



Clark County Building and Fire Prevention Field Inspection Division FIELD INSPECTION GUIDELINE

Division:	Inspections	Policy & Procedure:	FIG-E-004
Subject:	Generators	Effective Date:	06/01/2006
Code:	2017 NEC Section 250.26 – 250.92	Revised Date:	10/01/2020
Proposed:	Matthew Brewer	Approved:	Sam Palmer

Interpretation:

Generators supplying stationary equipment and/or are connecting to stationary wiring methods shall require an electrical permit. Such generators shall require grounding in accordance with NEC 250.26 and shall comply with the requirements of the following guideline:

NOTE: Portable generators supplying portable equipment shall not require an electrical permit, provided they comply with NEC 250.34(A). Vehicle-mounted generators supplying portable equipment shall not require an electrical permit, provided they comply with NEC 250.34(B). Portable wiring shall be regulated by OSHA and meet all OSHA requirements for construction sites.

The requirements for the electrical installation and use of generators is the same as if power were provided by the Electrical Utility Company, and, as such, must conform to all the requirements for all of the other installations as covered by the National Electrical Code, Uniform Fire Code, and other related documents. The following is a list of generally applicable requirements and the referenced code sections. Specific situations may require reference to additional code sections. This checklist is an effort to provide a guide to the most common requirements to be considered.

Field Application:

- Means shall be provided to disconnect all conductors in a building or other structure from the service entrance conductors. NEC 230.79
- The service disconnecting means shall have a rating not less than the load to be carried, in accordance with Article 220. NEC 230.79
- Each ungrounded service conductor shall have overload protection. NEC 230.90
- AC systems of 50 volts to less than 1000 volts that supply premises wiring shall be grounded so that the maximum voltage to ground on the ungrounded conductors does not exceed 150 volts. NEC 250.20(B)
- For AC premises wiring systems, the conductor to be grounded shall be the neutral conductor. NEC 250.26
- For a grounded system, an un-spliced main bonding jumper shall be used to connect the equipment grounding conductor(s) and the service-disconnect enclosure to the grounded conductor of the system within the enclosure for each service disconnect. NEC 250.28
- If available on the premises at each building or structure served, each item in 250.52(A)(1) through (A)(5) as modified in the Southern Nevada Amendments, shall be bonded together to form the grounding electrode system. Where none of these electrodes are available, one or more of the electrodes specified in 250.52(A)(4) through (A)(7), as amended, shall be installed and used. NEC 250.50

- Grounding electrode conductors smaller than #6 shall be installed in a raceway. A raceway is not required for a #6 that is free from exposure to physical damage, or a #4, if not exposed to severe physical damage. The G.E.C. shall be installed in one continuous length without a splice. NEC 250.64
- The size of the grounding electrode conductor of a grounded AC system shall not be less than that given in Table 250.66, except as permitted in 250.66(A) through (C). NEC 250.66
- The connection of a grounding electrode conductor to a grounding electrode shall be accessible and shall be made in a manner that will ensure a permanent and effective grounding path. NEC 250.68
- Ground clamps shall be listed for the materials of the grounding electrode and the grounding electrode conductor and, where used on pipe, rod, or other buried electrodes, shall also be listed for direct soil burial or concrete encasement. NEC 250.70
- The service-disconnect enclosure and related enclosures shall be effectively bonded together. NEC 250.92
- Feeders and branch circuits shall be protected from over-current in accordance with their ampacities. See NEC 240.4 for conductors, or NEC 240.5 for cords and cables.
- Over-current protection shall be provided at the point of supply or meet the requirements of one of the tap rules. NEC 240.21
- Over-current devices shall be readily accessible, protected from physical damage, and installed in a vertical position. NEC 240.24, 240.30 and 240.33
- Exposed non-current-carrying metal of fixed equipment likely to become energized shall be grounded. NEC 250.110
- The equipment grounding conductor run with or enclosing the circuit conductors shall be an approved type and shall be identified as green, or bare, or green with yellow stripes. NEC 250.118 and 250.119
- Equipment grounding conductors shall be installed within a raceway or cable. NEC 250.120
- Equipment grounding conductors shall be sized as per NEC Table 250.122
- Ground-Fault Circuit-Interrupter Protection for Personnel shall be provided. NEC 210.8
- and NEC 590.6
- Where cord-wiring is approved, it shall be of the hard-usage or extra-hard-usage type listed and identified in NEC 400.4
- Receptacles shall be of the grounding type and rated for the circuit ampacity. NEC 406.2

The requirements for electrical installation and use of generators are the same as if the power was provided by the Electrical Utility Company. As such, generator installation must conform to all of the requirements for all other installations as covered by the National Electric Code, Clark County Fire Code, and other related documents. This procedure applies to temporary generator installations only, including ‘temporary-through-the-main-service’ of a building.

A. Generating systems with fuel storage exceeding the following amounts must have Clark County Department of Building & Fire Prevention – Fire Prevention Division approval prior to permit submittal:

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| 1. Gasoline | 10 gallons |
| 2. Diesel Fuel | 60 gallons |
| 3. LPG | 125 gallons |

- B. Plans submitted for permit and approval must be processed through and approved by the Zoning Division. Plans must contain the following information:
- Three sets of site plans showing the location of the generator, all structures including security fences on the site, distances from the generator to all structures, property lines and location of over-current protection for the generator.
 - Location, type, and amount of fuel for the generator.
- C. No Building Plans Check review is required, with the exception of items 1 and 2 below. Building Plans Check will sign the electrical permit application upon evidence of Zoning department approval, and Fire department approval when applicable.
1. The field inspector reserves the right to request that electrical plans be prepared and submitted to Building Plans Check for review of unique and/or complex installations where code interpretation is required or when the contractor cannot provide adequate information necessary for a safe installation.
 2. Plans prepared and stamped by an electrical engineer licensed in the state of Nevada must be provided to Building Plans Check for review and approval of installations where the source power exceeds 800 amperes and/or 600 volts, or if the generator of any size is within a classified location as defined in Article 500 of the National Electric Code.
- D. General requirements for generator system installation:
- “No Smoking” signs must be posted in conspicuous locations in the vicinity of the generator and stored fuel.
 - One or more approved fire extinguishers with minimum 40 B:C ratings are to be located in the immediate vicinity of the generator equipment and stored fuel.
 - Distance(s) specified on the approved Zoning plans must be maintained from any building, property lines, or public way.
 - An approved security fence, minimum 6 feet in height, must be provided to secure fuel storage.
 - Generators shall be located and secured per approved plans. Security shall be provided by means of a 6-foot high fence, or by being housed in an approved generator enclosure.