



*persons in the course of its review or in a subsequent review. Workshops should begin on or after June 1, 2008, so that utilities have time to conduct their internal reviews.”*

The Arc Flash Protection Rule is the only requirement within the 2007 NESC that has a delayed effective date. The Rule’s effective date was originally delayed to allow utilities and employers additional time for facility assessments and for making decisions on how electrical workers need to be protected against arc flash hazards. NESC Rule 420.I.2 further requires employees to wear clothing or clothing systems as directed by their employers.

As mandated by the Commission Order 07-179, Staff has conducted and concluded its investigation into this matter. Staff’s investigation included an industry workshop and meetings with affected parties. In addition, Staff requested and received written comments from electric utilities, labor unions, contractors and other interested parties on implementation issues associated with the Arc Flash Protection Rule. Interested parties may review the records associated with Staff’s investigation at the PUC’s Safety website.<sup>1</sup>

Staff began its Arc Flash Protection Rule investigation with a panel presentation before the Oregon Utility Safety Committee (OUSC) on May 16, 2008. The OUSC has over 200 members who are utility safety officials from throughout Oregon. Representatives of Portland General Electric (PGE), PacifiCorp, Oregon OSHA, PUC Staff and others served as panel speakers. OUSC members were advised of the June 17 Arc Flash Workshop (hosted by Staff) and the need to provide written comments to Staff to justify a PUC rulemaking proceeding.

On June 17, 2008, Staff held an industry workshop on the Arc Flash Protection Rule in the PUC’s Main Hearing Room. AR 513 interested persons, members of the OUSC and the Oregon Joint Use Association (OJUA), representatives of utilities and others attended the workshop. A number of issues associated with the Arc Flash Protection Rule were raised at the workshop including: possible errors in the NESC tables, selection of assessment methodologies and software, employee and contractor training, availability of resources (including fire retardant clothing), and liability concerns. PGE, PacifiCorp, and the Oregon electric cooperatives made it clear that the PUC should initiate a rulemaking to delay the implementation date provided in the Arc Flash Protection Rule.

In follow-up to the workshop, Staff received numerous written comments from various interested parties.<sup>2</sup> All utilities that provided written comments and the

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<sup>1</sup> See PUC Website at <http://www.puc.state.or.us/PUC/safety/nescreview.shtml>.

<sup>2</sup> See PUC Website at <http://www.puc.state.or.us/PUC/safety/arcflash.shtml>.

Oregon Rural Electric Cooperative Association (ORECA) submitted arguments supporting a delay in the Arc Flash Protection Rule. PGE stated a delay of six months to a year was necessary. Local Union #659 of the International Brotherhood of Electrical Workers (IBEW) submitted comments opposing any delay. IBEW 659 stated that electrical workers deserve the protection mandated by the NESC Arc Flash Protection Rule, including arc flash protection training.

In response to the above comments, on July 17, 2008, Staff sent an e-mail message to all interested parties recommending a PUC rulemaking proposal to delay implementation of the Arc Flash Protection Rule for an additional six months. In the same e-mail Staff asked for comments as to the acceptability of the proposal and other information that would justify a PUC rulemaking. Staff only received two written comments in response.<sup>3</sup>

One was from McIntosh Utility Services and Training (MUST), a provider of safety training and consulting services to utilities and other employers about electrical worker safety matters. MUST recommended a full one-year extension to allow utilities and employers enough time to (1) complete facility assessment studies, and (2) provide employees with appropriate arc flash protection.

PGE also provided written comments indicating an extension beyond six months was appropriate in order to allow the possibly erroneous NESC tables within the Arc Flash Protection Rule to be corrected and to allow for the development of industry consensus policies and training on this matter. PGE stated the delay would afford the company more time to make prudent decisions in meeting the intent of the Rule and to provide more effective funding. Such a delay would also allow more time for federal and Oregon OSHA agencies to provide better guidance about employee arc hazard protection.

Electric utilities stated that the compliance costs associated with the Arc Flash Protection Rule are substantial. For example, PGE estimates that costs for protective clothing and training for its employees will be over \$600,000 initially, not including future costs for new employees, ongoing training, and clothing replacement. In addition the company expects to spend about \$1,300,000 in 2008, 2009 and 2010 to upgrade existing plant and to provide new equipment to promote compliance with the Rule. Further, Wasco Electric Cooperative (WEC) claims worker clothing program costs vary from \$400 to \$2,000 per employee depending on the utility assessment methodology chosen.

Staff has completed its investigation into the new Arc Flash Protection Rule and concludes as follows:

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<sup>3</sup> See written comments nos. 12 and 13 at PUC Website  
<http://www.puc.state.or.us/PUC/safety/arcflash.shtml>

- A significant number of Oregon electric utilities and organizations are adamant that an additional delay of six to twelve months is necessary for implementation of the Arc Flash Protection Rule. Electric utilities requesting the delay include: Consumers Power, Oregon Trail Electric Cooperative, PacifiCorp, Portland General Electric, and Wasco Electric Cooperative. Other organizations requesting a delay include International Line Builders, McIntosh Utility Services and Training, and the Oregon Rural Electric Cooperative Association.
- The International Brotherhood of Electrical Workers (IBEW), both the national organization and Local Union No. 659, are opposed to the PUC delaying the implementation of the Arc Flash Protection Rule. The IBEW's position is that electrical utilities and industry have had more than enough time to prepare and achieve compliance with the Arc Flash Protection Rule.
- ORECA and Oregon electric utilities allege that NESC table 410-2 within the Arc Flash Protection Rule contains errors. The NESC Subcommittee 8, which has national standard oversight responsibility for the Arc Flash Protection Rule, has supposedly corrected the errors; however, these corrections will not be published as an official amendment to the NESC until later this year. Parties claim this fact alone justifies a delay in the implementation of the Arc Flash Protection Rule.
- The Arc Flash Protection Rule will cause significant cost impacts to Oregon's electric utilities. PGE alone will incur over the next three years about \$2,000,000 in increased capital and operating costs in complying with the Arc Flash Protection Rule. Other electric utilities and electrical employers will incur significant costs in providing arc flash protection to workers. A delay will allow utility safety officials more time to interact together to develop better and more uniform clothing and protection schemes to protect electric workers against arc flash hazards.
- Federal OSHA may in the future issue regulations and guidance about how electrical workers need to be protected with personal protective equipment (PPE) against arc flash hazards. However, Staff believes such future Federal OSHA regulations will not be in conflict with the NESC Arc Flash Protection Rule. Unlike OSHA regulations, the NESC does not mandate whether the employer or employee must supply and pay for the necessary PPE. The NESC only requires that utilities or employers perform facility assessments and give instruction to their employees as to the levels of arc flash protection necessary.

- Arc flash clothing and clothing systems today offer electrical workers proven life-saving protection against electric arc exposure. There has been considerable innovation in the last 10 years on fire-retardant clothing. Staff believes electrical workers need to be trained in the use of such clothing. Staff believes that delaying implementation the Arc Flash Rule beyond January 1, 2010 would be unacceptable and would put electrical workers at unnecessary risk of death and serious injury.
  
- Staff did not appreciate the potential impact of the Arc Flash Protection Rule upon the electrical utility industry and the PUC when the 2007 NESC was first adopted into Oregon law in May of 2007. During the investigation process Staff discovered it may not have the personnel to review the implementation of, and to enforce the Arc Flash Protection Rule when implemented. Additional tasks and responsibilities which may be required of Staff, include:
  - Review of facility arc flash exposure assessments by utilities,
  - Review associated utility work practices,
  - Audit utility facilities for posted signage,
  - Review selection of worker clothing and clothing systems,
  - Review employee and contractor training, and
  - Perform field verifications of clothing usage by crews.To accomplish the above tasks, Staff may need additional resources.

Michael Weirich, ODOJ, supported Staff in the investigation and informal rulemaking process. Michael also attended the Staff-industry workshop held on June 17, 2008. He also approved the language provided in Attachment A from a legal perspective.

In summary, Staff recommends the Commission initiate a rulemaking that would delay the effective date of the NESC Arc Flash Rule from January 1, 2009 until January 1, 2010.

**PROPOSED COMMISSION MOTION:**

Initiate a rulemaking to amend OAR 860-024-0010 as described in Attachment A to Staff's Report.

Attachment A

## **Attachment A**

### **Oregon Administrative Rule**

**860-024-0010**

#### **Construction, Operation, and Maintenance of Electric Supply and Communication Lines**

- (1) Except as provided in section (2), E**every operator shall construct, operate, and maintain electrical supply and communication lines in compliance with the standards prescribed by the 2007 Edition of the National Electrical Safety Code approved June 16, 2006, by the American National Standards Institute.
- (2) Rule 410.A.3 of the 2007 Edition of the National Electrical Safety Code will not become effective until January 1, 2010.**