Chapter E 445

GENERATORS

E 445.01 Location. Generators shall be located in dry places, and also so as to meet the requirements for motors in Wis. Adm. Code section E 430.014. Generators installed in hazardous locations as described in chapters E 500–E 503, or in other locations as described in chapters E 510–E 517, E 520, E 530, and E 665, shall also comply with the provisions of those chapters.

Note: It is recommended that waterproof covers be provided for use in emergency.

History: Cr. Register, January, 1968, No. 145, eff. 2–1–68.

E 445.02 Marking. Each generator shall be provided with a nameplate giving the maker's name, the rating in kilowatts or kilovolt-amperes, the normal volts and amperes corresponding to the rating, and the revolutions per minute.

History: Cr. Register, January, 1968, No. 145, eff. 2–1–68.

E 445.03 Drip pans. Generators shall be provided with suitable drip pans if required by the administrative authority.

History: Cr. Register, January, 1968, No. 145, eff. 2–1–68.

E 445.04 Overcurrent protection. (1) CONSTANT-POTENTIAL GENERATORS. Constant-potential generators, except alternating-current generators and their exciters, shall be protected from excessive current by circuit-breakers or fuses.

(2) TWO-WIRE GENERATORS. Two-wire, direct-current generators may have overcurrent protection in one conductor only if the overcurrent device is actuated by the entire current generated, except that in the shunt field. The overcurrent device shall not open the shunt field.

(3) 65 VOLTS OR LESS. Generators operating at 65 volts or less and driven by individual motors shall be considered as protected by the overcurrent device protecting the motor if these devices will operate when the generators are delivering not more than 150% of their full-load rated current.

(4) BALANCER SETS. Two-wire, direct-current generators used in conjunction with balancer sets to obtain neutrals for 3-wire systems shall be equipped with overcurrent devices which will disconnect the 3-wire system in the case of excessive unbalancing of voltages or currents.

(5) 3-WIRE, DIRECT-CURRENT GENERATORS. Three-wire, direct-current generators, whether compound or shunt wound, shall be equipped with

overcurrent devices, one in each armature lead, and so connected as to be actuated by the entire current from the armature. Such overcurrent devices shall consist either of a double-pole, double-coil circuit-breaker, or of a 4-pole circuit-breaker connected in the main and equalizer leads and tripped by 2 overcurrent devices, one in each armature lead. Such protective devices shall be so interlocked that no one pole can be opened without simultaneously disconnecting both leads of the armature from the system.

History: Cr. Register, January, 1968, No. 145, eff. 2–1–68.

E 445.05 Size of conductors. The conductors from the generator terminals to supplied equipment shall have an ampacity not less than 115% of the nameplate current rating of the generator. Neutral conductors shall be the same size as the conductors of the outside legs.

History: Cr. Register, January, 1968, No. 145, eff. 2–1–68.

E 445.06 Protection of live parts. Live parts of generators of more than 150 volts to ground shall not be exposed to accidental contact where accessible to unqualified persons.

History: Cr. Register, January, 1968, No. 145, eff. 2–1–68.

E 445.07 Guards for attendants. Where necessary for the safety of attendants the provisions of section E 430.133 shall be complied with.

History: Cr. Register, January, 1968, No. 145, eff. 2–1–68.

E 445.08 Grounding. If a generator operates at a terminal voltage in excess of 150 volts to ground, the frame shall be grounded in the manner specified in chapter E 250. If the frame is not grounded, it shall be permanently and effectively insulated from the ground.

History: Cr. Register, January, 1968, No. 145, eff. 2–1–68.

E 445.09 Bushings. Where wires pass through an opening in an enclosure, conduit box, or barrier, a bushing shall be used to protect the conductors from the edges of the opening having sharp edges. The bushing shall have smooth, well rounded surfaces where it may be in contact with the conductors. If used where there may be a presence of oils, grease, or other contaminants, the bushing shall be made of a material not deleteriously affected.

History: Cr. Register, January, 1968, No. 145, eff. 2–1–68.