

From: [Paydar, Naveed](#)
To: [Bronkall, Bob](#)
Cc: [Johnson, Cliff](#)
Subject: RE: [EXTERNAL] Voltage Regulator
Date: Friday, July 29, 2022 11:11:34 AM
Attachments: [image004.png](#)
[image005.png](#)

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Hi Bob,

Our analyst did some research: the only applicable rule he found was GO 95 Rule 92.1-F4, which requires transformer or regulator to be installed *either* above (or at least 6 feet below) communication equipment. Nothing dictating it to be installed OH.

He mentioned that from an engineering perspective, there's no reason why a voltage regulator cannot be installed underground or on a pad. UG transformers are installed in many places. So long as the vault provides adequate ventilation to prevent overheat, there's no reason why they cannot be located UG (except if there're design constraints that prevent such an installation). And PG&E's Greenbook does not require an OH installation. In this case (based on the photo), it's possible that PG&E opted for OH to reduce costs.

Rule 92.1-F3

(3) Drip Loops: The lowest point of the drip loop of the terminal or end of a vertical run or riser of supply conductors of more than 750 volts shall be not less than 48 inches above the nearest communication conductor level below the drip loop. Where supply conductors are of more than 7,500 volts, this clearance shall be not less than 60 inches.

The lowest point of the drip loop of supply conductors of 750 volts or less shall be not less than 36 inches above the nearest communication conductor level below the drip loop except that the drip loop of such supply conductors may be less than 36 inches but not less than 12 inches above the level of police or fire alarm conductors carried as specified in Rule 92.2.

(4) Transformers or Regulators: Transformers or regulators of supply systems shall normally be located above communication equipment. Where it is necessary to locate transformers or regulators below communication equipment they shall be placed at least 6 feet vertically below and all energized parts shall be protected and guarded so as to afford the least possibility of contact.

Where transformers or regulators are installed on platform having continuous flooring which extends not less than 1 foot horizontally outside of the vertical plane of all transformers or regulator lead and bus wires on the same pole or structure, cables or other conductors may be installed at a minimum vertical distance of 12 inches below the transformer or regulator cases provided such cables or conductors do not extend laterally beyond the platform (see Figure 92-1).

Dr. Naveed Paydar | California Public Utilities Commission | Executive Division
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From: Bronkall, Bob <BBronkall@co.humboldt.ca.us>
Sent: Monday, July 25, 2022 1:18 PM
To: Paydar, Naveed <Naveed.Paydar@cpuc.ca.gov>
Cc: Johnson, Cliff <CJohnson@co.humboldt.ca.us>
Subject: [EXTERNAL] Voltage Regulator

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Naveed-

I am writing to you today to seek clarification on CPUC requirements. If you are not the correct person to ask, would you please forward this email to the correct person?

PG&E installed an above-ground, pole-mounted voltage regulator in a coastal zone. PG&E did not realize that a coastal development permit was required for the installation. PG&E is in the process of seeking an “after the fact” coastal development permit for the voltage regulator.

When PG&E was asked why the voltage regulator cannot be placed underground, PG&E indicated that CPUC requires it to be above-ground. Would you please clarify if CPUC has such requirements that necessitate that such equipment be installed above-ground?



--Bob



Robert W. Bronkall, PE, LS

Deputy Director / County Surveyor

[Public Works Department – Land Use Division](#)

707.445.7205 Afternoons

[Public Works Department – Road & Equipment Maintenance Division](#)

707.445.7421 Mornings

From: Johnson, Cliff <CJohnson@co.humboldt.ca.us>

Sent: Friday, July 22, 2022 4:25 PM

To: Bronkall, Bob <BBronkall@co.humboldt.ca.us>

Subject: Voltage Regulator

Hi Bob,

PG&E is telling me that a voltage regulator is not allowed to be undergrounded by the PUC. They have to date been unable to provide me with any citation to such a restriction so if you happen to have any information or ideas to research that I would kindly appreciate the assistance.

Cliff Johnson, Supervising Planner
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