When to use a three-phase pad-mounted transformer

At issue
In an underground primary feeder system, three-phase pad-mounted transformers are an alternative to three-phase substation transformers.

Recommendation
When compared to substation transformers, pad-mounted transformers offer many benefits. These include:

- Reduced land requirements and installation costs
- Improved aesthetics
- Enhanced safety

Rationale
Reduced land requirements and installation costs
Because the physical profile of a pad-mounted transformer is smaller than that of a substation, land requirements and associated costs of obtaining rights-of-way and permits are reduced. Additionally, because they are tamper-proof and self-contained, pad-mounted transformers can be installed in unsecured areas, saving the additional cost and space of a fence or enclosure. Access for maintenance is also made easier.

Improved aesthetics
Pad-mounted transformers are smaller than equivalent substations and have uncluttered, unobtrusive exteriors.

Enhanced safety
Public safety is enhanced through a tamper-resistant design that meets or exceeds IEEE Std C57.12.28™-2014 standard security requirements. With underground cable access and fully enclosed connections—particularly in dead-front designs with elbow inserts—pad-mounted transformers offer increased safety for operating personnel. The enclosed design also shields the unit from environmental hazards.

The connection
Eaton offers its Cooper Power™ series three-phase pad-mounted transformers in the following ratings:

Three-phase
- kVA range: 45-10,000 kVA
- Primary voltage: 2,400-46,000 volts, with or without taps; dual voltages available
- Secondary voltage: 208Y/120-14,400 Volts

See publications
- 210-12 Three-phase Pad-mounted Compartmental Type Transformer
- S210-12-1, Three-phase Pad-mounted Compartmental Type Installation and Maintenance Instructions
When to use a three-phase pad-mounted transformer