

Recommendation

The US-9 substation transformer should have the oil filtered to remove the water and a follow-up dissolved gas analysis (DGA) performed to confirm elimination of the water content.

Future testing sessions should include a trend analysis of oil test results with the potential for early identification of transformer problems. This can help to minimize damage and related expense of any issues.

14. Building 25 Medium Voltage Spare Breaker

Issue

The spare circuit breaker in building 25 appears to have been exposed to moisture leading to operational issue where the breaker operates intermittently from a mechanical standpoint. As such, this should not be considered a viable spare breaker.

Recommendation

The building 25 spare circuit breaker should be refurbished in accordance with manufacturers' recommendations. Refurbishment should include full testing to verify serviceability.

15. Breaker Issues

Issue

Several circuit breakers were found with varying issues as follows:

Location	Swbd/Panel	Circuit ID	Issue
Bldg. 1 Main Vault	Swbd A	Main	Tripped prematurely on LT and ST tests.
Bldg. 1 Main Vault	Swbd B	Main	Tripped prematurely on LT and ST tests.
Bldg. 1 Main Vault	Swbd B	Tie	Tripped prematurely on LT and ST tests.
Bldg. 1, Outside Closet	RSPA	41	Defective.
Bldg. 1, By Shop	Swbd EMDP5	ATS-C	Tripped prematurely on LT test.
Bldg. 1, A026-1	EUL-2-BA	Main	Defective.
Bldg. 1, EC24A	UL-2-4A	25, 27	Water damaged.
Bldg. 1, D166-1	CLL-3-1D	4	Delayed opening.
Bldg. 1, C080B-1	CC8	16	Broken operating handle.
Bldg. 1, D101-11	CUL-D101-BD	11, 20	Broken operating handle.
ACA, G163-1	AECL1B	5-9	Defective.
Bed Tower, J102-1	L13B	97	Bus connection cross-threaded - overheated.
Bed Tower, J451-1	H42	42	Breaker won't open or close.
MEP Bldg.	US-8	Pnl MEP-EQ3	Charging indicator inoperable.
MEP Bldg.	US-8	Tie	Defective trip actuator.
MEP Bldg.	US-9	Main	Broken charging handle.

Recommendation

Location	Swbd/Panel	Circuit ID	Recommendation
Bldg. 1 Main Vault	Swbd A	Main	Monitor for nuisance trips. Repair if they develop.
Bldg. 1 Main Vault	Swbd B	Main	Monitor for nuisance trips. Repair if they develop.
Bldg. 1 Main Vault	Swbd B	Tie	Monitor for nuisance trips. Repair if they develop.
Bldg. 1, By Shop	Swbd EMDP5	ATS-C	Monitor for nuisance trips. Repair if they develop.
Bldg. 1, A026-1	EUL-2-BA	Main	Replace breaker.
Bldg. 1, Outside Closet	RSPA	41	Replace breaker.
Bldg. 1, EC24A	UL-2-4A	25, 27	Replace breaker.
Bldg. 1, D166-1	CLL-3-1D	4	Replace breaker.
Bldg. 1, C080B-1	CC8	16	Replace breaker.
Bldg. 1, D101-11	CUL-D101-BD	11, 20	Replace breaker.
ACA, G163-1	AECL1B	5-9	Replace breaker.
Bed Tower, J102-1	L13B	97	Replace breaker. May require bus replacement.
Bed Tower, J451-1	H42	42	Replace breaker.
MEP Bldg.	US-8	Pnl MEP-EQ3	Corrected by SDV. No further action required.
MEP Bldg.	US-8	Tie	Replace trip unit and actuator.
MEP Bldg.	US-9	Main	Replace charging handle.

16. Unauthorized Panel Modifications

Issue

Panels C2MR (rm. EB60-1) and C2R1 (Biomed Hall) in building 1 have been locally modified as represented by the picture to the right. This supplemental cover is not a manufacturer-approved cover and needs to be replaced.



National Electric Code section 110.2 requires electrical equipment covered by the code to be “approved” by a testing laboratory. There is no evidence to show this equipment is in compliance with the standards outlined in the National Electric Code section below.

NEC Reference

110.2 Approval.

The conductors and equipment required or permitted by this Code shall be acceptable only if approved.

FPN: See 90.7, Examination of Equipment for Safety, and 110.3, Examination, Identification, Installation, and Use of Equipment. See definitions of Approved, Identified, Labeled, and Listed.

All electrical equipment is required to be approved as defined in Article 100 and, as such, to be acceptable to the authority having jurisdiction (also defined in Article 100). Section 110.3 provides guidance for the evaluation of equipment and recognizes listing or labeling as a means of establishing suitability.

Approval of equipment is the responsibility of the electrical inspection authority, and many such approvals are based on tests and listings of testing laboratories. Unique equipment is often approved following a field evaluation by a qualified third-party laboratory or qualified individual.

Recommendation

Panels C2MR (rm. EB60-1) and C2R1 (Biomed Hall) in building 1 need to have a manufacturer-approved covers installed to replace the locally-modified cover presently used to protect the energized, internal components.