§ 111.05–23 Location of ground indicators.

Ground indicators must:
(a) Be at the vessel’s ship’s service generator distribution switchboard for the normal power, normal lighting, and emergency lighting systems;
(b) Be at the propulsion switchboard for propulsion systems; and
(c) Be readily accessible.
(d) Be provided (at the distribution switchboard or at another location, such as a centralized monitoring position for the circuit affected) for each feeder circuit that is isolated from the main source by a transformer or other device.

NOTE TO PARAGRAPH (d): An alarm contact or indicating device returned to the main switchboard via a control cable, that allows the detecting equipment to remain near the transformer or other isolating device for local troubleshooting, is allowed.


§ 111.05–25 Ungrounded systems.

Each ungrounded system must be provided with a suitably sensitive ground detection system located at the respective switchboard which provides continuous indication of circuit status to ground with a provision to momentarily remove the indicating device from the reference ground.


§ 111.05–27 Grounded neutral alternating current systems.

Grounded neutral and high-impedance grounded neutral alternating current systems must have a suitably sensitive ground detection system which indicates current in the ground connection, has a range of at least 150 percent of neutral current rating and indicates the polarity of the fault.


GROUNDED CONDUCTORS

§ 111.05–31 Grounding conductors for systems.

(a) A conductor for grounding a direct-current system must be the larger of:
(1) The largest conductor supplying the system; or
(2) No. 8 AWG (8.4mm²).

(b) A conductor for grounding the neutral of an alternating-current system must meet Table 111.05–31(b).

<table>
<thead>
<tr>
<th align="left">Size of the largest generator cable or equivalent system grounding conductor—AWG-MCM (mm²)</th>
<th>Size of the neutral grounding conductor—AWG (mm²)</th>
</tr>
</thead>
<tbody>
<tr>
<td align="left">Greater than</td>
<td>Less than or equal to</td>
</tr>
<tr>
<td align="left">2 (33.6)</td>
<td>8 (8.4)</td>
</tr>
<tr>
<td align="left">0 (53.5)</td>
<td>6 (13.3)</td>
</tr>
<tr>
<td align="left">3/0 (85.0)</td>
<td>2 (33.6)</td>
</tr>
<tr>
<td align="left">350 MCM (177)</td>
<td>2/0 (67.5)</td>
</tr>
<tr>
<td align="left">600 MCM (304)</td>
<td>3/0 (85.0)</td>
</tr>
<tr>
<td align="left">1100 MCM (557)</td>
<td>3/0 (85.0)</td>
</tr>
</tbody>
</table>


§ 111.05–33 Equipment safety grounding (bonding) conductors.

(a) Each equipment-grounding conductor must be sized in accordance with Section 250.122 of NFPA NEC 2002 (incorporated by reference; see 46 CFR 110.10–1).

(b) Each equipment-grounding conductor (other than a system-grounding conductor) of a cable must be permanently identified as a grounding conductor in accordance with the requirements of Section 250.119 of NFPA NEC 2002.


§ 111.05–37 Overcurrent devices.

(a) A permanently grounded conductor must not have an overcurrent device unless the overcurrent device simultaneously opens each ungrounded conductor of the circuit.