

Root Automation

Public Comment

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The Core Problem: The Illusion of "Paper Uptime"

Current regulatory models often treat network uptime (such as "Five Nines" or 99.999% reliability) as a localized radio-frequency (RF) or fiber routing math problem. However, real-world network collapses—especially during Public Safety Power Shutoffs (PSPS) or extreme weather—expose a systemic failure: **Operators frequently treat primary power as an externalized, unmanaged variable.**

By allowing a legal bifurcation between spectrum coordination, hardware manufacturing, and the local electrical grid, operators successfully dodge accountability. They can claim a link is engineered for 99.999% reliability, yet plug it into a non-redundant commercial circuit backed by inadequate batteries. When the grid fails, they deflect the culpability to the power utility as a *force majeure*.

Regulatory Pivot: The "Power-First" Doctrine

To advance true wireless and broadband innovation and secure public funding, state regulators should adopt a simple standard: **A communications provider must prove they are a resilient power company first, before they are certified as a communications company.** If an operator chooses an equipment or transport medium (whether Part 101 wireless, licensed PTMP, or fiber), they must legally and financially own the physical electrons required to keep it alive.

Actionable Policy Recommendations for State Programs

1. Redesign Grant Scoring Matrices (BEAD & State Infrastructure Funds)

Do not just fund "speed on paper" or theoretical coverage. Restructure the application scoring to favor **Full-Stack Risk Mitigation**:

- **The Serial Reliability Test:** Force applicants to submit a unified system availability formula ($A_{\text{system}} = A_{\text{medium}} \times A_{\text{hardware}} \times A_{\text{power}}$). If an applicant's power tier cannot independently hit the target uptime during a 72-hour grid failure, their technical capability score should be automatically downgraded.
- **Infrastructure Matching Requirements:** Incentivize or mandate that a portion of public grant funding be explicitly tied to off-grid industrial power resilience (e.g., direct-DC plant architectures, hardened microgrids, or localized long-lifespan battery backup).

2. Establish "Primary Status" Incentives for Hardened Facilities

Bridge the gap between local zoning, utility pole attachments, and spectrum usage:

- Operators who voluntarily build fully hardened, NEBS-compliant, micro-grid-powered facilities should be granted "Priority Fast-Track Status" for state right-of-way permitting and pole attachments.
- If an operator refuses to control their power stack and relies on standard consumer-grade utility hookups, they should be de-prioritized for public infrastructure funding.

3. Enforce Real-World Uptime Reporting (Auditing the Math)

End the regulatory practice of only auditing paperwork.

- If an operator receives state funding or holds certificates based on a modeled 99.999% uptime target, require them to report any accumulated localized link downtime that exceeds 5 minutes per year—regardless of whether the root cause was a software glitch, a hardware failure, or a commercial power outage.
- Eliminate the "utility failure" loophole in state-level compliance. If the site loses power and goes dark, the operator failed the engineering requirement.

Conclusion

The state cannot force private carriers to change their corporate philosophy by asking nicely, but it can completely shift their behavior by changing **how it rewards capital**. By mandating that power infrastructure is co-equal to spectral or physical transport layer engineering, California can drive a new wave of industrial telecommunications innovation—ensuring that public dollars fund networks built to survive, not just networks built to pass a paper audit.