ATIS-0600035.2018 (R2023)

Recommended Maintenance Routines and Frequencies for Central Office Backup Power

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American National Standard for Telecommunications

Recommended Maintenance Routines and Frequencies for Central Office Backup Power

Alliance for Telecommunications Industry Solutions

Approved July 27, 2018

American National Standards Institute, Inc.

Abstract

This document is a guideline, recommending a baseline set of routines along with maintenance intervals (frequency) for central office back up power.

Foreword

The information contained in this Foreword is not part of this American National Standard (ANS) and has not been processed in accordance with ANSI's requirements for an ANS. As such, this Foreword may contain material that has not been subjected to public review or a consensus process. In addition, it does not contain requirements necessary for conformance to the Standard.

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ANSI guidelines specify two categories of requirements: mandatory and recommendation. The mandatory requirements are designated by the word *shall* and recommendations by the word *should*. Where both a mandatory requirement and a recommendation are specified for the same criterion, the recommendation represents a goal currently identifiable as having distinct compatibility or performance advantages.

Suggestions for improvement of this document are welcome. They should be sent to the Alliance for Telecommunications Industry Solutions, STEP, 1200 G Street NW, Suite 500, Washington, DC 20005.

At the time of consensus on this document, STEP, which was responsible for its development, had the following leadership:

E. Gallo, STEP Chair and STEP NPS Vice Chair [Ericsson]
J. Fuller, STEP Vice Chair [AT&T]
J. Jackson, STEP NPS Chair [AT&T]
T. Berguetski, Technical Editor [CenturyLink]

The Network Power Systems (NPS) Subcommittee was responsible for the development of this document.

Table of Contents

Table of Tables

American National Standard for Telecommunications on –

Recommended Maintenance Routines and Frequencies for Central Office Backup Power

1 Scope, Purpose, & Application

1.1 Scope

This guidance document recommends a baseline set of routines along with maintenance intervals (frequency) for central office back up power.

1.2 Purpose

While the Communications Security, Reliability and Interoperability Council (CSRIC) Best Practices include some recommendations for engine-alternator maintenance in telecommunications central offices and Telcordia GR-513-CORE contains suggested frequencies (as well as some specific routines) for battery, rectifier, and engine routines; there are no comprehensive guidelines for telecommunications power equipment maintenance routines and frequencies. Further complicating the issue is that there are other existing standards primarily designed for other industries that suggest maintenance activities that are far too frequent for telecommunications needs. For example, NFPA 110 is primarily designed for emergency engine-alternators used in life support applications (like hospitals) where there are no alternatives or secondary means to provide the required service. Communications networks and services are usually designed with duplicate pathways and alternative means (e.g., batteries plus standby engines) to circumvent single point failures. The weekly test routine requirements stated in NFPA 110 for such life-support engines far exceed FCC-recognized (CSRIC) Best Practices. Engine alternators deployed in central office applications are considered NFPA 110 Level 2. In a similar vein, manufacturers make similar products (such as engine-alternators and batteries) for differing industries, and what might be a good maintenance frequency or routine for one application (such as battery maintenance for critical backup systems at a nuclear generating station) might be excessive for another application (e.g., a telecommunications central office) into which the same battery is sold. The manufacturer's guidelines for maintenance are generally forced to err on the side of the most frequent maintenance applications and routines, resulting in an unnecessary waste of resources. For this reason, these guidelines provide some useful maintenance frequencies and baseline routines specific to telecommunications Central Office backup power systems.

1.3 Application

These recommendations are applicable to central offices (they are not applicable to remote terminals, data centers, customer premises locations, etc.), and are the minimum suggested intervals, with the understanding that individual operating companies, State and/or local authorities may require more frequent intervals than those cited in this document.

Appropriate safety precautions shall be observed during the maintenance routines described in this standard for work activities near, on, and in the vicinity of powered equipment and charged batteries. Activities shall only be conducted by qualified, trained, and experienced individuals using appropriate PPE (personal protection Equipment) for the task.