

911 Outage Reporting Overview

State of Colorado & FCC Rules

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1 May, 2014

911 Outage Reporting

- PUC Rules 723-2-2130 through 2159

9-1-1 Failure or Outage Definition

- “9-1-1 failure” or “9-1-1 outage” means:
 - 9-1-1 calls cannot be transported from the end users to the PSAP,
 - inability to deliver location information to the PSAP from the 9-1-1 Automatic Location Identification (ALI) database, or;
 - loss of 9-1-1 ALI functionality.

BESP Obligations

- BESP shall:
 - Work in cooperation with governing bodies and service providers to develop a 9-1-1 contingency plan and file plan with PUC by April 30th of each year.
 - Designate a telephone number for PSAPs and service providers to report trouble that is staffed 24x7 to initiate immediate corrective action.
 - Work cooperatively with the PSAPs to track a 9-1-1 failure or outage (i.e., trouble ticket).
 - Notify the designee of Authority the nature, extent, and actions being taken to correct the 9-1-1 failure or outage.
 - If failure or outage exceeds 15 minutes:
 - Notify the affected PSAP and service providers,
 - Verbally inform the Commission within 2 hours, and;
 - Implement the contingency plan.
 - File a written report of outage with the Commission within 30 days.

Basic LEC Obligations

- Designate a telephone number to report trouble that is Staffed 24x7 to initiate immediate corrective action.
- Work cooperatively with the PSAPs to track a 9-1-1 failure or outage, (i.e., trouble ticket).
- Work in cooperation with service providers, BESP and PSAPs in developing a 9-1-1 contingency plan and notify the PSAPs, Commission, and BESP of any changes to the agreed upon plan.
- Notify BESP of 9-1-1 failure or outage.
- If failure or outage exceeds 15 minutes:
 - Verbally inform the Commission within 2 hours; and
 - File a written report of outage with the Commission within 30 days.

Wireless Carriers and other Telecommunications Providers

- Work cooperatively with the PSAPs to track a 9-1-1 failure or outage, (i.e., trouble ticket).
- Work in cooperation with basic LEC, BESP and PSAPs in developing a 9-1-1 contingency plan.
- Notify the BESP responsible for delivering 9-1-1 calls to the PSAP of a 9-1-1 failure.

PSAP Obligations

- Work cooperatively with service providers to track 9-1-1 failure or outage.
- Notify the BESP of 9-1-1 failure or outage.
- Work cooperatively with BESP and service providers to develop contingency plan.
- Notify Commission and BESP of any updates or changes to contingency plan.

FCC Rules: Disruptions to Communications

47 C.F.R. Part 4

<http://www.ecfr.gov/cgi-bin/text-idx?SID=b9cbc77d00d946e7997678e368598d58&node=47:1.0.1.1.5&rgn=div5>

Scope Basis & Purpose

- Set forth requirements pertinent to the reporting of disruptions to communications, and to the reliability and security of communications infrastructures.
 - Reports presumed to be confidential & public access only sought pursuant to procedures set forth in 47 CFR 0.451(d)(3)
 - Communications providers required to report include radio, wire, cable, satellite and/or light guide, paging and SS7, & IXC but excludes equipment manufacturers
 - Defines an *Outage* generally as a significant degradation in the ability of an end user to establish and maintain a channel of communications as a result of failure or degradation in the performance of a communications provider's network
 - Separately defines:
 - Special office & facilities (E.g. major military installations)
 - 911 Special Facilities

911 Special Facility Outage

- An outage that potentially affects a 911 special facility occurs whenever:
 - There is a loss of communications to PSAP(s) potentially affecting at least 900,000 user-minutes and: The failure is neither at the PSAP(s) nor on the premises of the PSAP(s); no reroute for all end users was available; and the outage lasts 30 minutes or more; or
 - There is a loss of 911 call processing capabilities in one or more E-911 tandems/selective routers for at least 30 minutes duration; or
 - One or more end-office or MSC switches or host/remote clusters is isolated from 911 service for at least 30 minutes and potentially affects at least 900,000 user-minutes; or
 - There is a loss of ANI/ALI (associated name and location information) and/or a failure of location determination equipment, including Phase II equipment, for at least 30 minutes and potentially affecting at least 900,000 user-minutes (provided that the ANI/ALI or location determination equipment was then currently deployed and in use, and the failure is neither at the PSAP(s) or on the premises of the PSAP(s)).

Outage Notification Requirement

- **Notification required by telecom provider**
 - Wireline, wireless, satellite, & SS7 – within 120 minutes of discovery of outage
 - Interconnected VoIP – within 240 minutes of discovery of outage
- Potentially affecting a 911 special facility in which case they also shall notify, as soon as possible by telephone or other electronic means, any official who has been designated by the management of the affected 911 facility as the provider's contact person for communications outages at that facility, and they shall convey to that person all available information that may be useful to the management of the affected facility in mitigating the effects of the outage on callers to that facility.
- Not later than 72 hours after discovering the outage, the operator and/or provider shall submit electronically an Initial Communications Outage Report to the Commission. Not later than thirty days after discovering the outage, the operator and/or provider shall submit electronically a Final Communications Outage Report to the Commission.
- The Notification and the Initial and Final reports shall comply with all of the requirements of §4.11.

Outage – Final Report

- Shall be submitted by a person authorized by the provider to legally bind the provider to the truth, completeness & accuracy of the information contained in the report
 - The Notification shall provide:
 - The name of the reporting entity,
 - The date and time of onset of the outage,
 - A brief description of the problem; service effects,
 - The geographic area affected by the outage; and
 - A contact name and contact telephone number by which the Commission's technical staff may contact the reporting entity.
 - The Initial report shall contain all pertinent information then available on the outage and shall be submitted in good faith. The Final report shall contain all pertinent information on the outage, including any information that was not contained in, or that has changed from that provided in, the Initial report.

Network Outage Reporting System (NORS)

- Web-based filing system through which communications providers covered by the Part 4 reporting rules submit reports to the FCC.
- Uses an electronic template to promote ease of reporting and encryption technology to ensure the security of the information filed.
- The Communications Systems Analysis Division of the FCC's Public Safety and Homeland Security Bureau administers NORS, monitors the outage reports submitted through NORS and performs analyses and studies of the communications disruptions reported.
- NORS Homepage
<http://transition.fcc.gov/pshs/services/cip/nors/nors.html>
- NORS User Manual
http://transition.fcc.gov/pshs/outage/nors_manual.pdf

Improving 9-1-1 Reliability:

Reliability & Continuity of Communications Networks, Including Broadband Technologies 47 CFR Parts 0, 4, & 12

- On 1-17-2014 the FCC adopted rules effective 2-18-2014 to improve the 911 reliability by requiring that 911 service providers take “reasonable measures” to provide reliable 911 service with respect to three elements: circuit auditing, central-office backup power and diverse network monitoring.
 - Providers subject to the rule can comply with the reasonable measures requirement by either implementing certain industry-backed “best practices” (CSRIC & NRSC) that the Commission adopted.
 - Or by implementing alternative measures that are reasonably sufficient to ensure reliable 911 service.
 - As long as they briefly describe such measures and provide supporting documentation to the Commission.
 - Providers must demonstrate their compliance by filing an annual certification & the first full certification due in two years with a certification of “substantial progress” after 1 year.
- The FCC also amended its outage reporting rules and now requires 911 service providers to contact PSAPs with timely and actionable notification of 911 outages.

Improving 9-1-1 Reliability:

Reliability & Continuity of Communications Networks, Including Broadband Technologies 47 CFR Parts 0, 4, & 12

- Rules apply to every “Covered 911 Service Provider;” defined as any entity that provides 911, E911, or NG911 capabilities such as call routing, ALI, ANI, or the functional equivalent of those capabilities, directly to a PSAP, statewide default answering point, or appropriate local emergency authority or that operates one or more central offices that directly serve a PSAP.
 - A central office “directly serves a PSAP” if it (1) hosts a selective router or ALI/ANI database (2) provides functionally equivalent NG911 capabilities, or (3) is the last service- provider facility through which a 911 trunk or administrative line passes before connecting to a PSAP.
 - This definition encompasses entities that provide capabilities to route 911 calls and associated data such as ALI and ANI to the appropriate PSAP, but not entities that merely provide the capability for customers to originate 911 calls.
- Certifying Official required to ensure accuracy and accountability and must have supervisory and budgetary authority over a Covered 911 Service Provider’s entire 911 network, not merely certain regions or service areas.
- Covered 911 Service Providers must certify annually whether they have, within the past year, audited the physical diversity of critical 911 circuits or equivalent data paths to each PSAP they serve, tagged those circuits to minimize the risk that they will be reconfigured at some future date, and eliminated all single points of failure between the selective router, ALI/ANI database, or equivalent NG911 component, and the central office serving each PSAP.
- In lieu of eliminating single points of failure, providers also may certify that they have taken specific, alternative measures reasonably sufficient to mitigate the risk of insufficient physical diversity. The Commission will also require Covered 911 Service Providers to explain why measures short of physical diversity are reasonably sufficient to ensure reliable 911 service in individual cases.

Improving 9-1-1 Reliability:

Reliability & Continuity of Communications Networks, Including Broadband Technologies 47 CFR Parts 0, 4, & 12

- Covered 911 Service Providers must certify annually whether they have sufficient, reliable backup power in any central office that directly serves a PSAP to maintain full service functionality, including network monitoring capabilities, for at least 24 hours at full office load. In addition especially critical central offices that host selective routers must be equipped with at least 72 hours of backup power at full office load.
- Covered 911 Service Providers must certify annually whether they have, within the past year: (1) Audited the physical diversity of the aggregation points that they use to gather network monitoring data in each 911 service area and the network monitoring links between such aggregation points and their NOC(s); and (2) implemented physically diverse aggregation points for network monitoring data in each 911 service area and physically diverse links from such aggregation points to at least one NOC or, in light of the required audits, taken specific alternative measures reasonably sufficient to mitigate the risk of insufficient physical diversity.
- Covered 911 Service Providers must notify PSAPs of outages potentially affecting 911 service to that PSAP within **30 minutes** of discovering the outage and provide contact information such as a name, telephone number, and email for follow-up. Whenever additional material information becomes available, but no later than two hours after the initial contact, the Covered 911 Service Provider must communicate additional detail to the PSAP, including the nature of the outage, its best-known cause, the geographic scope of the outage, and the estimated time for repairs.
- **The Commission would expect, without requiring it, that a Covered 911 Service Provider will, at the request of the PSAP (or state 911 authority, as relevant), enter into discussions concerning the content of the provider's 911 circuit auditing certification with respect to the PSAP.**