UPW Employer Needs Assessment Report
Amarillo College Department of Labor Grant

The West Texas Office of Evaluation and Research (WTER) provides external evaluation services for Amarillo College's Department of Labor Grant, the Accelerated Career Pathways project. The project's efforts will focus on development of three new programs and the revision of seven other programs. The project's evaluation plan calls for WTER to conduct needs assessments with employers of students who will complete each of the targeted programs. The needs assessments will be designed to provide information for project leaders to use in program development and revision. In talking with leaders of the Utility Power Workers (UPW) program, it was decided that better information could be collected if separate needs assessments were conducted with large employers and with small employers of students who would complete a revised UPW program.

On June 13, 2013, WTER Associate Director Judy Kelley and Research Associate Kris Drumheller collected surveys and conducted a focus group to get large employer perspectives about the UPW Program. The participants were asked to first complete a survey followed by the focus group. On August 21, 2013, Drumheller conducted a second focus group with small employers. They were similarly asked to complete a survey and answer questions related to the needs for a utility power worker's program through AC. Comparing responses of the large and small employers, this report provides the responses to the survey in chart form and then offers highlights of the focus groups based on the participant responses. Four participants in the large employer group represented three different companies. Eight participants in the small employer group represented five potential employers of students who will complete Amarillo College's UPW program.

Part I: Survey Results

Participants were informed that Amarillo College has identified competencies accomplished through the various UPW program course work. They were then asked to rate the importance of each of these competencies on a scale ranging from "Not At All Important" to "Very Important." The scale also included a "Not Sure" option. The large employers were asked to pass the survey to someone working in their organization who could adequately respond to the competencies. Only two completed the survey. The small employers filled out the first part of the competencies at the focus group (N=8), and the second part was filled out online resulting in fewer responses (N=2). The responses of the large and small employers were compared to identify those competencies viewed as least important (including *Not at all Important*, *Only a Little Important*, and *Somewhat Important* responses). With small numbers reporting (two large companies, eight small companies) and a general sense that the participants weren't really sure how to respond, WTER believes these competencies identified as least important might take less priority in the curriculum. The following table provides the competencies identified by both large and small employers as less important. To provide additional insight, the table also includes the total number of responses for each competency.

"Less Important" UPW Competencies Identified by Both Large and Small Employers

Competency	Not at All Important	Only a Little Important	Somewhat Important	Total # Respondents
Safely perform substation construction		1	2	4
Analyze schematics and relay logic functions			3	4
Sketch and construct magnetic solenoid circuits per specifications	1	2		4
Sketch, construct, operate, and troubleshoot circuit with motor, motor starter, and control devices	1	2		4
Sketch, construct, operate, and troubleshoot overload protection circuit to comply with all specifications	1		2	4
Sketch circuit and construct pushbutton and selector switches to operate per specifications	1	1	1	4
Determine proper power source for motor control specifications	1	1	1	4
Troubleshoot magnetic solenoids, magnetic motor starters, overload protection devices, various industrial pushbuttons and selector switches	1	1	2	4
Construct a service entrance			3	4
Select equipment and install branch circuit	1		2	4
Construct an electric metallic tubing conduit system	1	2		4
Calculate circuit loads	1		2	4
Calculate conduit fill	1	1	1	4
Calculate ampacity	1		1	4
Install multiple switch circuit	1	1	1	4
Demonstrate proper wiring techniques			2	4
Calculate and install overcurrent protection	1	1	1	4
Select, adjust and rewire power sources	1	2		4
Perform construction of overhead transmission structures including: Change out of Deadend Bells (Suspension insulators from Bakerboards)	1	1	1	4
Perform construction of overhead transmission structures including: Perform grounding for transmission	1		2	4
Operate heavy equipment safely	1		3	10
Understand grounding and bonding for transmission systems	1	1	2	10
Perform rigging basics			3	10
Safely use electrical test equipment			2	10
Interpret RUS++ high voltage schematics	1	2	2	10
Perform construction tasks for single phase transmission	2		3	10

"Less Important" UPW Competencies Identified by Both Large and Small Employers

Competency	Not at All Important	Only a Little Important	Somewhat Important	Total # Respondents
Perform construction tasks for 3 phase H-Structure transmission	1	1	6	10
Understand history of power generation and distribution including generation plans and substations	1	1	2	10
Inspect and test wood poles		2	1	10
Develop and practice safe working practices of High Voltage Underground operations and maintenance	1		2	10
Understand work planning and RUS++ schematics for underground operations	1	1	3	10

Less emphasis seemed to be placed on Level One skills than Level Two skills, so that might be a consideration in curriculum development. All other competencies were rated as *Important* or *Very Important* by respondents.

Part II: Focus Group Results

The large employer focus group consisted of four members from three different organizations. There were two male and two female participants. The small employer focus group consisted of representatives from eight electric cooperatives in the Panhandle area. All of the participants in the small employer group were male.

The focus group responses were grouped into categories for easier assessment of the UPW program. The large and small employers definitely had different viewpoints. It is clear the larger employers (particularly Xcel) have their own training programs and might not utilize the AC program. The smaller employers found the most benefit from AC offering fundamental skills and helping students identify whether they are comfortable with the power worker field, most notably in climbing poles. In other words, small employers saw AC as a potential point for weeding out individuals who are too scared to climb poles and, therefore, not good candidates for this line of work. The following results represent the discussion of each topic area, comparing the large employer and small employer responses.

Soft Skills

Large Employers

The larger employers were very concerned about professionalism, work ethic, and oral and written communication. They specifically wanted employees to have the following soft skills:

- Be on time
- Professionalism - knowing how to dress, career skills
- Written Skills - Write a report/summarize work day; work order/accident reports and completion forms
- Presence when walking in the room, handshake, confidence
- Work ethic
- Ability to hold conversations
- Competency based interviews
    - Can look great on paper but if there's a problem with the interview they won't get the job

Small Employers

The small employers had less concerns about soft skills, but similarly were concerned about work ethic. They also mentioned a concern with employees being aware of the importance of everyone speaking in English for the safety of the team, rather than some members speaking Spanish to each other and leaving non-Spanish speakers out of the conversation. They were also concerned about cell phone use. Many will use their phones even at the top of the pole, which is a safety hazard.

Experience

Based on the responses of the two groups, it was clear AC is most likely going to serve small employers and potentially contractors. Large employers have their own training program (Xcel in particular) and would expect AC grads to take their training as well. Small employers seem more willing to allow AC grads to leap ahead of those who come in off the street.

Large Employers

- (AC Noted) Program participants are often younger, with varying experience
- Contractors need workers to build substations and collection points which are pretty specialized. There is a whole new generation of transmission lines and maintenance needs. (Contractors have own training programs)

Small Employers

- Small employers felt a certificate for more advanced fundamental skills was good, but that an associate's degree was not needed.
- One of the small employers mentioned a 12-month probationary period before a new hire is even allowed up a pole. "We're held to a year on the ground. Six months probation but won't get up a pole until 12 months after being hired."

Importance of Skills

There were two main skill sets mentioned by both large and small employers: electricity and safety. In terms of education, those coming out of the AC program need to understand electrical equipment. They also need to consider safety in everything they do, from handling the equipment to how they communicate with others on their team.

Large Employers

- A mindset for safety needs to be instilled at every level of the process.
- If individuals learn lineman skills, they have all the basics they need to work for any of these companies: electrical; basic skills and tasks working around electrical equipment
- Some may find short term work; once you finish project you need to move onto the next project

Small Employers

- Basic math skills are needed. They should know some of the formulas in their head.
- Skills and knowledge in basic electricity are important.
- "When we hire AC interns, they already know they want to be a lineman."
- Those who have been in the industry often rely on "shortcuts," which they teach others, which can be a problem. This is a potential benefit of a program like AC with a consistent curriculum.

Value of AC Program

Although the large employers discussed potential placement with an AC degree, they seemed less willing to bring AC students in any higher level position than someone starting their training. Small employers appeared more flexible in the placement of AC students.

Large Employers

- Goal of preparing students to start at companies like Xcel and start at a higher level than others who have not gone through the program.
    - Tracking of such placements is needed on both the AC and Xcel sides.
    - AC needs to graduate students with both book knowledge and hands-on skills.
    - AC needs connection with paid internships (as OSU has)

Small Employers

- Interns are at the expected level. There are some things they needed to work on, but they caught on quickly
- "Main thing is being exposed to the line industry and they are sure this is what they want to do. That is a big thing because some don't figure out this is something they don't want to do until 6 months in."
- They had been on a pole and knew they were fine with climbing a pole rather than shying away at that point.
- Exposure is great fundamentally but when the companies get them, they are going to retrain with language and skills expected at the company itself. Concerns about those who "know too much" but one member became more supportive after seeing how pre-knowledge of skills was helpful.
- Some companies, like Deaf Smith, will help pay for individuals to finish their education which could encourage the completion of the AC program.
- It is possible that AC students would come in to programs somewhere in the middle, rather than having to start at the beginning of a training program. Most companies will do some kind of evaluation to assess employee skill and knowledge levels.

WTER Recommendations

Based on the information provided on the surveys and during the focus groups, WTER provides the following recommendations.

- The focus of the AC program should likely include advanced lineman skills. The program is deemed useful for identifying individuals who are good candidates for the power working field, e.g. willing to climb poles.
- Continue identifying the placement opportunities for completers of the AC UPW program.
- Consider identifying the training needs of each electric cooperative's program and creating agreements whereby students hired from AC have less organizational training time because of the skills developed at AC.
- Identify organizations that have programs that pay for advanced training.
- Identity whether contractors would benefit from the AC program and to what extent they would benefit.
- Consider whether there are ways for AC to offer coursework to reach the more remote locations (ex. Wellington).
- It is important to emphasize to students and potential students that employment will likely be outside the Panhandle area because of the ratio of participants to available jobs.

- Continue CPR and CDL courses.