



UO Guideline G14293

ISSUING DEPARTMENT: **GSM&TS**
UO SPONSOR: **Director – GSM&TS**

EFFECTIVE DATE: **6-05**
REVIEW DATE: **6-10**
PAGE NO.: **1** OF **3**

TITLE: CGT Station Battery Maintenance and Testing

- Purpose** This UO guideline describes the routine maintenance and testing procedures and required documentation for California Gas Transmission’s (CGT’s) 10-year and 20-year design-life station batteries. Some types of batteries typically found in small uninterruptible power supply (UPS) systems are not designed to be tested or maintained and, as such, are not addressed herein.
- Revision** This revised UO guideline supersedes UO Guideline G14293, “CGT Station Battery Maintenance and Testing,” dated 10-2000.
- Safety** Care should always be taken when handling batteries. Batteries possess potential electrical, chemical, and explosive hazards. For safety equipment and precautions, refer to [Attachment 1, “CGT Station Battery Maintenance and Testing Procedures.”](#)
- Implementation Responsibilities** The director of Gas System Maintenance and Technical Support (GSM&TS) is responsible for approving, revising, distributing, and implementing this standard within the organization.

District superintendents are responsible for ensuring the proper performance of routine maintenance and testing that must be conducted on CGT station batteries at CGT facilities.
- Compliance** Implementation and effectiveness are measured by the responsible managers and superintendents. In addition, periodic audits may be conducted by internal Company departments.
- General** [Attachment 1, “CGT Station Battery Maintenance and Testing Procedures”](#) contains the procedural details for maintaining and testing CGT station batteries. The manager of GSM&TS Station Engineering is authorized to modify these detailed procedures, forms, or instructions as needed, or to approve variances from this procedure on an exception basis.

Definition of Terms

Acceptance Test: A constant current or power capacity test made on a new battery to verify that it meets specifications or manufacturer's ratings.

Capacity Test: A discharge of a battery at a constant current or power to a specified terminal voltage (a typical value is 1.75 volts per cell [VPC] for most gas transmission station batteries).

Equalizing Voltage: The voltage, higher than float, applied to a battery to correct inequalities among individual cell voltage or specific gravity readings that may develop in service (a typical value is 2.35 VPC for flooded cell batteries).

Float Voltage: The voltage applied to a battery to maintain its full charge during normal operation (a typical value is 2.25 VPC).

Flooded Cell Battery: Also known as "wet" cell, or "vented" cell batteries. The products of electrolysis and evaporation escape to the atmosphere through vented caps in the jar as they are generated.

Jar: The container holding the battery plates and electrolyte (sulfuric acid).

Module: Multiple cells or units in a single assembly (this terminology is specific to VRLA batteries, which are packaged in modular assemblies).

Pilot Cell: A selected cell that is considered representative of the entire battery.

String: A series grouping of individual jars/cells/modules to achieve the nominal voltage rating of the battery bank. Depending on the battery type selected, some banks will be designed with two or more strings in parallel.

Unit: Multiple cells in a single jar.

Valve-Regulated Lead Acid (VRLA) Battery: A sealed battery with a valve that opens to the atmosphere when internal gas pressure in the jar exceeds atmospheric pressure by a designed amount (set at the factory). VRLA batteries provide a means for recombination of internally generated oxygen and the suppression of hydrogen gas evolution to limit water consumption.

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Signed,

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Director
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Further
Information**

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**Reference
Documents**

[Code of Safe Practices](#)

Institute of Electrical and Electronics Engineers (IEEE) Standards

446-1995, "Emergency and Standby Power"

450-1995, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Vented Lead-Acid Batteries for Stationary Applications"

1188-1996, "IEEE Recommended Practice for Maintenance, Testing, and Replacement of Valve-Regulated Lead-Acid Storage Batteries for Stationary Applications"

Attachments

[Attachment 1, "CGT Station Battery Maintenance and Testing Procedures"](#)

[Attachment 2, "CGT Battery Capacity Testing Procedure"](#)

[Attachment 3, Form F14293-3, "Battery Maintenance Log Sheet"](#)

[Attachment 4, "List of Station Batteries and Testing Intervals"](#)

[Attachment 5, "Battery Discharge Test Parameters"](#)

[Attachment 6, "Sample Battery Database Input Form"](#)