Before the
Federal Communications Commission
Washington, DC 20554

In the Matter of	)	
	)	
	)	
Improving 9-1-1 Reliability	)	PS Docket No. 13-75
	)	
	)	
Reliability and Continuity of Communications	)	
Networks, Including Broadband Technologies	)	PS Docket No. 11-60
	)	

COMMENTS
OF THE ALLIANCE FOR TELECOMMUNICATIONS INDUSTRY SOLUTIONS

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SUMMARY

ATIS NRSC believes communications networks, including the infrastructure necessary to access 9-1-1 services, are highly reliable and resilient. While no communications system can be 100% reliable in all circumstances, when outages do occur, the industry has robust processes in place that allow for identification of network failure root causes and for corrective action.

The NRSC also notes that Best Practices are extremely important to the industry and widely adopted. The success of Best Practices stems from their development in a voluntary and consensus-based environment that encourages a pooling of expertise and allows for the continued evolution of these practices. Adherence to Best Practices therefore must remain voluntary and the decision whether or not to implement a specific Best Practice must be left to individual providers.

The NRSC recommends that the industry be engaged in developing the optimal implementation approach for the *Derecho Report*'s recommendations. The NRSC would be very interested in participating in this process and notes that it has a successful track record of working collaboratively with the FCC to address significant challenges facing the industry. As to the specific recommendations from the *Derecho Report*:

- Regarding 9-1-1 circuit auditing, the NRSC notes that communication providers do recognize the importance of maintaining 9-1-1 circuit availability and have appropriate processes in place to meet established commitments to PSAPs. ATIS, however, does not believe that prescriptive requirements are necessary regarding circuit auditing. To the extent that the Commission does adopt requirements that include annual reporting obligations, ATIS NRSC recommends that such information be considered confidential.
- Regarding backup power to central offices, ATIS NRSC recommends that service providers be afforded the flexibility to administer backup power policies as appropriate to their individual networks and to accommodate any site-specific issues.
- Regarding network monitoring capabilities, the NRSC recommends that providers retain the flexibility to implement diversity and the migration of telemetry to the IP network as appropriate for their network evolution, management, and monitoring.
- Regarding PSAP notifications, the NRSC agrees that communication with PSAPs during an outage event is important and suggests that the industry be involved in developing more consistent notification criteria. The NRSC believes that such criteria should afford 9-1-1 service providers the flexibility to work with the individual PSAPs to determine the optimal communications process, content and timing for that PSAP.

Finally, ATIS urges the Commission to closely evaluate the estimated costs of the proposed rules to ensure that it can properly balance the burdens of any new rules against their purported benefits.

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COMMENTS

OF THE ALLIANCE FOR TELECOMMUNICATIONS INDUSTRY SOLUTIONS

The Alliance for Telecommunications Industry Solutions (ATIS) submits these comments on behalf of its Network Reliability Steering Committee (NRSC) in response to the *Notice of Proposed Rulemaking* (*NPRM*), released March 20, 2013, in the above-referenced docket. In the *NPRM*, the Federal Communications Commission (Commission) seeks comment on approaches to ensure the reliability and resiliency of communications infrastructure necessary to ensure the continued availability of 9-1-1 and, in particular, on the recommendations in the January 2013 report from the Commission's Public Safety and Homeland Bureau (PSHSB) on the Impact of the June 2012 Derecho on Communications Networks and Services (*Derecho Report*). As a trusted expert in the area of network reliability and resiliency, the NRSC is pleased to have the opportunity to provide its input on the recommendations made in the *NPRM* and *Derecho Report*.

I. Introduction

ATIS is a global standards development and technical planning organization that leads, develops and promotes worldwide technical and operational standards for information, entertainment, and communications technologies. ATIS' diverse membership includes key stakeholders from the Information and Communications Technology (ICT) industry – wireless and wireline service providers, equipment manufacturers, broadband providers, software developers, consumer electronics companies, public safety agencies, digital rights management companies, and internet service providers. Nearly 600 industry subject matter experts work collaboratively in ATIS' open industry committees and incubator solutions programs. Technical, operational, and business priorities are also examined by ATIS through its Technology and Operations (TOPS) Council, a group established by the ATIS Board of Directors to identify and address the ICT ecosystem's needs through focused, expedited efforts.

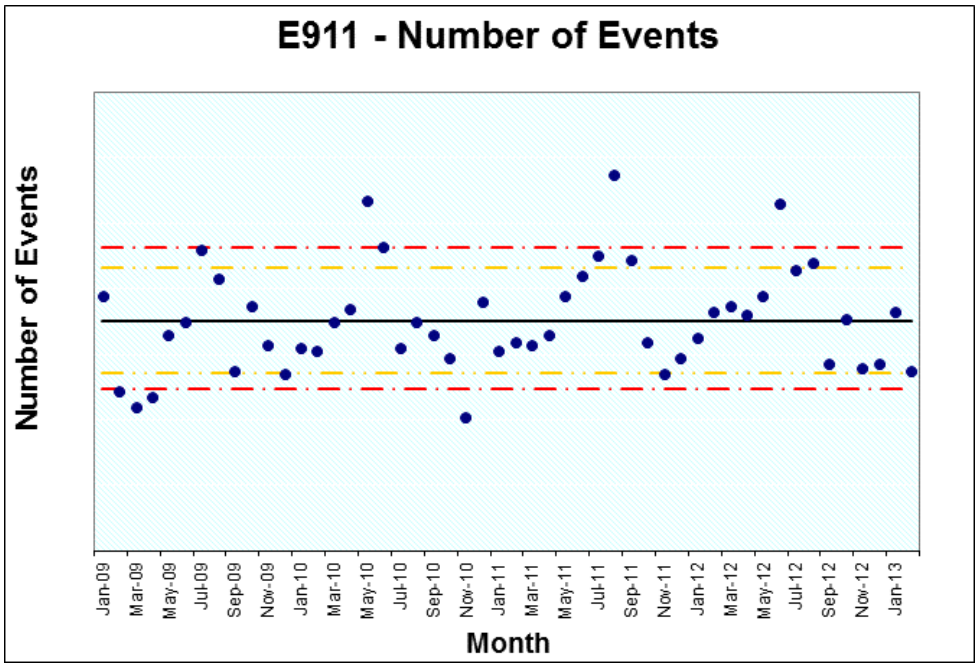
One of ATIS' industry forums is the NRSC. Formed in 1993 at the recommendation of the first Network Reliability and Interoperability Council, the ATIS NRSC strives to improve network reliability by providing timely consensus-based technical and operational expert guidance to all segments of the public communications industry. The NRSC addresses network reliability improvement opportunities in an open environment and advises the communications industry through the development of standards, technical requirements, reports, bulletins, Best Practices, and annual reports. The NRSC is comprised of industry experts with a primary responsibility for examining, responding to, and mitigating service disruptions for communications companies. NRSC participants are the industry subject matter experts on communications network reliability and outage reporting.

II. Comments

In the *NPRM*, the Commission seeks input on a variety of issues related to the reliability and resiliency of the communications infrastructure, with particular focus towards the infrastructure necessary to ensure the availability of the 9-1-1 system during major disasters. The ATIS NRSC supports the Commission's examination of these issues and notes the industry shares the Commission's goal of ensuring customers have access to reliable and resilient 9-1-1 communications systems during disasters.

The NRSC believes communications networks, including the infrastructure necessary to access 9-1-1 services, are highly reliable and resilient. The continued reliability of communications networks used to access 9-1-1 communications was recently documented by the Commission in its April 2013 report, *Analysis of Network Outage Reports*, which was presented at the public NRSC meeting on April 24, 2013. This report, which provides a high-level analysis of all outage reports filed by service providers and others through the Commission's Network Outage Reporting System (NORS), demonstrated that the frequency of E9-1-1 outages are in control as illustrated in the chart below.[1]

[1] *Analysis of Network Outage Reports*, Cybersecurity and Communications Division, Public Safety and Homeland Security Bureau (April 2013) at p. 6, p. 21 (posted at: http://www.atis.org/nrsc/Docs/Meetings/2013/042413/NRSC-2013-04-24-04-FCC.pdf).



The industry recognizes the importance of 9-1-1 availability and in fact it is in the best interests of service providers to maintain and protect their networks and services for their customers. A communication provider's core business depends on the provision and maintenance of reliable service and the communications industry spends billions of dollars annually to improve and reinforce network capabilities. Ensuring reliable service is particularly important given the competitive marketplace that exists today.

The need to offer reliable service to customers also incents the industry to take self-imposed steps to proactively address and respond to network reliability issues. The industry does not wait for Commission action and resolves virtually all issues without the Commission's intervention. The industry has well-established mechanisms to monitor, analyze and mitigate issues; significant resources are expended in the development and implementation of these mechanisms in order to meet the specific and unique business needs of individual service providers. These resources are expended because communication providers strive to provide world class service to their customers and because the marketplace demands it.

Regardless of the resources utilized to ensure reliability, communications systems cannot be 100% reliable in all circumstances. However, when outages do occur, the industry has robust processes in place to quickly identify the root cause of network failures and to efficiently implement a restoration plan. The industry takes steps to learn from the challenges posed by events like the Derecho and to identify where industry practices and implementations could be refined, improved and/or developed to reduce or prevent future impacts during similar events.

A. Best Practices Are Valuable, Widely Deployed Tools

In the *NPRM*, the Commission seeks comment on the role Best Practices can and do play in enhancing network reliability. Among the specific issues on which input is sought is the extent to which network reliability Best Practices, particularly those related to circuit auditing, central office backup power, and monitoring link diversity are followed by the industry.[2]

The NRSC notes that Best Practices are extremely important to the industry and widely adopted. As noted in the ATIS NRSC Best Practices Tutorial,[3] industry practices become "Best Practices" only when they are proven through actual implementation and confirmed by a broad set of stakeholders. These are not theoretical solutions to possible challenges, but actual practices that can help mitigate real-world problems. However, while Best Practices have been widely adopted and implemented, Best Practices are not considered to be universally applicable and there are situations in which a Best Practice may not be implemented by a service provider. Such decisions are made based on expert evaluations, risk assessments, and/or other considerations. In some situations, a Best Practice may have been superseded by provider-

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[2] *NPRM* at ¶20.

[3] ATIS NRSC Best Practices Tutorial (November 2011) at p. 2.

specific internal practices. The decision whether to implement a specific Best Practice is also guided by the overarching concern of providers for their customers' needs and the protection of their networks.

The Commission also seeks comments on the balance between Best Practices and Commission mandates as they relate to 9-1-1 communications.[4] ATIS appreciates the Commission's acknowledgement of the need to balance these two important but distinct approaches and urges the Commission not to disrupt the development of Best Practices through a heavy-handed reclassification of Best Practices as regulatory mandates.

Unlike regulatory mandates, which generally impose rigid rules based an evaluation of circumstances at a specific point in time, Best Practices provide guidance based on industry expertise and experience and continually evolve to meet new technical, business, and consumer expectations. The success of Best Practices stems from their development in a voluntary and consensus-based environment in which industry experts collaborate and constantly update existing and/or develop new Best Practices to account for current technology and network growth. In fact, Best Practices are created by the industry with the specific understanding that they will not be mandated as requirements. Mandating Best Practices would eliminate the flexibility necessary for service providers to meet network-specific demands and customer expectations, including service features and quality, reliability, and cost effectiveness. Adherence to Best Practices therefore must remain voluntary and the decision whether or not a specific Best Practice can be implemented must be left to individual providers. Moreover, mandating Best Practices would have a chilling effect on any effort to develop future, voluntary

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[4] *NPRM* at ¶20.

Best Practices. This was highlighted by the Commission's Network Reliability and Interoperability Council (NRIC) in 2005, which noted:

> *Mandated implementation of these Best Practices is not consistent with their intent. The appropriate application of these Best Practices can only be done by individuals with sufficient competence to understand them. Although the Best Practices are written to be easily understood, their meaning is often not apparent to those lacking experience and/or expertise in the specific job functions related to the practice. Appropriate application requires understanding of the Best Practice impact on systems, processes, organizations, networks, subscribers, business operations, complex cost issues and other considerations. With these important considerations' regarding intended use, the industry is concerned that government authorities may inappropriately impose these as regulations or court orders.*[5]

The Commission also asks where providers look to for guidance regarding Best Practices.[6] ATIS notes that there are a number of different organizations that provide guidance to the industry. For the development of ICT Best Practices, the ATIS NRSC and the Commission's Communications Security, Reliability, and Interoperability Council (CSRIC) are two primary resources. The NRSC has an active work program that updates existing and drafts new Best Practices to address emerging issues and examines existing Best Practices for possible improvement. This input is provided to the Commission for review and input.[7] The success of the industry efforts through the NRSC has been well-documented, with the Commission noting in other proceedings the effectiveness of the NRSC's work on issues such as reducing wireline

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[5] Final Report of the NRIC VII Focus Group 2A, Homeland Security Infrastructure (December 2005), Section 3.

[6] *NPRM* at ¶ 21.

[7] Letter from Thomas Goode, ATIS General Counsel, to Jeffrey Goldthorp (FCC), Chief, Communications Systems Analysis Division of the Public Safety and Homeland Security Bureau, transmitting NRSC Best Practices Task Force Recommendations (July 5, 2012).

outages and preventing failures of centralized automatic message accounting (CAMA) 9-1-1 trunks during mass call events.[8]

The industry also looks to standards development organizations such as ATIS and the Telecommunications Industry Association to develop standards and technical reports that provide more detailed information on solutions to technical issues. ATIS, for example, is a leading developer of standards related to network interoperability, reliability and emergency services, including standards related to the deployment of network services to support 9-1-1. Other organizations, such as the National Emergency Number Association and Association of Public-Safety Communications Officials, provide guidance specific to public safety agencies or to the interconnection of networks to public safety answering points (PSAPs). There are also other organizations, such as CTIA- The Wireless Association, that provide informational resources used by the industry that support reliable and robust communications.[9]

B. A Common Definition of 9-1-1 Service Provider Should Be Adopted

Another topic on which the Commission seeks input is the appropriate class of entities that should be subject to any new rules that may be adopted in this proceeding and, in particular, how to define "9-1-1 service provider."[10] The ATIS NRSC supports the development of a common definition of a "9-1-1 service provider" that recognizes that the relevant part of the network that is being addressed in this proceeding is the final leg into the PSAP, commonly

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[8] *See e.g.*, The Proposed Extension of Part 4 of the Commission's Rules Regarding Outage Reporting to Interconnected Voice Over Internet Protocol Service Providers and Broadband Internet Service Providers, PS Docket No. 11-82, *Report and Order* at ¶15 (rel.: February 21, 2012); *Derecho Report* at p. 3.

[9] The CTIA – The Wireless Association Business Continuity/Disaster Recovery Program, for example, provides an annual certification program for wireless carriers that have met planning standards and objectives necessary to ensure that they have prioritized service continuity and disaster recovery.

[10] *NPRM* at ¶23.

known as the Selective Router. This common definition should be exclusively limited to the provider from whom the PSAP purchases services.

C. A Collaborative Approach Should Be Considered for the Implementation of Any Recommendations

A key issue on which input is being sought in the *NPRM* regards possible approaches to the implementation of the Derecho Report's recommendations. The Commission seeks comment on four such possible approaches: (1) reporting; (2) certification; (3) reliability requirements; and (4) compliance reviews and inspections.[11] The NRSC has considered these options and recommends that the industry be engaged in developing the optimal implementation approach. The NRSC would be very interested in participating in this process and, as explained above, it has a successful track record of working collaboratively with the FCC to address the significant challenges facing the industry and to clearly identify implementation options that are technically feasible and effective.[12]

D. Specific *Derecho Report* Recommendations

The Commission also solicits input on the specific recommendations made by the PSHSB in its *Derecho Report* regarding: (1) routine 9-1-1 circuit auditing; (2) sufficient backup power at central offices; (3) robust network monitoring capabilities; and (4) improved PSAP notification.[13] While individual ATIS NRSC members will likely provide more detailed input regarding each of

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[11] *NPRM* at ¶¶24-31.

[12] For example, the NRSC has collaborated effectively with the Commission to improve the Commission's NORS and Disaster Information Reporting System (DIRS).

[13] *NPRM* at ¶32 *et seq*.

these proposals based on their own technical and business considerations, ATIS provides the following high-level input below.

1. 911 Circuit Auditing

One of the recommendations in the *Derecho Report* concerned regulatory scheduled-auditing by service providers of 9-1-1 circuits and the identification of avoidable single points of failure in their networks.[14] ATIS notes that communication providers do recognize the importance of maintaining 9-1-1 circuit availability and have appropriate processes in place to meet established commitments to PSAPs. ATIS, however, does not believe that prescriptive requirements are necessary regarding circuit auditing.

To the extent that the Commission moves forward with annual reporting obligations, ATIS recommends that such information be considered confidential. As with outage reports, audit reports may contain sensitive information that could be used by hostile parties to attack communications networks, thereby presenting an "unacceptable risk of more effective terrorist activity."[15] For this same reason, ATIS would not support the sharing of audit information with states unless appropriate safeguards are in place. ATIS has previously provided its recommendations regarding such safeguards in response to the *Petition for Rulemaking* filed by the California Public Utilities Commission and the People of the State of California (*CA PUC Petition*), which sought direct access to NORS.[16]

2. Backup Power at Central Offices

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[14] *Derecho Report*, Section 7.1.

[15] In the Matter of New Part 4 of the Commission's Rules Concerning Disruptions to Communications, *Report and Order and Further Notice of Proposed Rulemaking*, ET Docket No. 04-35 (rel. August 4, 2004) at ¶3.

[16] *See* ATIS Comments and Reply Comment to CA PUC Petition (filed March 4, 2010, and March 19, 2010, respectively) in ET Docket No. 04-25, RM-11588.

The *Derecho Report* also included a PSHSB recommendation that the Commission take action to ensure that central offices have sufficient backup power.[17] ATIS notes that 9-1-1 service providers recognize the importance of backup power for central offices, as well as maintenance and testing of this capability, and understand the need to review current backup power processes and procedures. ATIS recommends that 9-1-1 service providers be afforded the flexibility to administer backup power policies as appropriate to their individual networks and to accommodate any site-specific issues (*e.g.*, space constraints, floor loading, heating, ventilation, and cooling, etc.). ATIS believes that service providers, not the Commission, are in the best position to evaluate these factors and make decisions regarding backup power. ATIS also recommends that any backup power requirements not require service providers to file reports regarding backup power schemes, or to provide backup power for a specific amount of time.[18]

3. Network Monitoring Capabilities

The third set of recommendations made by the PSHSB in its *Derecho Report* concerned the need for diverse monitor and control links.[19] The NRSC agrees that regional aggregation points and the diversity of facilities that give companies visibility to their Network Operations Centers (NOCs) is important to communication reliability. The NRSC recommends that providers retain the flexibility to implement diversity and the migration of telemetry to the IP network as appropriate for their network evolution, management, and monitoring.

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[17] *Derecho Report*, Section 7.1.

[18] Any backup power obligation will not be a panacea that will make network more resilient to all disasters. As the Commission has noted previously, even if an carrier has taken reasonable precautions to remain functional during an emergency, "the extreme or unprecedented nature of the emergency may render the carrier inoperable despite any precautions taken, including battery back-up and plans to reroute traffic." In the Matter of Federal-State Joint Board on Universal Service, CC Docket No. 96-45, Report and Order (rel. Mar. 17, 2005), at ¶ 26.

[19] *Derecho Report*, Section 7.1.

4. PSAP Notification

The final set of recommendations in the *Derecho Report* suggested that the Commission provide greater specificity with regards to the obligations of service providers to notify PSAPs of outages affecting 9-1-1 service.[20] The ATIS NRSC agrees that communication with PSAPs during an outage event is important and would suggest that the industry be involved in developing more consistent notification criteria. The NRSC believes such criteria should afford 9-1-1 service providers the flexibility to work with individual PSAPs to determine the optimal communications process for that PSAP. This process would allow PSAPs to provide input regarding the timing, information contained in, and the means by which they would like to receive an outage notification. For example, the NRSC notes that many PSAPs prefer voice communications for notifications over electronic notification methods (*i.e.*, email) and, in some cases, may not have the capability to accept electronic notifications. Communication providers need flexibility to work with PSAPs to ensure efficient and timely communications occur in a manner that aligns with their preferences and needs. Another example of where flexibility would be beneficial is in the event that two or more PSAP failures were to occur simultaneously. In such cases, 9-1-1 service providers should have flexibility to use multiple forms of communication; this may include sending an email and/or calling to invite multiple affected PSAPs to a conference bridge. This will ensure that the impacted PSAPs receive consistent and timely information while minimizing confusion. The Commission should also consider that some PSAPs may not want to receive these types of notifications and should provide an opt-out

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[20] *Id.*

mechanism to accommodate these PSAPs. 9-1-1 service providers should not be responsible for providing notifications to PSAPs that opt out of receiving this type of notification.

The NRSC believes that the most beneficial action the Commission could take to make communication more efficient between 9-1-1 services providers and PSAPs would be to establish a list of PSAPs that specifies individual PSAP contact information, including an official that has been designated as a contact by the management of each 9-1-1 facility. Such a list would also reduce the burden on multiple 9-1-1 service providers and PSAPs, and avoid duplicative efforts to identify appropriate contacts and facilitate communications during an event.

The NRSC also recommends that the Commission take into consideration that some service providers may not have visibility into the status of the PSAP. Additionally, it is important for the Commission to recognize that a PSAP may not have an administrative presence on a full-time (24/7) basis. 9-1-1 service providers should also have flexibility in determining specific information that is desired or needed by the individual PSAPs.

E. The Commission Should Not Underestimate the Costs of *Derecho Report* Recommendations

Finally, ATIS notes that the Commission includes cost estimates related to implementation of each of the four *Derecho Report* recommendations.[21] While ATIS acknowledges the challenges associated with estimating costs for proposed regulatory obligations, ATIS believes that the estimated costs grossly underestimate the burden to the industry associated with the proposed recommendations. In particular, ATIS believes that the

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[21] *NPRM* at¶¶41-43, 50-58, 65-66, 74.

real-world network and labor costs associated with implementation of the recommendations would be significantly higher than has been estimated by the Commission in the *NPRM*.

ATIS believes that the Commission should consider its experience in estimating the costs associated with the network outage reporting rules when calculating the costs of potential new rules. When the Commission adopted new outage reporting rules in 2004, its estimates of the burdens of the new reporting rules[22] turned out to be highly inaccurate, as real-world experiences demonstrated that the burden of the outage reporting rules to each service provider was many times greater than the total burden estimated for the entire industry.[23] ATIS therefore recommends that the Commission closely evaluate the estimated costs to ensure that it can properly balance the burdens of any new rules against their purported benefits.

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[22] In the Matter of New Part 4 of the Commission's Rules Concerning Disruptions to Communications, ET Docket 04-35, *Report and Order and Further Notice of Proposed Rulemaking* (rel. August 19, 2004), Appendix D at ¶24. (*Part 4 Expansion Report and Order*)

[23] In the *Part 4 Expansion Report and Order*, the Commission estimated that the total number of outage reports from all reporting sources combined would be substantially less than 1,000 annually, the estimated total time needed to file all pertinent reports would be significantly less than 5 hours, the total annual burden would be 1,040 hours, and the total annual costs associated with outage reporting submissions would be $41,600, In reality, the number of reports filed under the rules turned out to be many times more than the Commission's estimate and each report took substantially more time to research, compile data, and complete. As a result, the Commission's estimated burden to the industry was a mere fraction of the actual burden. *See* Letter from Thomas Goode, ATIS General Counsel, to Paul de Sa, Chief of the Commission's Office of Strategic Planning and Policy Analysis (September 23, 2009).

III. Conclusion

ATIS appreciates the opportunity to provide input in regard to the *NPRM* and the recommendations in the *Derecho Report*.

Respectfully submitted,

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