

QA/QC Checklist

PENNSYLVANIA STATE UNIVERSITY



Construction Services

DIVISION 33 – Utilities

33 73 00 – Electrical Utility Transformers

General Information	Programming/Design	Bidding/Preconstruction	Installation/Construction	Closeout/Warranty
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01 General

1. OPP Engineering Services specifies and orders exterior transformers for buildings on campus at UP. Typical lead times can be up to 26 weeks if OPP does not have a transformer in stock. Contact Dick Harris (rsh3@psu.edu ; (814) 777-8742), OPP Utility Systems Engineer, ASAP after the building electrical load is estimated.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Ideally, the primary conduit that enters the vault/manhole below the transformer should be 36” below finished grade.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
3. If a transformer is located where they may be exposed to vehicular impacts, concrete-filled, steel bollards designed to protect the transformer, should be installed approximately 36” from the edges of the transformer pad. Otherwise, bollards are generally not required.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
4. If bollards are required, they should not interfere with transformer doors and should allow doors to swing 90 deg.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
5. Maintain a minimum 10’ clearance in front of transformer for maintenance/access. This 10’ clearance may include sidewalks, roadways, or service parking stalls as appropriate.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
6. On PSU-owned transformers, OPP Electrical Services will not energize a transformer until it has been inspected by an International Electric Code (NFPA 70) certified inspector. Contact the L&I inspector for the project and have the inspector send an email stating that “all electrical components (related to the transformer and project in question) have been installed in accordance with the approved L&I plans.” Forward this email to Dick Harris (rsh3@psu.edu).	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
7. Before a transformer can be energized, OPP Electrical Services requires that the short circuit study has been completed and downstream electrical breakers/disconnects have been tested in accordance with PSU standards prior to energizing transformers. Submit to Chuck Dobbins (ccd10@psu.edu ; (814) 777-1583), OPP Senior Electrical Engineer.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
8. OPP Electrical Services should land all primary and secondary conductors serving transformers because the weight of the conductors may damage the transformer backings and cause an oil leak. OPP will pull the primary conductors while the contractor will pull the secondary conductors (but OPP will perform the final connections).	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
9. During construction, if there are temporary roads in close proximity to a transformer, the transformer should be temporarily protected with Jersey barriers. If a transformer is located where it may be exposed to construction	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>

debris, mortar splashes, etc., the transformer should be protected with plywood or sheet metal.					
10. OPP will inspect temporary transformers/electrical service to contractor trailers. Contact Ed Conklin (elc3@psu.edu ; (814) 777-1193), OPP Design Services Senior Code Compliance Representative.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
11. Service transformers and service panels shall not have a grounding conductor between them. The wire serves no purpose and OPP removes them.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>