An interview with commissioner Randy Pinocci (Montana Public Service Commission), by Epsilon and Ampjack Industries.



Epsilon/Ampjack: Commissioner Pinocci, thank you for joining. Your keynote at the Transmission Infrastructure West conference in San Francisco last month was both inspiring and thought-provoking. For those who weren’t in the room, can you provide an overview of the main points you addressed? Specifically, more about your call to replace steel-core conductors, the benefits of composite core technology, potential insurance implications, and the broader vision you shared.

Commissioner Randy Pinocci: It’s a pleasure to talk with you about these critical issues. My keynote was designed to challenge the industry to move beyond incremental changes and embrace bold yet proven solutions.

At the heart of my message was the idea that we must prioritize a Safe, Reliable, and Affordable grid, which I believe is non-negotiable for modern energy infrastructure. This starts with replacing outdated legacy steel-core conductors, a technology that has served its purpose for decades but now represents a major vulnerability, with composite core technology, which is superior in every critical metric. Steel-core systems might have been revolutionary over 100 years ago, but continuing to rely on them like we do today locks the grid into inefficiency, increased risk, and higher operational costs for decades to come.

I also emphasized the need for insurance incentives to drive proactive upgrades on a larger scale. It's not just about the grid's safety and efficiency; it's about practical risk mitigation. The costs associated with replacing steel-core conductors after catastrophic failures, whether due to wildfires, storms, or sag-related incidents, are far greater than the costs of upgrading to composite core conductors today. Utilities and insurers alike need to see these upgrades not as expenses but as investments in the long-term reliability and safety of the grid and the communities it supports.

Why composite core conductors are the superior choice

Epsilon/Ampjack: Composite core conductors have been a focus for Epsilon Composite for decades. From your perspective, what makes them such a transformative technology for the grid?

Commissioner Randy Pinocci: Composite core conductors are truly game-changing, and I'm proud to see companies like Epsilon Composite leading the charge. As I said, they outperform traditional steel-core conductors in every critical metric, offering a scalable solution that aligns with our vision for a Safe, Reliable, and Affordable grid.

Here's why composite core conductors are superior:

- **Superior Sag Characteristics Under Load**
  Composite cores offer a true High-Capacity Low Sag or HCLS solution by maintaining safe clearance even under heavy loads and at elevated temperatures. This dramatically reduces the risk of vegetation contact, which is a leading cause of grid associated wildfires. By ensuring conductors stay well above critical clearances and run cooler or more efficiently, utilities can enhance safety and prevent costly fire-related incidents. Unlike legacy steel-core conductors, composite cores are engineered to withstand extreme heat without any plastic deformation or loss in strength. During extreme wildfire events and even EF5 Tornado's, composite core conductors have proven survivability time and again in real world applications, minimizing service interruptions and post-event repairs.
- **Higher Current-Carrying Capacity**
  Composite core conductors can handle up to twice the current of traditional ACSR conductors. This increased capacity allows utilities to meet growing energy demands without having to build additional infrastructure, providing a cost-effective way to expand grid capabilities.
- **Energy Efficiency**
  Beyond reliability and resilience, composite core conductors are helping utilities meet carbon efficiency goals. By delivering up to a 40% reduction in line losses, these advanced

materials significantly reduce energy waste and associated carbon emissions. This efficiency not only lowers operational costs for utilities but also enables them to recover their investments often times within a matter of years. The result is a grid that is more sustainable and affordable for consumers, what we need.

Why composite core conductors aren't everywhere. Yet.

Epsilon/Ampjack: Since composite core conductors seem to have so many advantages, the cautious reader might wonder—why aren't they used everywhere?

Commissioner Randy Pinocci: That's a great question, and one we need to address head-on. The reality is that innovation in the utility sector often faces barriers rooted in conservatism and a general reluctance to adopt new technologies. Many utilities are understandably cautious, prioritizing proven methods and systems over what might feel like uncharted territory.

There's also a lack of incentives in some cases, both from regulatory bodies and within the utilities themselves, to move away from legacy systems like steel-core conductors. Add to that a lack of technological awareness, not everyone fully understands the transformative potential of composite core conductors yet.

Another factor unique to the United States is the sheer complexity of undertaking large transmission projects. With thousands of utilities operating across different regulatory jurisdictions, achieving alignment on infrastructure upgrades can be challenging. It's not that the technology isn't ready, it's that the system sometimes slows adoption.

That said, things are changing. Over the past 20 years, we have seen more and more advanced conductors being installed across the world, from highly developed regions to fast-growing nations like Bangladesh, which alone has installed more advanced conductors than all of the United States. These technologies are rapidly becoming the standard for modern grids.

The tide is turning, and the momentum is clear. As awareness grows and utilities see the tangible benefits, we expect composite core conductors to become a mainstay of grid modernization efforts globally and within the United States.

Wildfire risks and proven solutions

Epsilon/Ampjack: Wildfires are clearly a major concern for utilities across the Western US and beyond. How do composite core conductors specifically address the risks associated with wildfires?

Commissioner Randy Pinocci: Wildfires are one of the most pressing threats to grid

reliability, especially in fire-prone regions. This is a topic we frequently discuss at **NARUC**, as it deeply impacts both utilities and the communities they serve. The integration of **composite core conductors** is a proven strategy for reducing wildfire risks, and I believe this technology could cut wildfire incidents substantially when deployed at scale.

Composite cores combine **lightweight design**,**superior strength**,and **thermal stability**, making them ideal for grid associated fire mitigation. They are typically **twice as strong** and ~**70% lighter** than steel-core, reducing stress on structures and maintaining critical clearances as mentioned. Their ability to remain stable under extreme heat minimizes ignition risks during high demand and fire conditions.

Key benefits of composite core conductors in wildfire mitigation

- **Reduced Fire Ignition Risks**
  Composite cores are engineered to maintain superior ground clearance and resist sag under high loads and temperatures. This significantly lowers the risk of vegetation contact, a leading cause of wildfire ignition near electrical networks. By ensuring that conductors remain cooler and well above flammable materials, composite cores directly address one of the most preventable wildfire risks we know of.
- **Heat Resilience**
  Unlike traditional steel-core conductors, composite cores are specifically designed to withstand extreme heat without deforming or losing structural integrity. Steel-core systems often fail under such conditions, or sag beyond allowed clearances, whereas composite cores have proven survivability during the most challenging wildfire events.
- **Post-Fire Survivability**
  Composite core conductors remain operational after exposure to wildfire conditions, eliminating the need for immediate replacements. This resilience reduces reliance on emergency repair crews and the challenges of sourcing hard-to-find installation equipment during crisis situations. Utilities can restore service faster while keeping costs in check.

Tower raising: A key solution for grid resilience and modernization

Epsilon/Ampjack: Another technology you highlighted was tower raising, particularly Ampjack's system. Can you explain how this approach complements composite core conductors in wildfire mitigation and grid modernization?

Commissioner Randy Pinocci: Tower-raising technology, including innovations like Ampjack,

offers a smart and highly effective solution to one of the grid's most critical challenges: achieving adequate clearance and simplifying permitting processes. These systems allow utilities to raise existing towers instead of constructing new ones, addressing key safety and wildfire mitigation concerns while minimizing the complexity and cost of grid upgrades.

By adopting **efficient permitting practices** and leveraging **proven technologies** like Ampjack's tower-raising system, we can save **time, millions of dollars, and resources** across all project aspects. **Less costly permitting** combined with **real technological advancements** should be the only way forward.

Key advantages of tower raising

- **Increased Ground Clearance**
  Raising transmission towers significantly reduces vegetation contact, directly mitigating wildfire risks. This increased clearance ensures safer operations, particularly in fire-prone areas with dense vegetation and challenging terrain.
- **Continuous Operation**
  Advanced systems like Ampjack allow towers to be elevated while lines remain energized. This eliminates the need for service interruptions during upgrades, ensuring uninterrupted grid reliability and reducing operational disruptions.
- **Permitting Simplification**
  By utilizing existing infrastructure, tower raising avoids the lengthy delays and environmental impacts associated with new tower construction. This accelerates project timelines, reduces costs, and helps utilities comply with regulatory requirements more efficiently.

Tower raising, particularly through systems like Ampjack, is an indispensable tool in the grid modernization process and when paired with composite core conductors, the benefits of tower raising are amplified. By addressing clearance challenges while enabling the integration of advanced conductor technologies, this approach represents a forward-thinking strategy to tackle today's challenges and prepare for the demands of the future.

Montana's leadership: House Bill 729 and the path forward

Epsilon/Ampjack: Commissioner Pinocci, your work in Montana has been making waves, especially with the success of House Bill 729 and the North Plains Connector Interregional Innovation Project. Can you elaborate on how these initiatives are shaping Montana's energy future and what lies ahead in 2025?

Commissioner Randy Pinocci: Absolutely, House Bill 729 represents a significant step forward in ensuring that advanced conductor technology is both incentivized and integrated into the modern grid. The bill allows advanced conductors to be rate-based if they meet specific cost-effectiveness criteria, including reduced line losses, enhanced reliability, and another consumer and environmental benefits.

This legislation is transformative because it ties investment in grid infrastructure to measurable efficiency gains. By requiring at least, a 10% reduction in direct current electrical resistance compared to existing conductors, House Bill 729 prioritizes the adoption of cutting-edge solutions like composite core technology. We are now pushing for a 20% reduction in direct current electrical resistance and recognize that we need to set the bar even higher. This is critical for ensuring Safe, Reliable, and Affordable energy for Montanans.

The North Plains Connector is another vital piece of the puzzle. This $700 million interregional project will connect the eastern and western U.S. grids, positioning Montana as a key player in addressing national energy challenges. It’s not just about linking grids; it’s about fortifying our energy infrastructure to handle modern demands while minimizing vulnerabilities. The integration of composite core conductors into these projects will play a pivotal role in achieving these goals by enhancing efficiency and resilience.

In 2025, my agenda focuses on scaling the adoption of composite core conductors and tower raising solutions both within Montana and beyond. It’s about taking proactive steps to modernize our grid while addressing climate-driven challenges like wildfires.

Moreover, we’re exploring ways to incentivize utilities, such as offering insurance breaks for adopting advanced technologies. This aligns with our vision to make grid improvements not just necessary but economically advantageous for all stakeholders. The legislative session in January will be a critical platform for discussing these priorities with utility leaders, policymakers, and technology providers like Ampjack and Epsilon Composite.

House Bill 729 is just the beginning. The success of these initiatives in Montana serves as a blueprint for other states. By identifying high-risk transmission corridors—our so-called “red lines”—and targeting them for modernization with advanced conductors, we can create a safer, more efficient, and sustainable grid across the nation.

To all stakeholders: Commissioner Pinocci invites you to join the discussion later this month, either in person or via Zoom, to provide public comment and support these groundbreaking solutions. Together, we can build a grid that not only meets today’s challenges but also paves the way for a resilient, energy-efficient future.

This is a historic opportunity to lead the country in adopting better technology and improving

energy efficiency. By supporting these efforts, we can drive a transformative shift that reduces carbon emissions, enhances reliability, and ensures a stronger, more sustainable grid for generations to come. Contact a Montana legislator to show your support and help make this vision a reality.

The January legislative session: A defining moment

Epsilon/Ampjack: The upcoming Legislative Session seems like a pivotal moment for Montana and the energy sector as a whole. What can attendees expect?

Commissioner Randy Pinocci: The January session will be a cornerstone for advancing wildfire mitigation and grid modernization. It's a unique opportunity to bring together policymakers, utilities, and industry innovators to address the grid's most pressing challenges while showcasing proven technologies that can deliver real solutions.

Here's what we'll focus on:

- **Epsilon Composite's Advanced Conductors**
  We'll highlight how composite core conductors reduce wildfire risks, improve efficiency, and deliver long-term cost savings. These advanced conductors represent the future of grid reliability, offering unparalleled resilience and operational benefits.
- **Ampjack Technology**
  Demonstrations will showcase how tower-raising systems, like those offered by Ampjack, complement composite cores by addressing critical clearance issues and simplifying permitting challenges. This pairing of technologies provides a comprehensive approach to grid modernization.
- **Efficiency Benchmarks**
  Establishing clear and measurable efficiency standards will be a key topic. These benchmarks are critical for phasing out outdated steel-core systems and accelerating the adoption of advanced technologies like composite cores. By setting robust standards, we ensure that utilities are investing in solutions that meet the grid's evolving needs.

This isn't just a legislative session—it's a call to action. The energy sector is at a turning point, and sessions like this provide the platform to align on strategies that work. I am incredibly excited because this is how we move the needle forward with proven advancements in a space that desperately needs innovation.

A vision for the future

Epsilon/Ampjack: Commissioner Pinocci, we greatly appreciate your leadership and vision for the grid. Before we wrap up, is there anything else you'd like to say about the role of advanced

conductors and tower raising in building the grid of the future?

Commissioner Randy Pinocci: I’ll close with this: companies like Epsilon composite are setting the gold standard for grid modernization. Their composite core conductors are proven, scalable, and essential for creating a grid that is both resilient and efficient. These conductors address critical challenges like wildfire mitigation, line efficiency, and operational reliability, making them indispensable for the grid of tomorrow.

Ampjack’s tower-raising technology is another proven solution that tackles clearance issues, streamline permitting, and enhance grid safety. Together, these innovations provide a comprehensive approach to the challenges we face today.

The tools are here, the solutions are proven, and the time to act is now. Together, we need to build a Reliable, Safe, and Affordable grid that meets the demands of the future while protecting our communities, natural resources, and critical infrastructure.

Epsilon/Ampjack: Thank you, Commissioner Pinocci. Your dedication to driving meaningful progress is exactly what the energy sector needs. We look forward to seeing the impact of your leadership at the January Legislative Session and beyond.