

March 11, 2025

Received
Records Management
Mar 12, 2025

Cover Letter

Petition to Reword WAC 480-100-373

Maintaining a consistent and stable voltage level is a fundamental responsibility of an electric utility. Each utility files a tariff stating its standard service voltages. WAC 480-100-373 establishes allowable voltage tolerances for electric utilities serving customers in Washington State. When voltage levels fall outside these requirements, an investigation is necessary to identify the cause and implement a solution. The issue often stems from a combination of utility-owned and customer-owned equipment. Determining equipment ownership and control is essential for developing an effective resolution.

A recent low-voltage investigation revealed that the electric service provided by the utility frequently dropped below 95% of the stated tariff voltage for 15 minutes or longer when measured at the utility revenue meter. During the investigation and mitigation, the utility asserted compliance with WAC 480-100-373 by maintaining the feeder voltage (7,200 volts) within $\pm 5\%$ of nominal. However, we contend that WAC 480-100-373 should be applied to the serving voltage—480 volts in this case—rather than the primary voltage.

The discrepancy between these interpretations makes managing voltage drops caused by the transformer challenging. In most cases, the utility owns and sizes the transformer, leaving the customer with no access or control. In this specific low-voltage investigation, the utility determined that the customer's load caused excessive voltage drop across the transformer while the transformer's input voltage remained within WAC requirements. It is our contention that WAC 480-100-373 was to be applied to the service voltage, (transformer output) not the feeder voltage (transformer input)

In a report to the affected customer, the utility stated:

The fact that multiple residential customers in the area do not have voltage outside the $\pm 5\%$ range indicate the feeder voltage is with $\pm 5\%$ of nominal. This indicates We are meeting the WAC voltage requirements in WAC 480-100-373 and we are not obligated to make changes to the circuit performance.

The utility interprets the WAC rule as requiring them to maintain only the feeder voltage within $\pm 5\%$ of nominal. They argue that the wording, “*The voltage on each primary*

March 11, 2025

distribution feeder must be maintained as follows...”, mandates consideration of the feeder voltage alone when applying the WAC rule.

It is true that most electric utilities regulate feeder voltage; however, this is not a requirement but rather a method to ensure service voltage levels comply with both tariff and WAC standards

A clear rewording of WAC 480-100-373 would ensure a universal application, specifying that the utility must maintain its delivered voltage, measured at the point of service, within $\pm 5\%$ of their tariff-listed voltage, with a maximum total allowable variation not exceeding 8%. The customer is responsible for managing voltage at all points beyond the point of service.

This petition is made by:

John E. Skog P.E.

Consulting Engineer

3323 Boston Harbor Drive NE

Olympia, WA 98506

Phone: 360.951.3535