MESA STATE COLLEGE

AY 2007 – 2008
Program Review

Electric Lineworker

A. Program Overview

The Electric Lineworker Program is a certificate only program offering a Technical Certificate in Electric Lineworker.

The Electric Lineworker Program began over 30 years ago. Initially Mesa College had hosted a regional Hot Line School for a few years. Industry leaders asked if the college would put together a certificate program to provide trained entry level workers for the industry. The program was started with substantial industry support and has continued to receive considerable support material and equipment donations.

The curriculum has been updated periodically to reflect changes in the industry. A major revision was completed in 2006 and the program has been approved by the Colorado Community College System (CCCS) for many years. In the spring of 2007 the curriculum was submitted to CCCS for inclusion in the Common Course Numbering System that is utilized by community colleges throughout the state when programs are replicated at other schools. That inclusion is pending.

B. Program Goals and Objectives

"Mesa State College shall also maintain a community college role and mission, including vocational and technical programs. Mesa State College shall receive resident credit for two-year course offerings in its commission-approved service area."

Program Goals
The overall program goals for the Electric Lineman program at WCCC are:

- Provide the students with the skills necessary to become productive employees in the utility distribution industry in our service area.
- Work with utility industry stakeholders to continually enhance the quality and timeliness of technical content of the curriculum.
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Program Objectives
The program objectives that flow from these goals are aligned with the role and mission of Mesa State College which allows students and faculty to:

- Practice a commitment to student learning and achievement, including, but not limited to applying basic through advanced technology theory, demonstrating hands-on skills, problem solving techniques, using multiple strategies,
- Demonstrate subject matter knowledge and providing contextual learning activities,
- Manage and monitor student learning, based upon best practice including
- Organize teaching practices and learn from experiences and interact with professional associations,

- Use technology and concepts to enhance learning and personal/professional productivity including, but not limited to, implementing curriculum that includes technology-enhanced methods and strategies, applying technology to a variety of assessment and evaluation strategies;

Analysis of Need for the Program

Enrollment rates have been steady, which also reflects the demand for workers with the training and skill set that graduates of this program will possess, although, with added support, we know the pool of potential students is larger than our enrollments. Our graduation and placement rates are very good in relationship to the type of student that enters our program.

*	Spring 2003	Fall 2003	Spring 2004	Fall 2004	Spring 2005	Fall 2005	Spring 2006	Fall 2006	Spring 2007
Enrollments	21	31	24	28	29	30	27	35	29
Graduation	19		25		26		28		29

The utility companies that hire lineworkers have continuously been in need of new workers willing and able to enter the workforce. The companies that form the program advisory committee have always expressed a need for new workers and have specifically been demanding workers with the skills that are provided through this program. Anecdotal evidence has been provided by industry managers that indicate a rapid departure of aging workers. Many of the baby boomer generation have reached retirement age and are leaving the workforce through retirement programs but continuing to work in less physically demanding environments. The impacts of retirement on the lineman workforce are not expected to end in the foreseeable future.

C. **Narrative Summaries of Resources**

i) The unique characteristics of the program require an extensive resource base to be able to function properly. The variety of equipment and facilities needed will always be a challenge to the college but industry support has been sufficient to make the program effective and sustainable.

ii) Faculty and Staff

Until the fall of 2006 the program has always functioned with a single full time faculty member. At that time an instructional assistant was added so that additional students could be accommodated without sacrificing safety. The program continues to have a full time faculty member and an instructional assistant. Both individuals have over 30 years of full time lineman work experience and corporate training on the job training background

iii) Physical Facilities

The physical plant available to the program is quite sufficient for the needs of the program. There is plenty of open space for the needs of lineman training and additional space exits for the installation of additional training options. The building is only partially used for the program and provides optional space if the need arises.

iv) Instructional Equipment

It is not possible to have every piece of equipment that may be in use in the lineman work place. However, the equipment available to this program is quite extensive and provides students with an extensive background in lineman work. The trucks available are not new and need updating to provide the best experience for students. The program did acquire a used bucket truck during the summer of 2007 that will improve safety and instruction. Utility companies have been very generous in providing tools for use in the program and continue to indicate a willingness to keep new tool available for training.

v) Library

Library support is adequate and provides good reference materials to support the core competencies. The changing technical skills need additional asynchronous curriculum and course development. The WCCC campus has need of a dedicated student computer to supplement and augment class/ library support.

D. **Effectiveness**

i. Assessment of student academic achievements within the program includes the assessment process of Mesa State College.
ii. The best indicator of the success of the program is the employment history of graduates. All graduates that can be accounted for have gone to work in the industry as soon as they complete their course work. Industry representatives continue to aggressively pursue our graduates for employment and indicate a high level of satisfaction with the performance of our graduates.
iii. Each year our students perform very well in the Hot Line Rodeo and have won competitions among student delegations during most of these annual events.

E. **Strengths Identified by the Review**

i. The strengths identified by our internal review include strong support from our business advisory council and their willingness to hire graduates.
ii. Additionally, the program is enhanced by the quality and commitment of the faculty in scholarship, advising, service and professional development. The student's evaluations attest to the quality of education they are receiving.
iii. The equipment available for training is exceptional. The space and physical plant is outstanding.

F. Areas Needing Strengthening Identified by Review

i. We know that there is a pool of qualified students in our service area and we need to develop a recruiting plan to reach out to those interested. We need to improve our recruiting efforts and work with our industry advisors to increase the number of students that enter the program each year.

G. Vision

i. The Electric Lineman program is a very successful program that is helping to alleviate a shortage of trained and available workers for the utility industry. The program can be expanded to provide more graduates with very little additional personnel or other resources. It is the intention of the program to expand as much as possible during the next three years

Appendix A

Program Statistics

Table 1. Electric Lineworker Degrees Awarded by Major Code, Academic Years 2002 - 2006
Mesa State College

Level	Major Code	Program Name	Degree Attainment				
			2002	2003	2004	2005	2006
Certificate	1381	Electric Lineworker	20	19	25	26	28
TOTAL			**20**	**19**	**25**	**26**	**28**

Table 2. Majors in Electric Lineworker

Lineworker															
Degc	EmphCd	Description	2004-2005					2005-2006					2006-2007				
			Majr1	Majr2	Majr3	Majr4	TOTAL	Majr1	Majr2	Majr3	Majr4	TOTAL	Majr1	Majr2	Majr3	Majr4	TOTAL
CERT	1381	Electric Lineworker	29	0	2	0	31	29	0	2	0	31	34	0	4	0	38
Lineworker Totals			29	0	2	0	31	29	0	2	0	31	34	0	4	0	38

Table 3A. Undergraduate Electric Lineworker Enrollment by Major Code, Summer Terms 2002 - 2006
Mesa State College

Level	Major Code	Program Name	2002	2003	2004	2005	2006
Certificate							
	1381	Electric Lineworker					
		New Majors	0	0	0	0	0
		Continuing Majors	0	1	0	4	0
	Sub-Total		0	1	0	4	0
	All Electric Lineworker						
		New Majors	0	0	0	0	0
		Continuing Majors	0	1	0	4	0
Grand Total			0	1	0	4	0

Table 3B. Undergraduate Electric Lineworker Enrollment by Major Code, Fall Terms 2002 - 2006
Mesa State College

Level	Major Code	Program Name	2002	2003	2004	2005	2006
Certificate							
	1381	Electric Lineworker					
		New Majors	20	30	28	28	35
		Continuing Majors	2	1	0	2	0
	Sub-Total		22	31	28	30	35
	All Electric Lineworker						
		New Majors	20	30	28	28	35
		Continuing Majors	2	1	0	2	0
Grand Total			22	31	28	30	35

Table 3C. Undergraduate Electric Lineworker Enrollment by Major Code, Spring Terms 2003 - 2007
Mesa State College

Level	Major Code	Program Name	2003	2004	2005	2006	2007
Certificate							
	1381	Electric Lineworker					
		New Majors	1	0	1	0	0
		Continuing Majors	20	24	28	27	29
	Sub-Total		21	24	29	27	29
	All Electric Lineworker						
		New Majors	**1**	**0**	**1**	**0**	**0**
		Continuing Majors	**20**	**24**	**28**	**27**	**29**
Grand Total			**21**	**24**	**29**	**27**	**29**

Table 4A. Undergraduate Electric Lineworker, Summer Terms 2002-2006
Mesa State College

Level	Major Code	Program Name	2002	2003	2004	2005	2006
Freshman	1381	Electric Lineworker	0	1	0	2	0
TOTAL			0	1	0	2	0
Sophomore	1381	Electric Lineworker	0	0	0	2	0
TOTAL			0	0	0	2	0
ALL CLASSES	1381	Electric Lineworker	0	1	0	4	0
TOTAL			0	1	0	4	0

Table 4B. Undergraduate Electric Lineworker, Fall Terms 2002-2006
Mesa State College

Level	Major Code	Program Name	2002	2003	2004	2005	2006
Freshman							
	1381	Electric Lineworker	21	30	25	29	32
TOTAL			**21**	**30**	**25**	**29**	**32**
Sophomore							
	1381	Electric Lineworker	1	1	3	1	3
TOTAL			**1**	**1**	**3**	**1**	**3**
ALL CLASSES							
	1381	Electric Lineworker	22	31	28	30	35
TOTAL			**22**	**31**	**28**	**30**	**35**

Table 4C. Undergraduate Electric Lineworker, Spring Terms 2003-2007
Mesa State College

Level	Major Code	Program Name	2002	2003	2004	2005	2006
Freshman							
	1381	Electric Lineworker	19	22	22	20	18
TOTAL			19	22	22	20	18
Sophomore							
	1381	Electric Lineworker	2	2	7	7	11
TOTAL			2	2	7	7	11
ALL CLASSES							
	1381	Electric Lineworker	21	24	29	27	29
TOTAL			21	24	29	27	29

Table 5A. ONE-YEAR RETENTION RATE FOR FIRST-TIME ELECTRIC LINEWORKER 2001 - 2005
Mesa State College

Level	Major Code	Program Name	Retained or Graduated Subsequent Fall #	Retained or Graduated Subsequent Fall %	Not Retained Subsequent Fall #	Not Retained Subsequent Fall %	Total #	Total %
Certificate	1381	Electric Lineworker	73	86.9%	11	13.1%	84	100.0%
TOTAL			**73**	**86.9%**	**11**	**13.1%**	**84**	**100.0%**

Table 5B. Headcount and Average Cumulative Credit Hours to Degree for Electric Lineworker Majors Graduating AY 2002 - 2006

Type of Entry into MSC	Headcount		Average
CERTIFICATE			
Student Type			
Began at MSC	85	72.0%	43.5
Transferred in to MSC	33	28.0%	57.4
Total Subtot	**118**	**100.0%**	**47.4**

Table 6. Electric Lineworker Faculty by Tenure Status, 2005-2007
Mesa State College

	Biology	2004-2005 FTE		2005-2006 FTE		2006-2007 FTE	
		FTE	%	FTE	%	FTE	%
Status							
	Tenure	0.0	0.0%	0.0	0.0%	0.0	0.0%
	Tenure-Track	0.0	0.0%	0.0	0.0%	0.0	0.0%
Total Tenure		**0.0**	**0.0%**	**0.0**	**0.0%**	**0.0**	**0.0%**
	FT Instructor	1.3	100.0%	1.3	100.0%	1.8	85.7%
	PT Instructor	0.0	0.0%	0.0	0.0%	0.3	14.3%
TOTAL		**1.3**	**100.0%**	**1.3**	**100.0%**	**2.1**	**100.0%**

Table 7. COURSES BY COURSE LEVEL BY TERM AY 2007

Level/Course Level	Summer Courses		Fall Courses		Spring Courses		Total Courses	
Undergraduate								
Remedial - 000	0	0.0%	0	0.0%	0	0.0%	**0**	**0.0%**
Lower - 100	18	100.0%	6	100.0%	14	100.0%	38	100.0%
Lower - 200	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Upper - 300	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Upper - 400	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Subtotal Undergraduates	**18**	**100.0%**	**6**	**100.0%**	**14**	**100.0%**	**38**	**100.0%**
Graduate								
Graduate - 500	0	0.0%	0	0.0%	0	0.0%	0	0.0%
Subtotal Graduates	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**	**0**	**0.0%**
Total	18	100.0%	6	100.0%	14	100.0%	38	100.0%

Appendix B

Library Assessment

Library Program Assessment
John U. Tomlinson Library
Mesa State College

Date of Assessment: July 11, 2007

Purpose of Assessment: Analysis of Library Resources

Program under review: Electric Lineworker

Program Level/s: Certificate of Occupational Proficiency

Liaison Signature: Assessment done by Paul Rolland

1. Collection Assessment

This 1-year certificate program is geared toward future employees in the power distribution industry. The training is primarily hands-on and conducted at the South Campus so library needs for students in this field are not high. Library resources for this program would include materials on electric power and distribution, occupational health and safety, overhead and underground line work, transformer connections, and first aid.

a. Reference Support

In terms of subject specific library-use-only reference resources, the Library has less than ten titles in each individual subject area (electric power and distribution, occupational health and safety, overhead and underground line work, transformer connections, and first aid). Also, most titles are older than five years. In addition, there are 19 reference titles on the broad subject of electronics.

b. Monographic Sources

A keyword search on "electric power and distribution" resulted in 35 titles, 10 of which were less than 10 years old; most were government documents. A keyword search on "occupational health and safety" resulted in 615 titles, 202 of which were less than 10 years old; many of these were also government documents. There are 12 titles on transformers and 60+ titles on the subject of first aid; most of these are over 10 years old.

c. Periodicals

The Library has 36 periodicals (both online and print) on various aspects of electric power, all of which are published by the federal government. It also has 4 print

2002-Became hot line foreman. Responsible for hot line maintenance and construction with a three man crew.

1974-1975- Service station attendant, Vail Chevron, Vail, CO pump gasoline, changed tires, serviced cars and pickups, did minor mechanical repairs, and operated service and wrecker truck.

Education

1974-Graduated Akron High School

Attended Mesa Hotline School
1976-1st year Hot sticking
1978-Transmission Class
1979-Underground school
1981-Rubber Gloving 2
1985 to 1998-taught Hot Sticking 1 and 2
1999-Special Apparatus
2003-2005 taught Hot sticking 2

Attended Rocky Mountain Meter School 3 years.

Attended Miner & Miner staking school.

Attended Mountain States Employees Council-Supervisor training

Attended CREA supervisor training.

Victor Rose

125 Knoll Ave
Craig, CO 81625
(970) 824-5160 Home
(970) 326-7536 Cell
nvroses@nglconnection.com

POSITION Instructional Assistant-Electric Lineworker

EDUCATION

1964 Graduate Souderton Area High School
Souderton, PA
1969 Pennsylvania Power and Light-Lineman Training School I
1970 Pennsylvania Power and Light-Lineman Training School II
1972 Pennsylvania Power and Light-Lineman Training School III
Passed Journeyman Exam and Certified
1977 Pennsylvania Power and Light-Substation Training School
1977 Pennsylvania Power and Light-Relay Training Program
1984 Mt. States Employers Council-Supervisory Skills I
1985 Mt. States Employers Council-Supervisory Skills II
1986 Northwest Community College-Supervisory Training
1987 Northwest Community College-Motivation and Personal Goal Setting

EXPERIENCE

1983 – Present Yampa Valley Electric Association Inc.
Line Superintendent

- Direct the activities of 12 Operations personnel
- Direct outside activities of Contract personnel in linework, dirtwork, and directional boring.
- Assist in ordering of line materials
- Assist in specifying and ordering of trucks and other line equipment

1980 – 1983 Yampa Valley Electric Association Inc.
Lineman and Line Crew Leader

1968 – 1980 Pennsylvania Power and Light
Groundman, Lineman, Troubleman, and Crew Leader

1965 – 1968 US Navy
Aircraft Mechanic

OTHER EXPERIENCE

1981-1989	Instructor-Mesa Hotline School
1985-2007	Mesa Hotline School-Board Member
1988-1989	Mesa Hotline School-Classroom Chairman
1990-1992	Mesa Hotline School-President
1990-2005	Mesa Hotline School-Journeyman Testing Committee
1996-2000	Mesa Hotline School-Classroom Chairman
2000-2007	Mesa Hotline School-Special Apparatus I and II and Power Substation Class Committee

REFERENCES

See Employment Application for Professional References

External Program Review

Prepared by:

James E Jones Jr.

High Voltage Instructor

Oklahoma State University

October 31, 2007

October 31, 2007

Cathy A Barkley, PhD
Assistant Vice President of Academic Affairs
Mesa State College
1100 North Avenue
Grand Junction, CO 81501-3122

Subject: External Review of Electric Lineworker Program

Thank You for the opportunity to visit your campus and for your generous hospitality. I learned a lot during my short visit and hope that I can provide you with some helpful comments based on what I saw during the time I spent with you.

General Overview:
The Electric Lineworker Program is a program that is very much in demand based on the reports and concerns that show the rapid decline in the number of available and qualified individuals that are capable of keeping the electrical power up and running. The United States has become very reliant on electricity, which has led to an increase in the amount of electricity that must be delivered to the workplace and homes throughout the nation. This increase in demand for more electricity along with the huge numbers of qualified linemen that are reaching retirement eligibilty has driven the demand for replacement lineman to an exceptionally high level. The electrical utility companies are scrambling and competing to find these qualified individuals to replace the retiring linemen. Lineman schools such as yours are being started all over the nation at the request of the utility companies to help grow the next generation of Electrical Lineman.

Your program has a very unique relationship with the Electrical Co-ops in your area. The Mesa State Hot Line School that is sponsored by the electrical utility industry in your area seems to be very supportive of your program. This is evident by looking at the type and quantity of material and tools that you have access to work with. This type of relationship is crucial to keep a program like this alive. Without that relationship, the cost of running this type of program would be cost prohibitive for a state college to fund. This relationship should be nurtured and preserved to insure that those needed resources are available for your students in the future. Continue to ask the Mesa State Hot Line School representatives and the utility companies that use your students for their input on what needs to be taught in your program.

Future Outlook and Expectations:
While I was there, I was asked where I think you should be in five years from now. To answer this, I will give my opinion of the current hiring frenzy and compare it to the expected hiring practices of the future. At this point in the game, the industry is taking what they can get because they are in desperate need of replacements. In the future, as the need for replacement lineman is met, the industry will be more selective regarding employment of lineman and their qualifications and knowledge of the job. They will become more particular about who they hire, which means only the best students may be offered employment. With the development of more schools teaching this type of program, eventually competition between schools is inevitable. To sustain a program such as this in the long run, a school must make sure that it stays ahead or at least at the same level as the other schools in the country. Your geographic location may be a challenge for you after the immediate needs of your current customer base are met. I say this because of the density of the population in your location, not because of the quality of your program. You will need to establish yourself above the competition to give the students a reason to attend your program in lieu of the others.

Currently the Electric Lineworker Program has a strong history of student placement which tells me that the industry that you are servicing in your area is satisfied with the students that you are graduating. The feedback reports are also showing the same results. By listening to your advisory committee and giving them what they ask for, you should expect to continue to get the good evaluations, but keep an eye on what is going on outside of your current customer base, because in order to survive, eventually you are going to have to expand your geographic recruiting/placement boundaries. Without knowing the numbers of the retiring lineman workforce in the area you are providing students to, I can't say when the local market area will become saturated, but eventually they are going to get all they need. Unlike the construction industry, the Electric Lineman trade is not generally one with a lot of turnover, once someone gets hired on with a company, they normally stay there until retirement.

Assessments:
After looking at your assessments, I had a question on whether the assessments could be measured or not. Currently you are using the job placement and employer satisfaction of the graduate students as your student assessment tool. I thought this assessment was limited because (1) getting a job is different than being able to perform once the graduate is hired and (2) many employers are very reluctant to evaluate new employees because they aren't sure about what this new educated student should be able to do. This type of post graduate evaluation is good to evaluate the program but should not be used as a student assessment. If a graduate receives a negative assessment from an employer, it's too late to fix or correct the students' actions, they have already graduated. I would recommend rewriting the assessments so that they can be measured. I discussed this with Mr. Roark and he stated that he was looking forward to better assessments but wasn't sure how to actually write them. We discussed a few examples of measurable assessments.

Mr. Roark and I discussed the need to pinpoint a few critical tasks or objectives that the students need to know in order to meet the needs of the industry, and then assess the students' ability to accomplish these critical tasks. Since we both agreed that pole climbing is a critical task, one example of a measurable assessment that I gave him was, "The student must demonstrate that he/she can safely climb to a working position at the top of a 40` pole within 3 minutes from the time the student leaves the ground." This assessment criteria tells the student what is to be accomplished, how well it's to be accomplished, and under what circumstances. It takes the guess work out of what needs to be done and also supports Mr. Roark if he ever has to tell a student that they are not performing up to standards. It also lets the future employers know what to expect from the graduates.

Computer/Technology Integration:
Technology is creeping its way into the High Voltage industry much the same way as it has in most industries. Many of the trucks that are being dispatched are now equipped with computers which the lineman uses to get retrieve job orders. They are also used to track the location and time that the lineman is spending at specific job sites. Most of the time accounting and scheduling is accomplished via computers. The lineman of tomorrow will need to be computer savvy (not programmers), but at least know how to do data entry and how to find the necessary information from a computer. I would recommend an introductory computer class for your students, one where productivity based software is taught; students already know how to send text messages and e-mails.

Facilities:
My first impression of the facility the Lineman Program is taught was not favorable. This was unexpected after seeing how nice the campus is at WCCC and Mesa State. The building and pole yard is nice but there is a lot of clean up that needs to be done outside the building. My first thought was that it was a storage area and we were just stopping there to pick something up. The old semi trailers and stuff scattered around the area should be removed. You could possibly move them to the other end of the property away from the classroom building.

The structure needs some signs to inform people know what it is; and as mentioned earlier, I thought we were pulling up to a storage lot instead of a classroom building.

The structure was really nice and large. I believe with the amount of material and tools your program has, you should have the entire building to use. The classroom is really cramped for the number of students you have. If the entire building was used for the High Voltage program, a larger classroom could be constructed so the students would not be so cramped. If it is not possible to use to entire building for the program, then at least build a wall to separate the storage area from the High Voltage area so it doesn't look like your teaching your program out of a storage building.

The structure has a lot of potential but at this point it looks rough. As the competition for students increase, the appearance of the campus and class area is going to play a part in recruitment and their choice on which school to attend. If you plan on growing the program, you are going to need more classrooms because eventually, you will have to split the students up into more than one class. Twenty to thirty students in one classroom at the same time is too many. You will lose the personal touch that is required to help many of these students through their fears of climbing poles.

Recruiting:
As mentioned earlier, in order to survive after the initial hiring frenzy has been met, will need to establish a recruiting strategy so potential students know you have this program to offer. Establishing some type of a brand that will allow your students to brag they are in the program, and separate them from the other kids attended high school with, will help with your recruiting. Our best recruitment tool is our current and past students. We have a window sticker that only our students can get, and they are proud to display it. Our students are proud of what they can do and the program they are in. They know that not everyone that signs up for this program will not make it through. It's a tough program, but those who finish are very proud and anxious to tell others about the program. I am including one of our window decals along with one of our small stickers with the evaluation.

2 Year Degree Program
Whether or not you expand your program into an Associate Degree program will depend on your advisory committee input. The majority of the lineman who work for municipalities or Co-ops will probably tell you that a degree is not important because they didn't need one when they were coming up in the trade. It has been my experience the larger companies want the degreed students because there are more positions to move up into in the larger companies and the degreed students will generally progress faster than non-degreed students.

I am including a copy of our 2 year degree program for you to review and use as a model should you decide to go that direction.

In closing, I want to say you have a very dedicated staff that seems to really want to give something back to the trade which has been good to them. They seem to really enjoy what they are doing. The students seem to enjoy what they are learning and seem anxious to use their new skills and education to get busy making a living.

Thank you again for the invitation to visit your program and I hope that what I had to say will be of some benefit.

Sincerely,

James E Jones Jr
High Voltage Instructor
Oklahoma State University