



Division 260101

Basic Electrical Requirements

DESIGN GUIDE

1 General

1.1 General

- A. All electrical systems that are selected for use on the University campus shall consider long-term ownership, operation and maintenance needs.
- B. Systems and construction methods shall be selected based on a useful service life of 25 to 30 years.

1.2 Codes and Standards

- A. Codes shall be the most recent addition as adopted by the State of Washington.
- B. Facility design and installation shall conform to the following codes and standards.
 - 1. National Electrical Code (NEC)
 - 2. International Building Code (IBC)
 - 3. International Mechanical Code (IMC)
 - 4. International Fire Code (IFC)
 - 5. Americans with Disabilities Act (ADA)
 - 6. Electrical Safety Orders of the State Department of Labor and Industries
 - 7. Regulations of the State Fire Marshal



8. Regulations of the State Board of Fire Underwriters
9. Requirements of Washington State Industrial Safety and Health Administration (WISHA)
10. Washington Administrative Code (WAC)
11. Washington State Energy Code (WSEC)
12. Applicable sections of other State and local codes

1.3 LEED

- A. Major facility projects receiving funding from the state capital budget or through a financing contract as defined in RCW 39.94.020 shall be certified at the level of Silver or higher.
- B. Major facilities includes major new construction and renovation projects over 5,000 GSF where the renovation costs exceed 50% of the building assessed value.

1.4 Electrical Rooms

- A. The campus has very high seasonal groundwater due to irrigation water in the canal that passes through campus.
- B. Basement electrical spaces shall be avoided unless specific permission is granted by the CPPM. The design team shall demonstrate precautions to prevent ground water intrusion into the electrical room.
- C. Locating electrical equipment indoors is preferred.
- D. Electrical closets shall be provided on each floor of the building.
- E. When an on-site generator is present, provide a dedicated electrical closet on the main floor for the generator system ATS and distribution equipment.
- F. Service Yard shall be provided on grade for electrical equipment including but not limited to Transformer, Line Switch, Generator, Fuel Storage.



- G. Transformers shall be located outdoors on grade and near the main service electrical room.
- H. Generators shall be located outdoors on grade and near the ATS equipment closet.

1.5 Maintenance Access

- A. Electrical closets shall be located such that they have direct access without passing through classrooms, conference rooms, offices or similar normally occupied spaces.
- B. Preference for exterior access to main service electrical rooms.
- C. Equipment which needs regular servicing shall be located such that a ladder is not required for access and maintenance. This includes but is not limited to panelboards and lighting control relay panels.

1.6 Backup Power

- A. The campus has limitations on the total amount of emissions from fuel burning appliances. New generator systems shall require specific permission by the CPPM.
- B. The campus has an existing centralized generator for serving NEC 702 loads. This system serves select buildings in the Science Neighborhood and is not available for the entire campus.
- C. Backup power for life safety systems shall be provided by battery systems or on-site generator systems.
- D. Lighting inverters are preferred for emergency lighting when a generator system is not planned. Where lighting inverter systems cannot meet NEC 700.3 for temporary source of power for maintenance, individual battery packs are permitted for each emergency lighting fixture.
- E. Where a generator system is granted permission, provide backup power to division 23 mechanical systems as outlined in the division 23 design and construction standards.



1.7 Utilities – Campus Medium Voltage Distribution

- A. The campus owns and maintains a 12.47kV medium voltage distribution system which provides electrical service to the entire campus.
- B. The campus medium voltage distribution system consists of (3) substations and (18) distribution feeders. Each feeder utilizes pad mounted line switches to provide primary service to campus facilities.
- C. Where existing feeders are intercepted to serve a new facility, new pad mount line switch equipment shall be provided to maintain the topology of the system.
- D. The use of splices or junction enclosures shall be avoided.

1.8 Excavation and Backfill

- A. Where new excavation occurs, the contractor shall restore the existing surface conditions back to the original state. Lawn areas that are disturbed for excavation shall be restored with new grass sod.

2 Materials

2.1 Reserved for future.

3 Execution

3.1 Reserved for future.

4 Appendix

4.1 Reserved for future.