

**Public Utility Commission** 

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April 11, 2007

RE: OPUC Staff's Initial Comment in Docket AR 513

The purpose of this rulemaking is to adopt the 2007 edition of the National Electrical Safety Code (NESC) as the basic standard for the construction, operation and maintenance of electric supply lines (or power lines) and communication lines throughout Oregon. This adoption is authorized and encouraged by Oregon Revised Statutes (ORS) 757.035. The American National Standards Institute approved the 2007 edition of the NESC as an American National Standard on June 16, 2006, after rigorous opportunity for industry and public input. The NESC contains basic provisions that are necessary for the safety of employees and the public related to electric supply and communication lines and facilities.

The Staff of the Public Utility Commission of Oregon (OPUC) respectfully submits the following initial comments:

## **Long-Standing Policy**

It has been long-standing OPUC policy to adopt the most recent edition of the NESC without exception. This adheres to policy set by the 1977 Oregon Legislature when it adopted the 1973 edition of the NESC in its entirety as the standard for the construction, operation and maintenance of electric supply and communication lines and facilities in Oregon. (*See* ORS 757.035(2) and (3)).

There are a number of reasons why the Commission should maintain this policy and adopt the latest NESC without exception. Some of the reasons are:

- O Line workers, engineers, managers, contractors, vendors, and others need a single published safety code with which to work and comply.
- O Pole/conduit owners and occupants certainly need a single universally-accepted safety code for the "safe and efficient" management of utility structures that must be shared by multiple attachers.
- O Utilities and operators that serve in multiple states want and need one universally-accepted safety code for the efficiency of their management, engineering and operations. For example, PacifiCorp operates in six states, and Qwest operates in 14 states.

- O Utility contractors, consultants, and vendors who work in a number of states, need a single universally-accepted safety code for their work product and processes. In today's competitive utility environment, more and more utilities and operators are outsourcing their engineering and construction/maintenance work to contractors and consultants.
- When hit by major disasters, Oregon's utilities and operators must call for line workers and engineers from other states. By staying with the most recent nationally adopted NESC, it becomes easier to find qualified workers to work in recovery efforts.

PUC Staff believes that adoption of the latest editions of the NESC in their entirety over the years has served the state well in the past and will do so in the future. With increasing numbers of operators (including wireless operators), it is even more critical today, than ever, that Oregon have one universally-accepted safety standard (or code) that all electric supply and communication utilities and operators must rely on and be compliant with. That minimum standard is the NESC.

If the 2007 NESC is not adopted in Oregon, the state will become out-of-step with the rest of the nation with respect to utility standards and practices. In the long term, this would cause increased costs for Oregon's utilities and operators. It would also cause increased unsafe conditions and practices jeopardizing utility workers and the public.

# Call for Industry Comments and Open Forum Workshop

On January 10, 2007, OPUC Staff sent correspondence to representatives of the major utilities, the Oregon Joint Use Association (OJUA), the Oregon Cable Telecommunications Association (OCTA), the Oregon Municipal Electric Utility Association (OMEU), Oregon People's Utility District Association (OPUDA), the Oregon Rural Electric Cooperative Association (ORECA), and the Oregon Telecommunications Association (OTA) asking for comments on the 2007 NESC and its adoption impact on them. Interested parties responded, and their comments are attached and are posted at website <a href="http://www.puc.state.or.us/PUC/admin rules/workshops/nesc-rule/nesc.shtml">http://www.puc.state.or.us/PUC/admin rules/workshops/nesc-rule/nesc.shtml</a>.

In follow-up to the written comments, Staff hosted an open forum workshop on February 27, 2007, to learn more about the issues and to reach agreement on how to proceed. The workshop was well attended by a broad representation from the electric and communication industry. At the workshop, electric utilities and interested persons raised concerns about the new arc-hazard rules covered in NESC Rules 410A3¹ and 420I2. However, the group reached general agreement that the 2007 NESC should be adopted into PUC rule without exception with the provision that PUC Staff perform an investigation prior to June 1, 2008, as to the arc-hazard rule cost impacts, effective dates, and potential conflicts with Oregon-OSHA regulations.

## Impacts for Implementing the 2007 edition of the NESC

The adoption of the 2007 NESC will have a cost impact on businesses, government entities and other organizations such as electric utilities, telecommunications utilities, telecommunications

<sup>&</sup>lt;sup>1</sup> Per its own language within the NESC, Rule 410A3 does not become effective until January 1, 2009.

providers, cable television operators, and other entities that construct, operate or maintain electric supply lines and communication lines and associated equipment. The cost impacts will be different for the various utilities, operators, and other entities, depending on their systems, facilities and practices.

For example, Portland General Electric (PGE) has itemized its cost impacts in a letter (*see* Attachment A). PGE estimates that changes in the 2007 NESC will increase its annual operating expenses by over \$280,000 per year, with initial costs of almost \$1,000,000. The majority of these costs have to do with new arc-hazard rules, covered in NESC Rules 410A3 and 420I2. The company is also concerned with the NESC arc-hazard rule conflicts with OR-OSHA regulations.

Springfield Utility Board stated that the arc-hazard rules implementation costs would be prohibitive and emphasized concerns about 2007 NESC conflicts with Oregon OSHA regulations (*see* Attachment B). McIntosh Utility Services and Training, PC, recommended that the PUC not adopt 2007 NESC rules that conflict with OR-OSHA Standards (*see* Attachment C). PacifiCorp stated that it supports adoption of the 2007 NESC, but it raised concerns about the effective date (January 1, 2009) for Rule 410A3 may be too premature, not allowing enough time for utility assessments and compliance (*see* Attachment D).

The OJUA expressed support for the adoption of the 2007 NESC with the caveat that PUC should clarify the new Commission Safety Rules in OAR Chapter 860, Division 024 that exceed 2007 NESC requirements (*see* Attachment E). Staff is appreciative of the OJUA's support in the adopting the 2007 NESC and the training seminars it has planned for the 2007 NESC. Staff is willing at education forums, workshops, and at OJUA meetings to clarify the concerns that OJUA raises here. However, Staff does not believe that formal clarification is needed in this rulemaking docket. Basically, the new Commission Safety Rules in OAR 860-024-0011 (Inspections of Electrical Supply and Communication Facilities), OAR 860-024-0012 (Prioritization of Repairs by Operators of Electric Supply Facilities and Operators of Communication Facilities) and OAR 860-024-0016 (Minimum Vegetation Clearance Requirements) are PUC rules that complement the NESC basic standards.

PUC Staff believes there will be savings to operators with some NESC rule changes in the 2007 edition, because some of the changes allow more compliance latitude. An example is the change in NESC Rule 231A, which allows lesser clearances for fire hydrants to utility poles, with approval of the local fire authority

### Arc-Hazard Assessments and Clothing Rules

As mentioned above, the main concern of the interested organizations and persons in this docket is the arc-hazard rule covered in NESC Rule 410A3. This rule requires the employers of utilities and operators to perform arc-hazard assessments for their workers and to establish the arc-rating of the clothing for their workers.

Staff acknowledges that there may be implementation issues with the Rule 410A3 standards. Staff recognizes that the January 1, 2009, effective date for NESC Rule 410A3 may not allow sufficient time for employers to perform the necessary facility assessments and for workers to obtain appropriate arc-rated clothing. Staff further recognizes that an agreement may be needed to

determine which agency (the PUC or Oregon OSHA) is primarily responsible for the enforcement of arc-rated clothing non-compliance matters. Last, Staff acknowledges that this rule is a major new requirement for electric employers and workers, and the compliance costs are significant. At the same time, Staff and others see the benefits of improved worker safety and improved facility safety conditions that this rule may bring. Consequently, Staff agrees that a more thorough follow-up investigation is needed on this rule prior to June 1, 2008.

## Conclusion

In closing, Staff recommends that OAR 860-024-0010 be modified to adopt the 2007 NESC, effective as soon as possible. In amending OAR 860-024-0010 to adopt the 2007 NESC, PUC Staff requests the Commission order PUC Staff to review impacts of the new arc-hazard standards covered in NESC Rules 410A3 and 420I2. The review shall cover: (1) conflicts with Federal and State Occupational Safety and Health Administration regulations and enforcement, (2) cost impacts to affected utilities, operators and interested persons, and (3) effective implementation dates.

/s/ Jerry Murray

Jerry Murray Senior Utility Analyst Utility Safety and Reliability



RECEIVED P.U.C.

January 30, 2007

Mr. Jerry Murray Senior Utility Engineering Analyst Oregon Public Utility Commission Labor and Industries Building Salem OR 97310

Subject:

PUC Adoption of 2007 NESC - PGE Comments

Dear Mr. Murray,

This letter is a Portland General Electric (PGE) response to your request for feedback regarding 2007 NESC changes. The following are comments regarding financial impacts to implement 2007 NESC changes, interplay between Division 024 and 2007 NESC and concerns over the new arc flash provisions.

- 1. Anticipated cost increases are estimated below.
  - a. \$7,500 per year due to wood pole class size increases from new Rule 250D.
  - b. \$33,000 per year due to insulator strength increases from new load factors applied to insulators and supports.
  - c. Pole design software update that incorporates 2007 NESC changes will cost approximately \$130,000 to implement in 2007.
  - d. \$39,000 in 207, \$745,000 in 2008, and \$240,000 per year starting in 2009 due to new arc hazard rules.
- 2. It is not clear whether ORS 757.035(3) requires the Commission to adopt any revision of the Code in its entirety if it is going to adopt it at all. However, if the Commission adopts the 2007 NESC in its entirety, this raises a legal issue concerning whether a utility must follow the more restrictive provisions in OPUC Division 24, Safety Standards. An example is NESC Rule 214.A.4 where the "Record of Defects" requires the recording of defects and such records be maintained until defects are corrected. Division 24 rules require more restrictive timelines for correction.
- 3. Utilities in Oregon have not experienced arc flash related injuries associated with high voltage work practices. This is primarily due to OSHA mandated rules

prohibiting bare hand or rubber gloving of circuits in excess of 5000 volts. Federal OSHA is in process of updating their standards to address and clarify how employers shall ensure the safety of their workers while in close proximity to high voltage energized lines or equipment. Subsequent OR-OSHA adoption of 1910.269 and 1926 subpart V will address safe work practices and protocols. There is potential confusion if OR-OSHA requirements differ from NESC Rule 410.A.3 and 420.1.1. For example, which rule would a utility need to comply with and who will be the enforcing authority? One course of action might be for the Commission to defer adopting these 2007 NESC rules until OR-OSHA formally adopts Federal OSHA changes. However, whether the 2007 NESC is adopted now or later, differences between a utility's obligations under the OSHA rules and the 2007 NESC will need to be addressed.

- 4. 2007 NESC Rules 410.A.3 and 420.1.1 become effective January 1, 2009. If the Commission adopts them by rule, significant costs are anticipated. To purchase FR apparel, evaluate and implement arc hazard analysis software, develop and implement arc hazard analysis processes, and pre-analyze substation arc hazards, a cost of \$784,000 is estimated. (This is the sum of 2007 and 2008 costs noted in 1.d. above)
- 5. Integrating 2007 NESC changes into PGE Standards is in-progress. NESC changes to structure and support loading criteria requires updating PGE pole design software. A software replacement is in process of being purchased, installed, and implemented. PGE's current schedule is to complete software implementation and Standards updates in March, 2007. Therefore, PGE recommends PUC adoption of the 2007 NESC occurs no sooner than April, 2007.

In summary, costs are estimated to exceed \$995,000 to implement 2007 NESC changes during 2007 and 2008. Ongoing annual costs starting in 2009 are anticipated to be \$280,000. Adopting the 2007 NESC in its entirety when provisions of the Oregon Administrative Rules appear to be in conflict is a source of confusion. Differences should be resolved before they develop into contested cases. If possible, PGE recommends deferral of adopting 2007 NESC rules that may be addressed differently by OR-OSHA. In any event, PGE recommends adopting 2007 NESC rule changes no sooner than April, 2007.

Sincerely,

Dave Van Bossuyt Manager, Distribution

Have Van Bosseyt



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February 20, 2007

Mr. Jerry Murray Senior Utility Engineering Analyst Oregon Public Utility Commission Labor and Industries Building Salem, OR 97310

Subject: PUC Adoption of 2007 NESC

Dear Mr. Murray:

This letter is a Springfield Utility Board response to your request for feedback regarding 2007 NESC changes. The following are comments regarding impacts to implement 2007 NESC changes:

- 1. Oregon Utilities, to my best recollection, have experienced very few arc-flash related injuries associated with high voltage work practices. The prohibition of bare hand or rubber gloving of circuits in excess of 5,000 volts is hugely responsible for these low numbers. If OR-OSHA requirements will be different, who will be the enforcing authority?
- 2. Oregon OSHA has been the driving influence in keeping the incidence of ARC-flash related injuries to a minimum. They have excellent job in keeping Oregon employee safety at low levels in accordance with Federal OSHA rules. Getting input from utility professionals and making rules that meet and often exceed federal rules has been to our advantage. If the Oregon PUC were to adopt NESC work rules it could result in much unnecessary confusion.
- 3. Currently with the use of hot sticks on voltages over 5kV, workers remain outside the arc distance as started in the IEEE Std 516.

In summary, I believe in erring on the side of safety, but there may be some cost prohibitive requirements that would most likely unnecessarily drain much needed funds from already strained safety coffers.

Michael H. Warren, Sr. Safety & Environmental Manager Springfield Utility Board McIntosh Utility Services and Training, PC 44 Rustic Road Appleton, Washington 98602

February 9, 2007

Mr. Jerry Murray Senior Utility Engineering Analyst Oregon PUC Labor and Industries Building Salem, Oregon 97310



Subject: PUC Adoption of 2007 NESC - MUST Comments

Dear Mr. Murray,

These comments are in your request for feedback regarding 2007 NESC changes. The following comments are to address work rules contained in the 2007 NESC.

- Power and Telecommunication utilities in the State of Oregon have not had flash or bum injuries associated high voltage accidental primary contact. The OR-OSHA rules contained in OR-OSHA 1910.269 are the primary reason: Because of the more restrictive rule on using high voltage gloves is limited to 5kV. In addition bare handing is not allowed in the State of Oregon. Oregon OSHA has adopted Federal OSHA 29CFR1910.269 and 29CFR1926 Sib Part V with exceptions. To adopt another set of work rules (NESC) has the potential to be confusing to workers in the utility industry.
- Oregon OSHA has done an excellent job in reviewing Federal OSHA changes and adopting rules using professional staff and getting input from utility professionals.
- The use of hot sticks on voltages over 5kV is one of the OR-OSHA exceptions that is more stringent than the Federal OSHA rule for working on energized parts. Workers maintain a distance from the exposed energized part that is far greater than the arc distance as started in the IEEE Std 516.

In summary, I would recommend that the Oregon PUC not adopt any of the 2007 NESC work rules as to avoid confusion and conflict with existing OR-OSHA rules 1910.269 and 1926 Sub Part V. Changes are being proposed on Federal OSHA 29CFR1926 Sub Part V at this time. Once Federal changes have been adopted Oregon OSHA staff will review the changes and either adopt or modify the new rules or changes to existing rules.

Sincerely, James 7. M Intoh

James F. McIntosh, PSC

McIntosh Utility Services and Training (MUST)

**IEEE Member 40144175** 

Northwest Public Power Association Associate Member

Journeyman Lineman IBEW Retired

From: Cunningham, Bill [mailto:Bill.Cunningham@PacifiCorp.com]

Sent: Wednesday, January 31, 2007 4:29 PM

To: MURRAY Jerry

Cc: Lyons, Greg; Caswell, Heide

Subject: FW: 2007 National Electric Safety Code PacifiCorp Compliance

See Pacific Power's response below.

From: Lyons, Greg

Sent: Wednesday, January 31, 2007 4:18 PM

To: Cunningham, Bill

Subject: 2007 National Electric Safety Code PacifiCorp Compliance

Bill,

Personnel in the transmission and distribution standards group have studied the changes appearing in the recently issued 2007 National Electric Safety Code documentation. From this study work, it was determined that there are not any code changes that will substantially impact our transmission and distribution construction standards.

However, the standards group has been working with our safety department and together we see a potential issue with the Supply and communications systems - Rules for employers section of the code. The section 41 has included a requirement stating the company shall perform an assessment to determine potential exposure to an electric arc for employees who work on or near energized parts or equipment. The results of these equipment assessments are to be used to determine the levels of protective clothing required when working near a specific piece of equipment. Research was done to find out more on this requirement and it was learned that all company installed transmission and distribution electric facilities are to be included in the assessment.

Safety and standards is not sure at this time how long it will take to complete an assessment of the entire transmission and distribution electrical system. The new code requirement calls for the assessment to be completed by January 1, 2009. This may be a manageable date but without having a total grasp of the scope and magnitude of this effort PacifiCorp may have to ask for an extension to the January 1, 2009 date to complete the assessment work.

The company will be completing arc flash assessments for all our installed substation metal clad switchgear this spring so this assessment is actually underway. As a reply to the Oregon Commission, PacifiCorp can comply with the 2007 National Electric Safety Code but PacifiCorp may be requesting an extension to the section 41 rule if PacifiCorp finds we can not complete the arc flash assessment work by January 1st, 2009. Let me know if you have any questions.

Thanks, Greg



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January 26, 2007

Jerry Murray, P.E., Senior Utility Analyst Utility Safety & Reliability Section Oregon Public Utility Commission 550 Capitol Street NE PO Box 2148 Salem, OR 97308 RECEIVED

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P.U.C.

Dear Jerry:

Thank you for providing notice of the PUC staff's plans to begin rulemaking to incorporate the 2007 edition of the National Electrical Safety Code (NESC) into Oregon Administrative Rule (specifically OAR 860-024-0010).

The OJUA supports adoption of the Code with the caveat that the safety staff as part of the rulemaking process identify those areas where elements of Division 24 and Division 28 as applicable are more restrictive than the NESC. For example OAR 860-024-0011 sets out specific rules and percentages for inspection timeframes and types and OAR 860-024-0012 prescribes timeframes for repairs. NESC section 214 allows for inspection as experience dictates and the recording of defects until corrected. Other areas where the Commission's Rules differ from the NESC include vegetation management and maintenance of inspection and correction records.

During the 2006 formal rulemaking industry urged the safety staff to clarify those elements of the Commission's rules which exceed the NESC. As the enforcement agency this would be an excellent opportunity for you to provide that clarity. Using this occasion to do so will help the Commission and Industry educate all involved with compliance, alleviate confusion and may avoid future disputes over interpretation of the rules.

Please contact me with how the OJUA may be of assistance in this matter.

Sincerely,

Jeff Kent

OJUA Chairman

Jaffrey m. Kent

Dedicated to the Education, Cooperation, and Resolution of Utility Joint Use Issues

## CERTIFICATE OF SERVICE

## AR 513

I certify that I have, this day, served the foregoing document upon those listed on the attached list by emailing to those with known email addresses and by mailing on April 12, 2007, a copy properly addressed with first class postage prepaid and by email to those with known email addresses.

Dated at Salem, Oregon, this 11th day of April, 2007.

Diane Davis

**Regulatory Operations** 

On Behalf of the Staff of the

Oregon Public Utility Commission

Printed: 4/11/2007

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