ISPC
Institute for Safety in Powerline Construction

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Evaluating Lineworker Competencies

Do your lineworkers know what they should know about building and maintain high-voltage powerline systems? Just as importantly, can they *do* what is expected of them at their current classification level? How do your people stack-up against industry standards for lineworkers at various levels?

Often we find out the answer to this question too late. We made too many assumptions early on and the lineworker has now failed – possibly in a big way. If we had only realized what this lineworker didn't know, before he took on that difficult work assignment, maybe we could have prevented these problems.

Sound familiar? Lineworkers have been notorious for being a tough lot. The work is difficult, complex and sometimes dangerous. To do the job at all, one cannot be shy. Lineworkers seem to be risk takers naturally and their tendency is to assume they are more competent than they actually are. Our tendency, as managers, is to assume that as well and we too often make decisions based on this 'gut feeling'. There is a better way.

Evaluating Competencies

There are three good reasons to evaluate a lineworker's current level of competencies:

- To better understand what they know and are able to do – right now.
- To identify remedial training and education to shore up weaknesses found.
- To design a continuing education and skill development program to help keep them at the top of their game.

An added benefit is that now we have a 'base-line' for this employee and we can measure his future growth against this beginning point.

Contrary to the opinion of many lineworkers in the field, we do not test and evaluate an employee because we are looking to cut his or her pay - or, because we are looking for an excuse to demote or fire someone. However, those fears do exist out there and we do need to be sensitive to them.

Explaining to the rank and file how we will evaluate and classify workers typically goes a long way in reducing worker's natural fears of being 'evaluated.'

So, we decide to evaluate the lineworkers we have in our Operations Department. What should we evaluate? There are three things that need to be assessed:

1. Knowledge
2. Skills
3. Attitude

Attitude is very subjective and is usually apparent fairly quickly with the new hire and obvious by now with the existing employee you may want to evaluate. You know attitude when you see and experience it and you know what attitude works in your company and what doesn't.

Let's focus on the first two competencies: knowledge and skills.

The Lineworker's Knowledge Competencies Evaluation:

The Institute for Safety in Powerline Construction (ISPC), a few years ago, conducted a study within the Electric Utility Industry based on what a Lineman should know and be able to do to be called journeyman. Using that study, ISPC defined 191 competencies that are commonly expected of a qualified journeyman lineman doing energized work. From that list, ISPC then went on to develop knowledge tests and skills evaluations that help gain important insights into what a lineworker knows and is able to do, on the job, out in the field. Tests such as these can help management determine what the lineworker knows and understands about each of these competencies. Here are the critical subject groupings for the 191 competencies:

- Electrical Theory
- High Voltage Electrical Systems Components
- Safety Knowledge and Best Work Practices
- Rigging Competencies
- Tools and Equipment Knowledge and Use
- System Protection and Metering
- Overhead Distribution Systems
- Underground Distribution Systems
- Transmission Systems
- Substations and Switchyards

Testing for knowledge and understanding within each of the subject areas can provide us insight into what the Lineworker knows, but more importantly it can tell us what he or she *doesn't* know.

What if my lineworker is not yet a journeyman, you ask? By completing as much of the knowledge test as he can, the lineworker tells us the extent of his knowledge on the various

subjects. Armed with that information, we can now design remedial training, based on the lineworker's current classification, to help shore up their weaknesses in knowledge. Knowledge testing is an important component of the lineworkers competencies, however to complete our evaluation we need to also understand the lineworker's *skill proficiencies.*

The Lineworker's Skills Competencies Evaluation:

Within the Electric Utility Industry, many jobs contain a technical skill element. This is especially true for lineworkers. Testing for skill proficiency is a crictical component in a complete evaluation for lineworkers.

Additionally, we are finding that regulatory authorities such as OSHA and the Department of Transportation (DOT) in the U.S. increasingly require evidence of 'proficiency' in training, not just that someone attended a class and passed a knowledge test.

Therefore, both 'knowledge' and 'skills' need to be effectively evaluated for many Electric Utility workers. The evaluation instruments we use to do this will be more along the lines of the Essay or Story Problem format, when added to the Knowledge Test. However, this type of testing will go farther by typically having the instructor or other qualified person 'observe' the student as they work through the requirements of the example work assignment they have been presented. Thus, evaluating skill proficiencies must be done in the training yard, for this part of the evaluation. A recommended training yard specification plan is shown in Exhibit 1. Typically, tools, equipment and personal protective equipment are involved in the evaluations as well, and how and when they are used may well be part of the evaluation itself.

For the skills proficiency part of the evaluation ISPC has designed a series of 'work stations' within a practice yard that are designed to test a lineworker's skills while performing increasingly complex tasks, all the way up to maintenance on simulated energized lines and equipment.

One of the first 'work stations', for example, may be Climbing Wooden Poles. An example of what the evaluator expects to assess is shown in Exhibit 2.

As you can see, much depends on the evaluator's subjective view of the student's performance. Because of the subjective nature of the skills evaluation, it is important that all trainer/evaluators agree on what constitutes an acceptable performance. The results of this evaluation in conjunction with classroom instruction and passing the knowledge test, provides evidence of proficiency or the need for remedial training.

The Big Picture: Safety

The good news is that none of this has to be a guessing game based on someone's assumptions. With a rational process for evaluating both the knowledge and skills of a lineworker, we can

identify a level of competency with greater accuracy than ever before. Additionally, using reliable instruments for evaluations can provide an objective foundation for decision making and they can help offset much of the personal 'bias' that naturally occurs.

We want our lineworkers to succeed. That means that each time we assign a job we have the confidence that this worker understands what is required and can perform the work safely and in a technically correct manner. To allow someone to accept a work assignment without being truly prepared is a terrible mistake that may even result in injuries or fatalities.

Often, looking behind the scenes at successful lineworkers today, we find that many were forced to learn 'on the job' both the knowledge and skills required to do the work. In most cases no one got killed – possibly just lucky.

No one would intentionally rely on luck in this business, we trust. Good training programs, such as the T&D PowerSkills Program, which ISPC endorses, or others available in the industry, plus the effective evaluation tools mentioned above are now available to improve the odds. All we have to do is start using them.

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ISPC is a 501(c)(3) non-profit Industry Association focused on lineworker training and safety. ISPC is based in Alexandria, Louisiana, USA. www.ispconline.com

Exhibit 1

Suggested Training Yard Specification Plan – De-energized

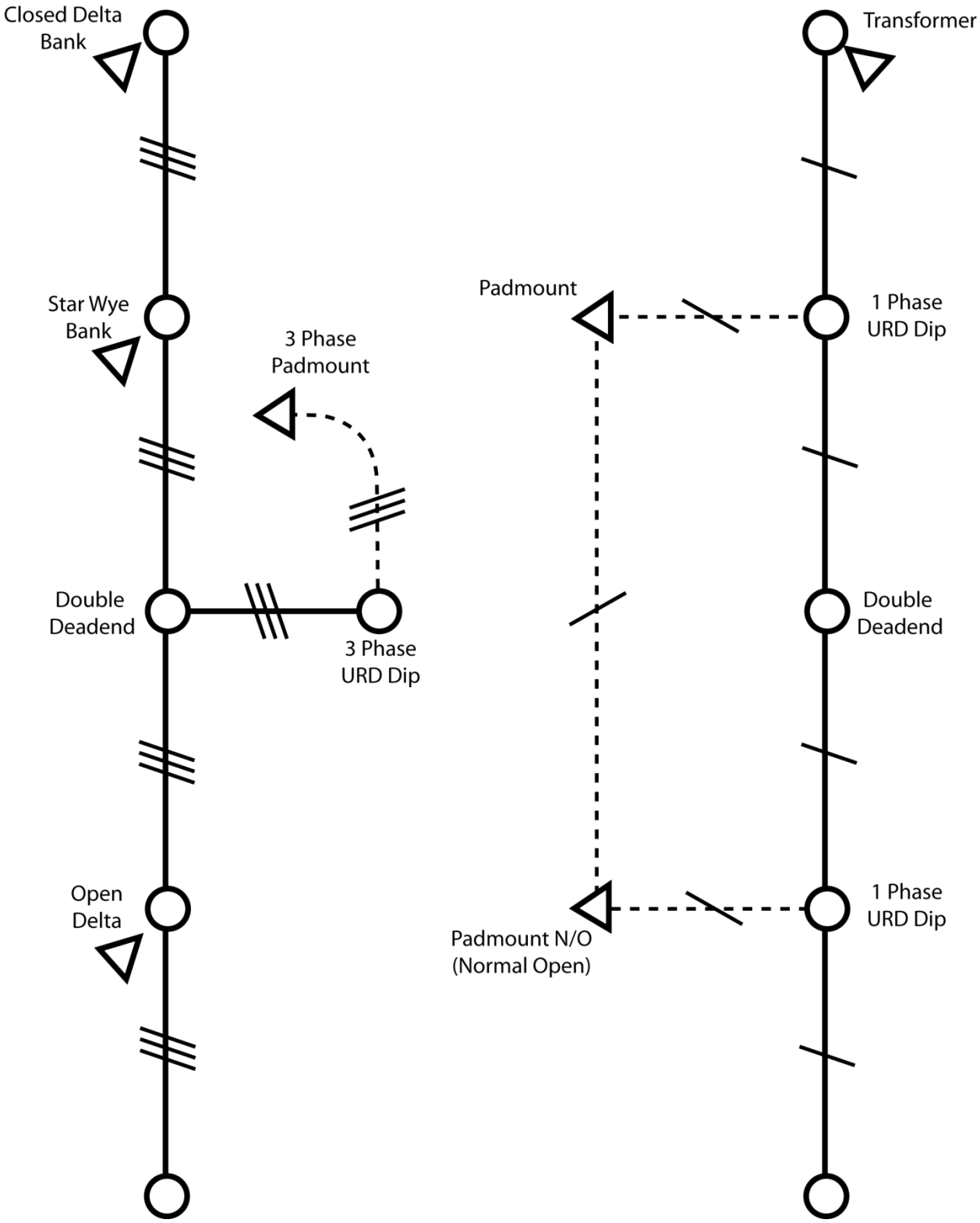

Exhibit 2

1. Climb Pole 40' Safety-off, Walk around pole, Descend

Evaluator: Have fall protection available and have candidate wear fall protection for this demonstration. If they climb in a safe and effective manner, meeting the following climbing requirements they can be considered a "qualified climber" Observe the following to ensure safe and correct procedures:

- ❑ Tool Inspection