (Rating: 4)

The project objective is to educate teachers about the economic benefits and career opportunities of the ND O&G industry enabling the teachers to educate their students. This objective is consistent with the NDIC O&G objective to educate the general public about the benefits and opportunities of the ND O&G industry.

Reviewer 13C-10 (Rating: 5)

This is a very important activity to educate teachers and students about one of the State's most important industries.

2. 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 13C-05 (Rating: 5)

The objectives appear very achievable. Hosting the seminar at BSC is a very inexpensive way to hold a seminar with excellent facilities. Dorms are provided for teachers lodging and meals are provided in the Student Union. This all adds up to a low-cost seminar. Three days (or 2 ½) gives the teachers plenty of time to learn new things.

Reviewer 13C-06 (Rating: 4)

The approach and budget is based on several years of experience with teacher seminars and therefore is most likely achievable.

Reviewer 13C-10 (Rating: 5)

The education, materials and follow-up materials will help teachers educate our youth.

3. 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 13C-05 (Rating: 4)

The methodology appears to be sound using experts in the field and visiting a drilling rig, oil and gas producing well, gas plant and reclaimed well sites and the refinery with industry representatives informing the teachers about what they are seeing. This hands-on method provides a great learning experience.

Reviewer 13C-06 (Rating: 3)

The quality of the methodology is average. A few tools and techniques not discussed in the proposal could enhance education for the teachers, thereby improving awareness of the public benefits derived from the O&G industry.

Reviewer 13C-10 (Rating: 4)

The only thing I would question is if the early start time on Monday – 8:30 a.m. – prevents teachers from far distances from attending.

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

Reviewer 13C-05 (Rating: 3)

Educating the general public (teachers) about the benefits and opportunities provided by the North Dakota oil and gas industry can only benefit us all. And teachers, in turn, teach our young people who may help them decide on careers that will keep them in the State of North Dakota. Careers in the energy industry in this state are generally well-paying jobs and our youth need to know that. They also need to know that there will be many job opportunities available in this field in the not too distant future due to many retirements.

Reviewer 13C-06 (Rating: 4)

While the scientific contribution of the proposed work is limited, the contribution to specifically address the NDIC O&G goal to, “Promote Public Awareness” can be very significant.

Reviewer 13C-10 (Rating: 4)

On target.

5. The principal investigator’s awareness of 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 13C-05 (Rating: 2)

I think there would be limited research available on how to conduct a teacher seminar of this nature other than to observe other seminars.

Reviewer 13C-06 (Rating: 3)

Evidence of the PI’s awareness is limited in the proposal. However, the PI, (Ron Ness), Petroleum Council and Primary Instructor (Lynn Helms) are known to be aware of current activities.

Reviewer 13C-10 (Rating: 4)

No comment

6. 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 13C-05 (Rating: 4)

Ron Ness who is President of the ND Petroleum Council has a background of working in the petroleum field for several years. He has also been conducting this seminar for several years so has the experience necessary to organize and facilitate the seminar.

Reviewer 13C-06 (Rating: 3)

Resumes containing a list of publications for the project manager and primary instructor would enhance this proposal.

Reviewer 13C-10 (Rating: 4)

The speakers are knowledgeable.

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

Reviewer 13C-05 (Rating: 3)

The management plan is good. Having put on this seminar for 15 years, the staff certainly knows what it takes to conduct a seminar. Even though the seminar only lasts for three days, it takes many days of work to complete all the things that need to be done to organize a top-notch seminar. The budget proposed is adequate for two years of expenses. There is really no milestone chart or plan for communications among the investigator and those involved in the seminar but one can tell by the plan that communications will happen with those involved in order to put on a seminar of this type.

Reviewer 13C-06 (Rating: 3)

The project plan may be adequate considering the organization has experience with past seminars. However, milestone charts, schedules, financial plans and plans for communications are standard management tools used to enhance projects and facilitate accomplishing project goals.

Reviewer 13C-10 (Rating: 4)

My only question is how the seminar is advertised to educators so that an adequate number attend.

North Dakota Petroleum Council's Response

The Petroleum Council directly mails the seminar registration pamphlet to 1,200 teachers. We target 4th grade, and 7th – 9th grade math, science, and history teachers. We also advertise in the Teacher's Network System. In addition, every principal in the state receives a pamphlet to post in the school, as well as the previous year's participants. Kent Ellis also distributes them throughout his many functions at schools across the state.

8. 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 13C-05 (Rating: 5)

It does not appear that any equipment will be purchased – just materials to give to the teachers.

Reviewer 13C-06 (Rating: 5)

No comment

Reviewer 13C-10 (Rating: 5)

No comment

9. 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 13C-05 (Rating: 4)

The facilities and equipment available at BSC for the seminar are excellent and work very well for a seminar of this type. BSC is very accommodating to groups using their facility and provide

wonderful service, particularly the food service. People always comment that the food is great and the people very good to work with.

Reviewer 13C-06 (Rating: 4)

Field trips to production and drilling wells and the Mandan Refinery tour are examples of notably good facilities. What facility is used for classroom lectures and activities?

Reviewer 13C-10 (Rating: 4)

A challenge at many seminars (and bus & field trips) is adequate speaker system. If this is covered, great! If not, please consider.

10. The proposed budget “value”¹ 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. (See below)

Reviewer 13C-05 (Rating: 4)

The budget value is excellent. Teachers go away with lots of new information and lots of materials to take back to the classroom with them. This provides hands on material for the students to use and learn from. It is hard to put a value on educating our students and hopefully this seminar will help keep some of our youth in North Dakota.

Reviewer 13C-06 (Rating: 3)

The budget is of average value. A bulk of the industry contribution is the “Tidbits”. Excluding the Tidbits, the O&G contribution is \$5,900. Would the Tidbits be published if the seminar were not held? Are the Tidbits provided to all new and past seminar teachers? Do the Tidbits contain educational hints for the classroom?

North Dakota Petroleum Council’s Response

The industry contribution is significant. In addition to the direct financial commitment of half of the identified expenses, the staff time spent over the year on this program is considerable. The time committed during the seminar by industry professionals is substantial. On the second day of the seminar last year, we had more than 30 industry representatives commit an entire workday to the seminar and personally drive the teachers from site to site and give presentations.

In response to the question, “Would the Tidbits be published if the seminar were not held?” Yes, this is a new aspect of our education program and could stand alone.

In response to the question, “Are the Tidbits provided to all new and past seminar teachers?” The answer is no, but this is a great idea and we will add the teachers from the previous two years and continue to add them to the distribution list each year.

Reviewer 13C-10 (Rating: 4)

The value is high when considering all the resources to run the three day seminar.

Section C. 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 13C-05 (FUND)

The seminar is laid out in a manner that will keep the teachers busy learning without being boring. They will have hands-on activities and field trips in addition to the classroom lectures.

Variety is what teachers like as they are not used to sitting in a classroom listening. They could maybe use more than one primary speaker as the same speaker can get monotonous and I'm sure they could find other experts to come in and share with the teachers. However, the agenda provides enough variety to keep the teachers interested. This seminar should be funded.

Reviewer 13C-06 (FUND)

A seminar can be an exceptionally effective tool to increase public awareness. The ability of the teacher to obtain graduate credit is a positive factor for the seminar and teacher. How many teachers take advantage of this opportunity? Is the teacher submitting the most outstanding lesson plan recognized in their classroom/school? How is the seminar marketed to the teacher, O&G industry and general public? Are records developed on the number of teachers incorporating a ND O&G unit into their lesson plans? How many teachers have attended to seminar and how many students have been reached through the teachers? Students in the fourth grade are 10 or 11 years old. These students will become active participants in the 'general public' in 10 years. Can a method be used to involve student/parent pairs in activities to broaden and shorten the impact on public awareness? A method to evaluate the impact on teachers taking the seminar is to give the attendees pre and post tests. Pre and post tests and forms completed by the teachers evaluating the various seminar components, instructors and tours are effective tools to determine the efficacy of the seminar. In additions, these tools are an effective way to improve the quality of the seminar.

The project is a good program and a sound approach to impact public awareness. Measure the projects success and proudly market your achievements.

North Dakota Petroleum Council's Response

These are excellent questions. About 95% of the teachers attending take the seminar for credit. There have been 549 teachers that have registered for the three-day seminar over the past 15 years. We do not have the data to roll that number into the number of students reached. We also have not specifically tracked the continued use of the information in their classrooms. The teachers who take the seminar for credit must submit a lesson plan, so we do get to see how they plan to incorporate the information into their classrooms. We have each participant evaluate the course at the end of the session and the response has been very positive. This year, we will attempt to have the registrants take a simple quiz at the beginning of the seminar and then take the same at the completion of the seminar. We will use polarizing questions that we commonly hear from the public. This may shed some insight on current or future challenges for our industry.

Reviewer 13C-10 (FUND)

This seminar is well planned and will be a great asset for all educators in North Dakota.

¹ "Value" – The value of the projected work and technical outcome for the budgeted amount of the project, based on your estimate of what the work might cost in research settings with which you are familiar.

Financial commitment from other sources – A minimum of 50% of the total project must come from other sources to meet the program guidelines. Support less than 50% from Industrial Commission sources should be evaluated as favorable to the application.