



# Coffee Break Training - Fire Protection Series

## Fire Alarms & Detection: Fire Alarm System Battery Inspection and Tests: Part I

No. FP-2012-23 June 5, 2012

**Learning Objective:** The student shall be able to identify the inspections and tests needed to verify the performance of batteries used as fire alarm system secondary power supplies.

Fire alarm systems must undergo regular inspections, testing, and maintenance to enhance their reliability and correct problems. (See Coffee Break Training 2012-17 for a distinction among these services.)

An essential component of the fire alarm system is its secondary power supply. When secondary power is provided by batteries, the following general inspections and tests should be conducted at the frequency recommended in National Fire Protection Association (NFPA) 72, *National Fire Alarm and Signaling Code*<sup>®</sup> to enhance reliability.



Regular visual inspections of fire protection systems should identify and correct problems like this corrosion on the battery terminal.

<b>Visual inspection</b>	<ul style="list-style-type: none"><li>• For lead-acid and dry cell batteries, inspect monthly. Check for electrolyte level in lead-acid batteries.</li><li>• For nickel-cadmium and sealed lead-acid, inspect semiannually.</li><li>• Inspect for corrosion or leakage. Clean and coat terminals if needed.</li><li>• Check and assure tightness of all connections.</li></ul>
<b>Replacement</b>	<ul style="list-style-type: none"><li>• Replace batteries in accordance with alarm equipment recommendations or when voltage or current falls below manufacturer's recommendations.</li></ul>
<b>Charger test</b>	<ul style="list-style-type: none"><li>• Operation of battery charger in accordance with specific battery type.</li></ul>
<b>Discharge test</b>	<ul style="list-style-type: none"><li>• With charger disconnected, load test batteries in accordance with manufacturer's recommendations.</li><li>• NFPA 72 allows an artificial load equal to the full fire alarm load when conducting this test.</li></ul>
<b>Load voltage test</b>	<ul style="list-style-type: none"><li>• With the battery charger disconnected, measure the terminal voltage under maximum load conditions. Voltage should not fall below the levels specified.</li><li>• NFPA 72 allows an artificial load equal to the full fire alarm load when conducting this test.</li></ul>

Next week's Coffee Break Training will summarize specific battery tests based on the battery types.



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