House Energy & Environment

03/05/2026 01:30 PM

HB26-1124 Electrical Generation & Distribution Resiliency

Typed Text of Testimony Submitted

Name, Position, Representing	Typed Text of Testimony
Michael Vance For themself	My name is Michael Vance, a Colorado resident, and I strongly support HB26-1124, the Electrical Generation & Distribution Resiliency bill. This creates the Colorado Electric Grid Resiliency Task Force to assess grid vulnerabilities, prioritize hardening of critical transformers, develop spare-parts plans, and recommend enforceable PUC rules for top protections. Colorado's grid faces rising threats from extreme cold, heavy snow/ice, high winds, wildfiresâ€"events worsened by climate trends. Winter weather ranks as a top threat in our state; nationally, ~80% of major outages from 2000â€"2023 were weather-related, with winter storms causing 23%. Long blackouts create severe health risks, especially for those dependent on electricity for medical devices, heating, or water pumps. The 2021 Texas Winter Storm Uri is a stark warning: inadequate hardening and winterization caused massive failures, millions without power in freezing conditions, hundreds of deaths, and billions in damages. Colorado's aging infrastructure is vulnerable to similar ice loading, frozen equipment, and cascading failures. Experts from the Colorado Public Utilities Commission and Colorado Energy Office stress that targeted investments are urgently needed to prevent comparable disasters. Analogy: Our current grid defenses are like soldiers wearing nylon flak jackets instead of Kevlar. Nylon might stop minor shrapnel but tears apart against a high-velocity bulletâ€"leaving the wearer exposed to lethal harm. Basic measures handle routine weather but fail in extremes: ice overloads lines, cold freezes gear, winds topple polesâ€"causing widespread, prolonged outages. Kevlar's layered design absorbs and disperses impact to save lives. HB26-1124 delivers that upgrade: statewide assessments, prioritized hardening of key assets, spare-parts strategies, and PUC rulesâ€"creating robust, layered defenses so the next extreme weather "bullet" doesn't penetrate, keeping homes lit, hospitals running, and communities safe. We cannot wait for disaster to strike here. Pass HB26-1124 to build true resilience now. Our security and lives depend on it. Thank you.
George Kondos For themself	Representatives of the people have a few main duties. Providing for the safety of those that they represent is one of their most important duties. In our modern society, ensuring the proper operation of the electrical grid is not optional. The welfare of the people is based on access to adequate, secure electrical energy. This bill provides for a common sense, and what seems to be reasonably inexpensive way to ensure that the electrical grid in Colorado is secure and able to adequately supply the needs of the people and organizations of the state. In a state that has grown as fast as ours, with increasing power demands required for continued growth, failure to take the common sense actions specified in this bill would indicate a lack of knowledge or caring on the part of those whose duty it is to provide for the welfare of the people. This is a common sense bill, that should provide valuable information for our elected officials for them to be able to ensure that, in an environment where

	the need for energy is becoming more critical each day, Colorado can continue to provide its people, companies, and public organizations with secure, adequate energy. The straightforward proposals in this bill will go a long way in providing the information that will be needed for Colorado to continue to provide the safe, secure energy that will be needed for our growing population and for the new technologies that will provide the basis for the growth of clean, reliable energy for our future. Sincerely, Dr. George Kondos, DCS, CISSP
Tim Goeders For Task Force on National and Homeland Security	I am the National Director of Logistics Resilience with the Task Force on National and Homeland Security. I am in favor of the legislation, HB26-1124. AS science evolves and threats to the electric grid are better understood, test and evaluation of previous standards must evolve as well. The risk are too great to ignore the existential threats from Cyber, Ground Induced Currents (GIC), man-made disasters whether physical attacks, etc.
Roger Adams For themself	Hello, my name is Roger Adams, I'm an attorney in Colorado #39152, and I'm familiar with the purpose of HB26-1124, and Colorado and the United States is in dire need for passing this legislation both statewide and nationally. My credentials are as follows. I have an undergraduate degree, a B.S., in journalism from which I studied science and technology journalism while at the University of Tennessee. Also while studying at UT I worked for the Tennessee Valley Authority where I learned of the problems with America's national electric grid and the transformers that could fail either due to electrical surges or to other factors including by individuals with mal intent. I have studied the problems with our national electrical grid now for more than 40 years. I have a Juris Doctor from the University of Denver, and I am licensed- and I practice law in Colorado. My credentials are obviously more layman perspectives and are not technical such as the engineers and scientists who taught me about the frailties of our national electric grid. Our national grid is managed by such companies as TVA in Tennessee and its surrounding states it serves, by Duke Power in North Carolina, by Excel Energy in Colorado and by Pacific Gas and Electric in California; none of these geographically-diverse electric power companies manage their grids effectively for the electric power to survive certain electrical surges. We could have catastrophic effects if our independent and national grids were to fail, hugely negatively impacting our communities which rely on electricity for water, food and other basic needs. This bill aligns electrical infrastructure responsibility with electrical infrastructure demand while improving overall electrical system efficiency. From what I have been told by technical experts including engineers and scientists, this bill outlines and

	requires a technically sound and practical approach for our electrical providers to use to keep our communities safe and productive. If you have any questions of me, I'm happy to answer them as best I can. I can be reached at RogerKAdams@RKA-Law.Com, 720-877-1855 (cell), 720-233-7900 (work), 2571 S. Magnolia Street, Denver, CO 80224.

Testimony about HB 26-1124-- Colorado Electric Generation and Distribution Resiliency

By Mike Young, Colorado State Deputy Director, Task Force on National and Homeland Security [www.emptaskforce.us]

I support this bill because our electric grid's critical transformers are vulnerable to threats that produce Geomagnetically Induce Currents (GIC), both from solar storms and High-Altitude Electromagnetic Pulse (HEMP) attack. GICs can overheat and destroy the large transformers that enable our power grid to function. These transformers would take 5-7 years to replace based on current production rates. They are not manufactured in the United States. Since the threat impacts everyone regardless of your political affiliation it is imperative that support of this bill be bipartisan.

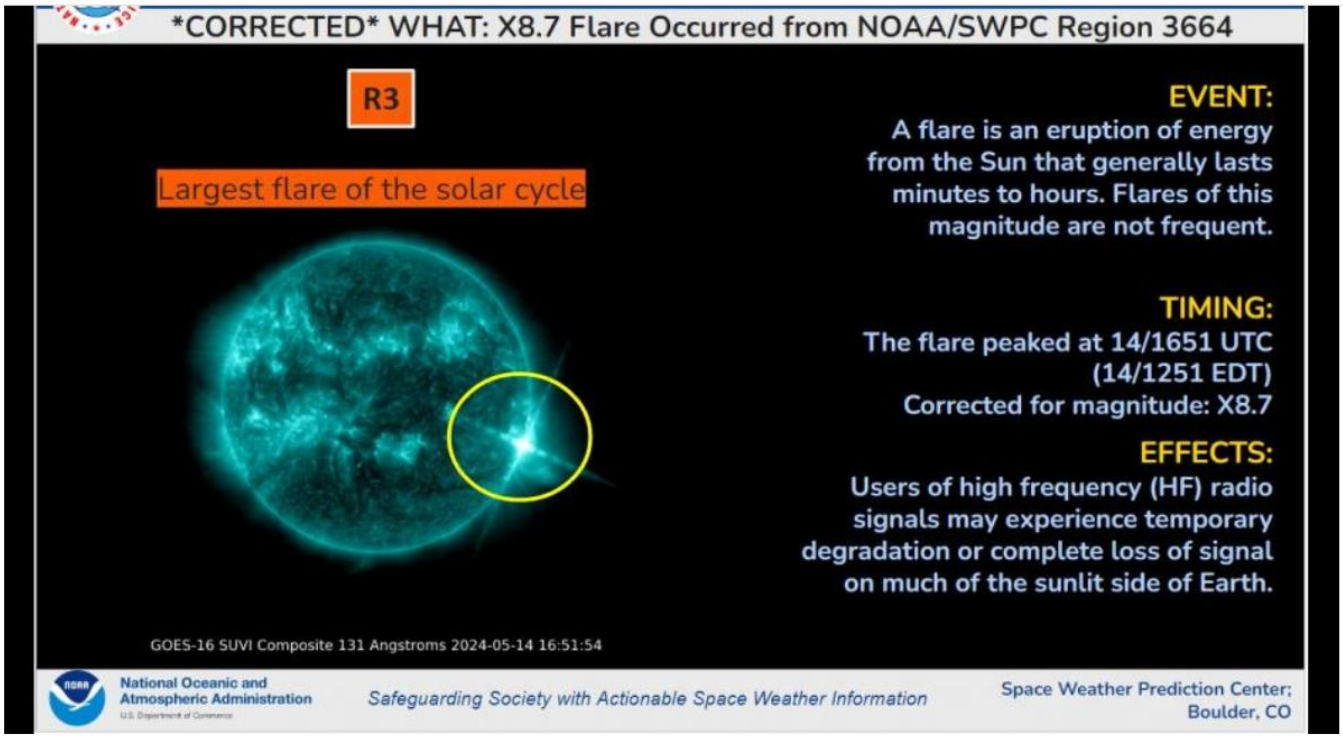
If bullets were impacting around you at the rate of more than 1 per year, would you be complacent or what to do something to protect yourself? There have been 41 X5 or greater solar flares in the last 30 years. X-class flares are the highest category.

How about near misses that could take down the power grid for months to years? The chart below shows solar events that had that potential.

Solar Storm	Strenght DST (Lower Is Stronger)	Details
1770 Storm	**Likely 3–10% stronger and possibly more sustained than Carrington Event.**	
Carrington Event 1859	**Between -850 nano-teslas (nT) and -1600 nT**	**X45 flare**
1921 Storm	**−907±132 nT**	**induced voltages great than 1,000 volts in long-distance telegraph/telephone wires**
1989 Storm	**−750 nT**	**damaged 12 transformers at nuclear power plants, requiring replacement**
Oct Nov 2003 Solar Storm	**−533 nT, −490 nT**	**transformer damage, on the limb of the sun when it unleashed an X-40+ flare**
Jul 2012 Solar Storm	**Estimated at -1182 nT**	**not aimed at earth.**
May 2024 Solar Storm	**−412 nT,−518 nT**	**on the limb of the sun, not pointed at us or the strenght would have been much higher**

Note the three near misses in the last 22 years. They all had the potential to be as big as the worst-case Carrington event, that would have shut down the power grid, long term. They just missed us. I was in the Space Weather Prediction Center during the 2024 event.

This is their press release.



REGION 3664 NOT DONE YET! PRODUCES X8.7 FLARE...LARGEST OF THE SOLAR CYCLE!

published: Tuesday, May 14, 2024 17:29 UTC

Region 3664 produced yet ANOTHER X-ray flare as it moves beyond the Western solar limb!! This time, it was an X8.7 flare, the largest of this solar cycle! Due to its location, any CME associated with this flare will *likely* NOT have any geomagnetic impacts on Earth. As always, stay tuned to our website for updates! **CORRECTED for magnitude 8.7, not 8.8**

When the power grid gets taken down long term, drinking water, food, sanitation, communications, pharmacies, doctor offices, and all the other things that we depend on goes away with it.

Just think of the food supply. Most people only have a few days of food in their homes and without power the food in refrigerators spoils. With the power out, grocery stores are close because of no light and they couldn't check you out. Credit card and checks would not work. Even if the grocery could remain open, shelves would empty in a matter of hours. The "just in time" food supply is delivered daily, but if there is no power, trucks that deliver the food could not be refueled and stop running. The distribution centers that send the food out to the groceries would have no

power and perishables would spoil. The rest would be in the dark. Workers for all of it would not show up.

Another example is drinking water. Most drinking water systems only have a few days of fuel for their backup generators. Water purification systems are power intensive. Once the water stops flowing, people will resort to surface water which is unsafe normally. With failure of wastewater systems, surface water will be much more dangerous. Water borne diseases will spread rapidly.

That is just a couple of the sectors that will go down without power.

The threat of Solar Storms is well illustrated by the link to:

Science@NASA: Carrington Class CME Narrowly Misses Earth

https://www.youtube.com/watch?v=7ukQhycKOFw

I want to submit this video, which illustrates the risk, into the testimony,

This bill takes the first step in solving the GIC vulnerability in Colorado, to inventory all the transformers in Colorado and do a vulnerability assessment to determine which transformers are most critical and need more protection. We need to begin rapid implementation of known protection technology on our most critical transformers.

In closing, do you want to gamble on us continuing to be lucky, or do you want to fixed this vulnerability?

Our Task Force is a 501(c)(3) nonprofit working for the public interest, and receives no funding from special interests, governments, utilities or companies protecting the grid.

Submitted by Mike Young, Deputy Director of the Colorado Task Force on National and Homeland Security. Founder and principal lecturer for the Preparedness Education Network for its first 15 years. Nuclear, Aerospace, DHS, and classified work/experience.

A Colorado/Western Interconnect Strategy Starts with A Colorado State Task Force as Prescribed in HB26-1124

And the

SolidGround Neutral Blocking System

Already Deployed and Functioning in the Western Area Power Authority (WAPA)

Dateline: March 05, 2026

Contributors Authors

David Hilt

- Former NERC Vice President
- Co-authored DOE Confidential Reports for the ERCOT 2011 Polar Vortex Incident and the Metcalf Terrorist Attack.
- Worked with FERC Leadership to highlight challenges to a resilient electrical power grid.
- Worked on the CIP14, an advanced evaluation of the NY power grid for compliance.
- Risk assessment of the 500 kv Dominion transmission system around DC.
- Now the Board Chairman for the Task Force on National and Homeland Security

Leonard Januzik

- Co-authored DOE Confidential Reports for the ERCOT 2011 Polar Vortex Incident and the Metcalf Terrorist Attack.
- Worked on the CIP14, an advanced evaluation of the NY power grid for compliance.
- Worked on risk assessment of the 500 kv Dominion transmission system around DC.
- Worked with FERC Leadership to highlight challenges to a resilient electrical power grid
  ● Now the Eastern Interconnect Director for the Task Force on National and Homeland Security

Maria Sumnicht

- Former Urban Technology Architect for the City of New York
- Smart city infrastructure expert
- Advocate of internet resilience and cyber security architect
- Former computer scientist at NASA Ames and Cisco Systems developing wireless and network management technologies.
- Co-founded SurveillanceGrid,

Glenn Rhoades

- Sustainable habitat trained architect/designer.
- Worked for 36 years in aerospace/defense, and construction management.
- Co-founded the Colorado Nanotechnology Initiative
- Worked to join the National Science Foundation (NFS) & Colorado into the National Nanotechnology Infrastructure Network (NNIN)
- Member of the NFS working group on the Legal, Societal, and Ethical Considerations of Nanotechnology Development
- Worked previously as Dr Peter V. Pry's National Operational Manager

Various Other SME contributors

- Sustainable (SMNR)
- “OTO” IoT Protection and Detection

Date: March 05, 2026

Prepared For: Colorado State Policymakers

Prepared By: The Task Force on National and Homeland Security, 501(c)(3)

Introduction and Background

The Task Force on National and Homeland Security is committed to highlighting resiliency issues and providing solutions to keep the continuity of electrical power to life sustaining infrastructure. We seek proven solutions that can be rapidly and economically deployable for the energy security of the nation.

We are committed to the foundational bedrock of sustainability models highlighting the continuous electrical operation of biological and physiological needs of human habitat.

This brief summary highlights a strategic plan to assist Colorado in meeting at least some of these goals.

Why Action Is Imperative

Our current Colorado operating environment is being pressured on a number of fronts.

- **Civil Defense Framework:** Consolidating a multiple jurisdictional electrical power protected framework is currently a super critical challenge. Currently we are too operationally fragmented and not secured from many exiting hazards.

- **National Energy Security Framework:** We live in an extraordinarily complex society dependent on continuous power. Natural and manmade threats can disrupt or destroy infrastructure operations often are not fully understood and therefore not being addressed. Manmade threats via sophisticated and coordinated attacks, especially ones masked by a natural event, could plunge vast regions into darkness, disrupt communications, and threaten the continuity of government and emergency services.
  After incident investigations pertaining to the current regional electrical power outages within RTOs, indicate an inadequate real-time response to black start of the source RTO and neighboring RTO regions.

- **Economic Security Framework:** The grid is the backbone of our economy. Prolonged outages would halt commerce, disrupt supply chains, and cause incalculable losses in both public and private sectors. Emerging massive future energy power demands places the nation at risk.

- **Public Health and Safety Framework:** Hospitals, water treatment plants, and emergency responders all depend on reliable power. Failure to act puts lives at risk, especially among our most vulnerable populations.

The Path Forward: Proven, Cost-Effective Solutions

The resilience of the North American electrical power grid, like the Western Interconnect, is a paramount national security concern. Vulnerabilities to highly localized cyberattacks, coordinated kinetic threats, and natural or man-made Electromagnetic Pulse (EMP) and Geomagnetic Disturbance (GMD) events, demand immediate and targeted intervention.

This Colorado proposal outlines a strategy to move beyond economic efficiency models (e.g. RTOs) and build true security assurance through cyber and physical hardening, including IT and OT control systems, energy autonomy, hardware sensors, monitors, gauges, SCADAs, and the establishment of dedicated governance authority to coordinate responses to existing and emerging threats.

The deployment of harden black start nodes would give the entire nation a fighting chance to remain a geopolitical leader. This strategy would be an overlay to support existing divisions of the US Power Grid. The ability to secure power to the nation directly affects emergency communication and operationally capabilities to support a National or Regional Civil Defense Response to an Extended Power Outages (EXPO). This would ensure both civil and military operational response capabilities.

Two proven key features of this strategy include,

- Immediately deploy a strategic framework to deploy a fractured (Island Mode) grid approach to resiliency incorporating a proven deployed technology **SolidGround® GIC Neutral Blocking Device (NBD)** already in the Western Area Power Authority. (WAPA)

- Immediately deploy the **SolidGround® GIC Neutral Blocking Device (NBD)** made by EMPrimus out of Minneapolis, Minnesota to protect critical high-voltage transformers (HVTs) nationwide from geomagnetic, GMD-induced currents. These include the protection of **Generation Station Units (GSU),** the most critical single point of failure, long lead items ensuring black start generation station capabilities. https://www.emprimus.com/

THREE STRATEGIC PILLARS:

1. CREATE AN ISLAND RTOs - IN COLORADO IT IS CALLED THE COLORADO ELECRICAL TRANSMISSION AUTHORITY.

We follow the historical approach that FERC has agreed is a historically practical solution to resiliency to prevent domino failure. Currently the RTOs are fractured along economic criteria and not so much taking into account resiliency criteria.

2. CREATE AT LEAST ONE RESILIENT CAPABLE RTO NODE WITHIN THE WESTERN INTERCONNECT

By adding a resilient black start capable node, we implement a pathway to an All-Hazard Island RTO Mode Protection Asset. As a nation we would now have the capability to assure a black start capable response to multiple threats that could prevent a catastrophic grid down situation.

This new overlay will eventually overlay to the point where in its final deployment all the nodes within the entire interconnect entire interconnection would be capable of kinetically black starting each neighboring segment of the interconnect. The current grid lacks the assured RTO capability to restart quickly following a regional or national-scale collapse. Our strategy focuses on initially securing the most critical single-point-of-failure components first.

Three proven key features of this strategy include.

1) VAT/VLAT

Deploy islanding and harden security overlay fracture the much studied harden the Legacy Bulk Power Grid. Deploy the **Vulnerability Assessment Tool.** This tool would be capable of analyzing various characteristics including real time related power load balancing, power phasing, frequency concerns to electrical past, real time to response to immediate strategic quick responses and assure continuous power network assets.

Mapping tools that would help seek out and identify the scope of the targeted area. Identify the most critical single points of failure Generation Base Units needed for the entire Western Interconnect.

Logically identify the area (node) needed to eventually black start each node in succession. The entire Western Interconnect would eventually have all nodes to protect to assure that electrical power plants viable and sustainable.

2) CREATE SECURITY CENTERS OF ELECTRICAL POWER GIRD EXCELLENCE.

Our nation needs to create and highlight at least one national example to a resilient all hazards example for each of the prime electrical sources of energy generation. For example, in the Eastern Interconnect the Calvert Cliff Nuclear Power Generating Facility in Lusby Maryland is one such critical area of concern. The Calvert Cliffs Nuclear Power Plant in Maryland must be showcase harden to all hazards due to its close proximity to Washington, DC and is the most at risk for potentially bringing down the US Head of Government.

This is a prime candidate in the Nuclear Power Space due to its strategic location to assure the continuity of Government and the spent fuel rods currently stored on site which could catch fire, should the bulk power system ever fail.

The concept here is to develop, deploy and showcase Colorado Power Generation Base Units, (GBUs) eventually within all interconnects that can deploy proven technologies that can be a benchmark for a future development toward power security.

Selected Colorado Power Resilient Centers of Excellence, including Coal, Hydro, Solar, Wind and Biomass. Each of these centers would provide a pathfinder to future grid deployed proven and tested assets for the entire country in future years.

3. DEPLOY THE SOLIDGROUND® GIC NEUTRAL BLOCKING DEVICE (NBD) REPORT

A copy of this report can be found at

https://mail.google.com/mail/u/0?ui=2&ik=19397682d4&attid=0.1&permmsgid=msg-a:r4831813836034020027&view=att&disp=safe&realattid=19c9c71f057165acf531&zw

Our grid is vulnerable to geomagnetic disturbances (GMDs) and high-altitude electromagnetic pulse attack (HEMP). The main impact of these events is the quasi-dc currents they induce into the earth. These ground induced currents ("GICs") travel the path of least resistance and invade the power grid through the ground connected transformer neutral wires.

Once in the grid, GIC specifically threatens the largest and most difficult to replace components on the power grid: large power transformers, large power generators, and high voltage circuit breakers. There must be a priority to protect these irreplaceable assets.

Low-level GIC events from common solar activity are costing the U.S. economy over $10 billion dollars annually (based on Zurich insurance claim studies).

Today, if a large solar event hits the earth as it did in 1859 (the "Carrington Event"), Lloyd's of London estimates it will cost the U.S. economy between $0.6 to 2.6 trillion based on value of lost load, not including catastrophic loss of life and equipment damage.

Operating procedures cannot block GIC from entering a power grid. Hardware must be installed. A mature, validated technology exists, called SolidGround® (manufactured by Emprimus) which has been operating on the U.S. power grid for over ten years with a perfect record of blocking GIC with no negative impacts to the system. It is a standardized device able to be mass produced, and a closed system does not require tampering with existing AC controls. It simply attaches to the transformer ground wire. SolidGround® has been tested by DOD/DTRA, INL, chosen and tested by DOE and EPRI (as part of Executive Order 13744), purchase and installed by ATC, TVA, WAPA, with many papers written and testimony given by utilities and national labs in front of the U.S. Senate Homeland Security & Governmental Affairs Committee.

There are an estimated 50 large power transformers in the Colorado that are identified as "high risk designs" to GIC. These large transformers can be protected for an estimated $25 million dollars, one time cost. Blocking GIC not only protects these large power transformers but protects the rest of the grid *from* these transformers, that if left unprotected, GIC will cause them to induce harmonics which they inject into the grid causing upset and damage downstream. Blocking GIC also protects the power grid against small GIC events (causing $10 billion in annual economic bleed off) and large catastrophic GIC events due to extreme solar activity (which are a statistical certainty) and EMP (intentional).

We do not need more studies; we need decisions to be made and funding to protect, with a prioritized approach beginning with the most critical sites. A Colorado Legislated Task Force as specified in HB26-1124, would allow funding avenues to be initiated.

This Colorado Electrical Power Grid Report was submitted by the Task Force on National and Homeland Security and is an evolving work in progress.

Date: February 05, 2026
Glenn Rhoades
National Executive Director
Task Force on National and Homeland Security

ENERGY FIELD SECURITY

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February 20, 2026

House Energy & Environment Committee Colorado General Assembly

Re: Strong Support for HB26-1124 – Electrical Generation & Distribution Resiliency

Dear Chair and Members of the Committee,

I write in strong support of **HB26-1124**, sponsored by Rep. Ken DeGraaf, which creates the **Colorado Electric Grid Resiliency Task Force** to address vulnerabilities in our electric systems—particularly from severe space weather events and the late-time (E3) component of high-altitude electromagnetic pulses (HEMP). As a long-time resident of Delta County, DER developer since 2010, currently Resilient Microgrid Director on the National EMP Task Force, and CEO of Energy Field Security, I have dedicated years to hardening distributed energy resources against these exact threats.

The bill's findings are spot-on: Colorado's grid faces real risks from geomagnetically induced currents (GICs) that can saturate and destroy extra-high-voltage transformers—assets with 3–6+ year replacement lead times. A coordinated statewide approach is essential, especially since not all entities fall under PUC jurisdiction. The task force's 18-member composition (bipartisan legislators, state agencies, utilities, cooperatives, municipal utilities, and experts) ensures balanced, practical input.

Key duties in the bill—biennial engineering assessments of "covered transformers," developing hardening standards (using E3 HEMP waveforms), creating a statewide resiliency plan with spare parts stockpiling, and recommending funding/legislation—are prudent and cost-effective. Targeted hardware-based mitigations, such as neutral blocking devices (NBDs) for transformer neutrals, represent low-cost insurance (national estimates: <$4 billion for critical assets) against catastrophic blackouts that could cost trillions or threaten lives.

This aligns with national momentum: the recent unanimous NCSL resolution urging Congress and states to prioritize grid protection from solar weather and EMPs, echoing prior federal EOs (Obama 2013 PPD-21/EO 13636; Trump 2019 EMP EO) and pilots (e.g., JBSA-EDI, Lake Wylie). In rural Colorado—home to municipal utilities like Delta Municipal Light & Power, cooperatives, and critical loads—resilient, decentralized solutions (e.g., EMP-hardened microgrids with SMR integration, AI/ML monitoring, and community DER participation) are vital for local energy independence and continuity.

HB26-1124 provides the framework Colorado needs: study, assess, plan, and act. I urge the committee to advance this bipartisan, urgent legislation. Energy Field Security stands ready to provide input, data from our Pure Watt Project (focused on resilient baseload power via hardened DER/microgrids), or demonstration opportunities to the task force.

Thank you for your leadership on this critical issue. Protecting Colorado's grid protects our communities, economy, and way of life.

Sincerely,

David A. Moran

Testimony HB 26-1124-- Colorado Electric Generation and Distribution Resiliency

By John Spence, Colorado State Director, Task Force on National and Homeland Security [www.emptaskforce.us]

I support this bill because our electric grid's critical transformers are vulnerable to threats that produce Geomagnetically Induce Currents (GIC), both from solar storms and High-Altitude Electromagnetic Pulse (HEMP) attack. Since the threat impacts everyone regardless of your political affiliation it is imperative that support of this bill be bipartisan.

The production lead times for large power transformers can be for up to 4-6 years. So, if a solar storm or HEMP attack ruined Colorado transformers today, it may take until 2032 to receive replacements assuming no collateral damage to infrastructure needed to make them and get them to where they are needed; meaning that a GIC induced blackout could be long lasting, deadly and costly.

In 1989, Quebec suffered a 9-hour blackout caused by GIC, resulting in $13.2 billion in economic loss. In 1859, the Carrington Event was the largest solar storm ever recorded, and Scientists say that a solar storm of this magnitude today would destroy our electric grid and that solar storms of this magnitude occur about every 150 years.

Unfortunately, Colorado's transformers are not protected against a serious GIC due to low NERC protection standard for a GIC threat which is much lower than GIC levels experienced in previous solar storms and more than 20 times lower than GIC protection recommended in the updated international HEMP standard.

The bad news:

Concerns about NERCs defective GIC standard has been communicated to both the Biden and Trump administrations and yet the GIC threat persists. The risk of severe GIC is increasing from the sun's current solar activity and we had a near miss from a large event a few years ago. The Congressional EMP Commission estimated that a long-term blackout could result in the death of 90% of our population from the lack of clean water, sewage treatment, food supplies, functioning transportation, needed medical supplies and resulting disease. **Almost nothing has been done to protect Coloradoans.**

The good news: This is a fixable problem. Proven, tested and affordable GIC protection technology exists; the bill creates a Colorado electric grid resiliency task force to study the issue of grid resilience and to make recommendations to the governor and the general assembly. For example, protection techniques have been operating at a few locations in the United States power grid for over 10 years. Neutral resistors that reduce the GIC current flow can be used to protect important transformers. Also, the Western Area Power Administration (**WAPA)** has installed Solid Ground protection on transformers in at least two locations but **nothing in Colorado!**

Other nations are installing this technology across their electric grids, even China at a very rapid rate. **This concerns me and it should concern you too!**

The first step in solving the GIC vulnerability in Colorado is inventory all the transformers in Colorado and do a vulnerability assessment to determine which transformers are most critical and need more protection. **HB 26-1124 does just this and more by establishing a Colorado Electric Grid Resiliency Task Force.** We need to begin rapid implementation of known protection technology on our most critical transformers.

Our Task Force is a* 501(c)(3) *nonprofit working for the public interest, and receives no funding from special interests, governments, utilities or companies protecting the grid.

John Spence BIO, Task Force on National and Homeland Security

https://emptaskforce.us/leadership-team/john-spence/

Co-Founder & Colorado Director - Board of Directors

Director of the Colorado Task Force on National and Homeland Security; work with state legislators to protect the Colorado electric grid, and other critical infrastructures such as water and wastewater systems. Provide testimony before the legislature, state agencies, and on radio broadcasts. Previously in GAO; expertise in system security, Critical Infrastructure Protection (CIP) and financial management including CIP reports and development of the Federal Information System Controls Audit Manual (FISCAM). Coordinated work on information system controls with the National Institute of Standards and Technology (NIST) and evaluated top secret computer systems at Los Alamos National Laboratory. Currently, interface with national experts in grid resiliency vulnerabilities and solutions. I am certified in financial management (CGFM retired), and information systems security (CISSP and CISA). MA in political science from CSU. Published Master's Thesis on Implementation of the Federal Water Project Recreation Act in Colorado. Lifetime member of the National Ski Patrol.