

## **Archival Section Overview**

Richard M. Krieg

This archival section is a curated revisit to some of the pioneering articles that have helped shape *JCIP*'s trajectory to date. These seminal works offer a retrospective on selected topics—among many—that we've explored in past years. They reflect our commitment to underscoring critical aspects of infrastructure resilience and policy-relevant discourse.

These cornerstone articles also embody *JCIP*'s dedication to an interdisciplinary platform that addresses complex issues with analytical depth. They are a collective narrative that present scholarly achievements but also set the stage for future exploration and policy refinement. Together, they embody the Journal's mission to inform, influence, and inspire the critical infrastructure community in shaping more resilient and secure systems.

It is hoped that the Journal will continue to help illuminate the path forward, guiding researchers, practitioners, and policymakers in their vital quest to safeguard the infrastructural underpinnings of modern societies.

### **Article Selection**

The difficulty of selecting any sample of articles from a corpus collectively authored by over a hundred individual contributors was daunting. To do so, we relied on the following criteria:

#### ***Relevance to Evolving CI Complexity***

Articles were chosen for their deep analysis of CI as complex adaptive systems, highlighting the interconnectivity and the potential cascading effects of failures across sectors.

#### ***Insight into Post-9/11 Security Developments***

Selected works offer critical perspectives on the changes in national security post-9/11, particularly the advancements and ongoing vulnerabilities within CI in the face of modern threats.

#### ***Responses to Natural and Human-Made Disasters***

Priority was given to articles that address the burgeoning risks posed by such disasters, showcasing the imperative for resilience and adaptability in CI planning and response.

### ***Contribution to CI Policy Discourse***

The articles illuminate the intricate layers of CI policy, contributing to a field that requires a nuanced understanding of the interplay between technical risk assessment, governance, and the crafting of responsive strategies.

### ***Innovative Solutions and Strategies***

Works that propose innovative solutions or strategies to enhance CI resilience and adaptability were particularly sought after, reflecting the journal's focus on forward-looking, actionable research.

### ***Cross-Sector Impact Analysis***

We favored articles that examine the implications of CI vulnerabilities and resilience across various sectors, providing insights that transcend individual industries or fields.

### ***Interdisciplinary Approach***

Articles that employ an interdisciplinary approach, integrating perspectives from engineering, policy studies, economics, and social sciences, were selected for their holistic view of CI challenges.

## **The Articles**

“Progress toward Resilient Infrastructures: Are we falling behind the pace of events and changing threats?” by **David Woods and David Alderson** opened the discourse by dissecting the Strategic Agility Gap. This analytical work probed the dichotomy between the rapid evolution of infrastructural threats and the comparatively sluggish pace of adaptive organizational strategies. The authors brought to light the myriad unforeseen breakdowns and the pressing need for a strategic pivot toward resilience-focused strategies. Through a detailed examination of recent infrastructural failures, the authors call for a reevaluation of current methodologies and the adoption of innovative approaches that embrace scientific advancements to enhance strategic agility across various critical infrastructure sectors.

My Editor's Interview with **Maria Korsnick** (“Small Nuclear Reactors Essential to the U.S. Energy & Climate Change Future”) offered a deep dive into the transformative potential of nuclear energy in the context of climate change. Korsnick articulates a strategic vision where Small Modular Reactors (SMRs) and microreactors emerge as game-changers in the decarbonization of the nation's energy sources. This conversation provided a thorough examination of the dual objectives of economic feasibility and enhanced safety protocols. The interview illuminated the complexities of integrating advanced nuclear technologies into our energy ma-

trix and points to the broader implications for policy, industry, and environmental sustainability.

In “Energy Supply Chains and Change,” **Diane Graziano, Elisa Alonso, Fletcher Fields and Diana Bauer** presented a comprehensive model for understanding the global energy markets, with a particular focus on the critical role of large gas turbines in electricity production. Their article delved into the intricate dynamics of energy supply chains, offering an analytical framework that considers the multifaceted interactions of market forces, technology production, and anticipated trends. This piece stood out for its systematic approach to dissecting the complexities of the energy sector and its supply chain dependencies, providing a critical tool for policymakers and industry stakeholders.

**George Baker’s** exploration of the resilience of the United States’ critical infrastructure against electromagnetic pulses provided an in-depth analysis of the nation’s electric grid vulnerabilities. In “Electromagnetic Pulse Resilience of United States Critical Infrastructure: Progress and Prognostics,” he meticulously outlines the strategies needed to shield the grid against both natural and adversarial electromagnetic threats, drawing on a rich body of research and strategic defense insights. It presented a comprehensive overview of operational vulnerabilities and proposed a suite of strategies aimed at safeguarding critical infrastructure, thereby contributing to the national dialogue on grid security and resilience.

“The 2021 Texas Electric Grid Failure: Causes, Consequences, and Cures” by **Thomas Popik and Richard Humphreys** delivered a critical post-mortem on one of the most significant infrastructural failures in recent history. The authors provide a granular analysis of the technical failures and policy oversights that led to widespread blackouts. Their findings advocated for systemic reforms, including market model adjustments, to prevent future infrastructural failures. This piece continues to serve as a pivotal resource for understanding the vulnerabilities in our energy infrastructure and the necessary steps to enhance grid reliability and resilience.

**Daniel Shea’s** “Nuclear Policy in the States: A National Review” provided an exhaustive review of the legislative landscape influencing the advancement of nuclear energy at the state level. The article maps out the legislative momentum and its substantial impact on the nuclear industry’s trajectory, elucidating the complex interplay of policy development, federalism, and industry dynamics. It stands as a comprehensive source of information on the nuances of nuclear energy policy and its implications for the broader energy policy discussions.

“Incentivizing Good Governance Beyond Regulatory Minimums: The Civil Nuclear Sector” by **Debra Decker and Kathryn Rauhut** introduced a novel “Good Governance Template” to the discourse on critical infrastructure security. The article examines how market incentives can be strategically employed to encourage en-

hanced security practices beyond regulatory requirements. This piece continues to contribute to the conversation on innovative policy solutions, highlighting the role of market mechanisms in achieving security objectives and the potential for such frameworks to transform security practices across critical infrastructure sectors.

Finally, “Evolution and Trends of Industrial Control System Cyber Incidents Since 2017” by **Robert Grubbs, Jeremiah Stoddard, Sarah Freeman, and Ron Fisher** addressed the growing cyber threat to industrial control systems. The article provides a thorough analysis of the vulnerabilities and incidents that have marked the landscape in recent years. By advocating for a proactive policy framework, the authors underlined the critical need for robust cybersecurity measures to protect the operational technology environments that are vital to national and economic security.