

## LAMAR FLEMING TRANSFORMER REPAIR:

### Background:

The Lamar Fleming Jr. building is a 117,115 square foot stone and glass building originally constructed in 1965. The electrical service is provided from the campus 12.47KV distribution system and serves three 12.47-208Y/120V transformers located in the basement electrical vault to a 4000A, 208Y/120V switchboard in the basement mechanical/electrical room. The three transformers are original to the building.

In Aug 2012, while doing our preventive maintenance we noticed oil leaking from 2 transformers. There is also a crack in the ceiling of the vault room above the transformers. The leak maybe caused by the corrosion of the bottom of the transformers. This may be result of water dripping on the transformers. The oil level is low on 2 of the 3 transformers. The oil serves as both cooling medium and part of the insulation system.



## Repair Options

We engaged Cotton and received 3 proposals,

- 1) Add mineral oil to the transformers. Currently the transformers have mineral oil in them.
- 2) Add non-combustible oil to the transformers
- 3) Replace the transformers and seal the crack in the ceiling.

## Impact:

The leak will cause the oil level to go lower the acceptable level if not refilled. Low oil level will cause the transformer to overheat. This may result in complete electrical power loss to the building and potential major repair to the transformers and the building.

## Recommendation:

### Short term:

1) Immediately fill the oil in the transformers to acceptable level. This work can be done on September 16 2012, to coincide with project work of adding electrical breaker. This will minimize the outage and inconvenience to the occupants.

### Long term:

1) Replace the transformers and repair the leak. The FCA has indicated that the electrical distribution of the building has reached the end of its useful life. We recommend that the leaking transformers be replaced and the crack in the ceiling be repaired, in order to prevent future leaks.

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