



Evergy Missouri Metro  
Case Name: 2026 Evergy MO Metro Rate Case  
Case Number: ER-2026-0143

Requestor Alvarez P -  
Response Provided June 09, 2026

Question:5005

Refer to the Company's responses to OPC 2015 and OPC 2016, which appear to indicate that the Company has spent hundreds of millions of dollars for microprocessor-based relays installed during 2021-2025.

a. Describe the Company's relay replacement program. Provide the approved capital spending request, and all associated materials, for the approved capital expenditures made under this program. If completed annually, provide the approved capital spending requests by year from 2021-2025.

b. Provide the Company's current relay installation policy, and the Company's historical relay installation policy (before the decision to replace existing relays with microprocessor relays was made). Explain the rationale for the changes in the microprocessor relay installation policy.

c. Refer to the Company's responses to subparts (a) and (b) above. Provide each and every benefit-cost analysis the Company completed, and identify each which indicated that the benefits of the policy change were likely to exceed costs. If the Company completed no such analysis, please explain why not.

d. Refer to the Company's responses to subparts (a) and (b) above. Provide each and every benefit-cost analyses the Company completed on the retroactive application of the policy and the associated decision to replace almost 3,000 relays with microprocessor relays. If the Company completed no such analysis, please explain why not.

e. Provide a list of microprocessor relay replacement projects the Company 1) placed into service since the Company's last rate case through the end of the test year in this case; and ii) has placed or expects to place into service during the post-test year period. For each project please provide:

i. The year and month the project was placed, or that is projected for placement, into service.

ii. The capital cost of the project.

iii. The alphanumeric identifier for the project's substation or circuit such that the identifier matches those used in your responses to OPC data requests OPC 2004 and OPC 2006.

iv. Your justification(s) for why the relay replacement was required for safe and reliable service.

v. The 'score' for the asset replaced or the project (from Asset Lens?).

vi. The inputs into each of the six score drivers (as described in the Company's response to OPC 2020).

vii. Any benefit-cost analysis completed on the project (including workpapers, assumptions, inputs, etc.)



**RESPONSE:** (do not edit or delete this line or anything above this)

**Confidentiality:** PUBLIC

**Statement:** This response is Public. No Confidential Statement is needed.

**Response:**

The Company clarifies that the referenced expenditures do not represent the unit cost of individual microprocessor relays. The approximate cost of \$130,000 is associated with a relay panel, which may include one or multiple relays, along with associated expenses such as wiring, control interfaces, and installation labor.

Microprocessor relays are typically installed or replaced as part of broader capital projects, such as substation upgrades, protection system modernizations, or full relay panel replacements. As a result, reported capital expenditures for these projects reflect the total project scope rather than the cost of individual relay devices.

The cost of an individual microprocessor relay varies significantly depending on the specific relay type, application, manufacturer, and functional requirements. Accordingly, it is not appropriate to interpret total project or panel-level costs as representative of per-relay unit costs. Therefore, the Company's prior responses to OPC 2015 and OPC 2016, which reflect aggregate capital spending on projects that include relay installations, should not be construed as indicating that hundreds of millions of dollars were spent solely on individual microprocessor relays. The responses previously provided in OPC 2015 parts (e) and (f) were incorrect. Based on subsequent review, it is evident that the actual number of relays replaced is approximately one-third of what was originally reported.

Due to the complexity of the underlying data and the reconciliation process described above, we are unable to provide an exact relay replacement count without an exhaustive effort. Historically, individual relay replacements have not been tracked or reported at a device-specific level, and developing precise counts would require a detailed, resource-intensive review of records. As a result, only an approximate magnitude of variance from the original values can be reliably stated. A subsequent review incorporating updated reporting and improved reconciliation methods—specifically leveraging device-level attributes and cross-referencing installation and retirement records—has enabled a more accurate alignment of replaced and installed relays. While this has materially improved accuracy, the absence of historically tracked device-level data limits our ability to produce exact counts without significant additional effort.

- a) The Company's relay replacement program consists of both opportunistic and planned replacements. Opportunistic replacements occur in response to in-service failures or are performed in conjunction with major asset replacement projects (e.g., substation upgrades or transformer replacements). Planned replacements are identified through an evaluation process that considers multiple risk-based and operational factors.

These factors include, but are not limited to:

- Model performance and known reliability concerns
- Maintainability and availability of replacement parts or technical support
- Relay technology type (e.g., electromechanical, solid-state, microprocessor-based)
- Historical work order and maintenance data

- Applicability to NERC reliability standards or critical protection schemes

This evaluation framework supports a proactive, condition- and risk-based approach to managing the relay population and prioritizing replacements.

The Company conducts asset replacement activities as part of its broader capital investment programs. Capital expenditures are generally approved at the project level and often encompass multiple asset types within a single scope.

In addition, the Company maintains certain asset-specific funding authorizations for replacement activities. However, these authorizations capture only a portion of total expenditures. A substantial number of asset replacements are performed within larger, multi-scope capital projects (e.g., facility upgrades or system improvements), and associated costs are not separately tracked or reported by individual asset type.

Accordingly, the Company does not maintain capital spending requests or reporting specific solely to individual asset types.

- b) The Company does not maintain a single, formal “relay replacement policy.” Instead, relay installation and replacement practices are governed by engineering standards, asset management practices, and project-specific design criteria.

**Rationale for Transition to Microprocessor Relays:**

The transition to microprocessor-based relays reflects advancements in protection technology and evolving system reliability requirements. Compared to legacy electromechanical and early solid-state relays, microprocessor relays provide:

- Improved protection speed and accuracy
  - Enhanced reliability and reduced risk of misoperation
  - Expanded functionality (e.g., multifunction protection elements)
  - Integrated diagnostics, event recording, and disturbance monitoring
  - Communication capabilities supporting system visibility and control
  - Improved maintainability and reduced dependence on obsolete components
- In addition, many legacy relay types are no longer supported by manufacturers, making maintenance increasingly difficult. As a result, microprocessor relays have become the standard for modern power system protection, and the Company has adopted their use as part of a broader asset modernization and reliability strategy.
- c) The Company did not complete any formal benefit-cost analyses related to the change associated with the adoption and expanded use of microprocessor-based relays. The transition to microprocessor relay technology was driven by engineering, operational, and asset management considerations rather than formal economic modeling. Specifically, the policy shift reflects the need to address increasing obsolescence of legacy electromechanical and early solid-state relays, as well as to improve system protection performance and maintain compliance with evolving reliability expectations. The Company’s decision to adopt microprocessor relays as the standard was based on their demonstrated advantages, including improved protection speed and accuracy, enhanced reliability, expanded functionality, integrated diagnostics and event recording, and improved communication capabilities. These attributes support more effective system protection and asset management practices.

The primary benefits of the change include reduced risk of relay misoperation or failure to operate, improved system reliability, and greater operational visibility. While these benefits are considered significant, they are not readily quantifiable on a project-specific or programmatic basis. As a result, the Company did not evaluate the policy change through a formal benefit-cost analysis framework.

- d) The Company did not complete any formal benefit-cost analyses related to the retroactive application of this change or the associated relay replacements. As discussed above, the Company does not maintain a formal policy requiring such analyses and does not perform benefit-cost analyses for asset-specific replacement activities.

Instead, replacement decisions are based on engineering and operational considerations, including reliability, performance, obsolescence, and overall system needs.

- e) (Answer for i. – iii.)

The Company conducts asset replacement activities as part of its broader capital investment programs. Capital expenditures are generally approved at the project level and often encompass multiple asset types within a single scope.

In addition, the Company maintains certain asset-specific blanket funding authorizations for replacement activities. However, these authorizations capture only a portion of total expenditures. A substantial number of asset replacements are performed within larger, multi-scope capital projects (e.g., facility upgrades or system improvements), and associated costs are not separately tracked or reported by individual asset type.

Accordingly, the Company does not maintain capital spending requests or reporting specific solely to individual asset types.

- iv.) Relay replacements are undertaken to maintain safe and reliable operation of the electric system. Replacement is required when relays approach or exceed expected service life, exhibit declining performance, or no longer meet current operational, safety, or cybersecurity standards.

Obsolete or degraded relays may increase the risk of misoperation, failure to operate, or delayed fault clearing, which can result in equipment damage, extended outages, or reduced system reliability. In addition, legacy equipment may lack manufacturer support, spare parts availability, or compatibility with modern protection and control schemes.

Accordingly, relay replacements are performed to ensure proper system protection, improve reliability and fault response, maintain compliance with applicable standards, and support continued safe operation of the Company's facilities.

- v.) Asset Lens is not utilized in the evaluation or prioritization of substation relay replacement projects; therefore, no such score is available.

- vi.) The inputs to each of the six score drivers are described in the Company's prior response to OPC 2020, which outlines the data and considerations underlying each driver.



vii.) As discussed above, the Company does not maintain a formal policy requiring such analyses and does not perform benefit-cost analyses for asset-specific replacement activities.

**Information provided by: Jesse Whipple**

**Attachment(s):**

**Missouri Verification:**

I have read the Information Request and answer thereto and find answer to be true, accurate, full and complete, and contain no material misrepresentations or omissions to the best of my knowledge and belief; and I will disclose to the Commission Staff any matter subsequently discovered which affects the accuracy or completeness of the answer(s) to this Information Request(s).

Signature /s/ *Brad Lutz*  
Director Regulatory Affairs