Response to NCST Advisory Committee's 2017 Report to Congress

Aug 30, 2018
NCST Advisory
Committee Meeting

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Background Material on NCST Investigations

- The National Construction Safety Team (NCST) Act (15 U.S.C. 7301(a)) authorizes the Director of NIST to:
  - establish Teams for deployment after events causing the ***failure of a building or buildings that has resulted in substantial loss of life or that posed significant potential for substantial loss of life***.

- Under the NCST Act (15 U.S.C. 7301(b)(2)), established Teams shall:
  (A) establish the likely technical cause or causes of the building failure,
  (B) evaluate the technical aspects of evacuation and emergency response procedures,
  (C) recommend, as necessary, specific improvements to building standards, codes, and practices based on the findings made pursuant to (A) and (B), and
  (D) recommend any research and other appropriate actions needed to improve the structural safety of buildings, and improve evacuation and emergency response procedures, based on the findings of the investigation

Background Material on NCST Investigations

- Under the NCST Act (15 U.S.C. 7301 (b)(1)), the **purpose** of the investigations is to improve the safety and structural integrity of buildings in the United States.
- Under the NCST Act implementing regulations (15 CFR 270.100(c)), the number of **fatalities considered to be "substantial"** will depend on:
  - the nature of the event,
  - the event's impact,
  - the event's unusual or unforeseen character,
  - historical norms, and
  - other pertinent factors.
- Under the NCST Act implementing regulations (15 CFR 270.100(b)), **building failure** may involve one or more of the following:
  - structural system,
  - fire protection (active or passive) system,
  - air-handling system, and
  - building control system.

Background Material on NCST AC

- In accordance with 15 U.S.C. 7310 (a) and restated in the NCST Advisory Committee Charter, the NCST Advisory Committee shall:
  - advise the NIST Director on carrying out the NCST Act, and
  - review the procedures developed under Section 2 (c)(1) of the Act, for the establishment and deployment of Teams, and
  - review the reports issued as a result of an NCST investigation.

- In accordance with 15 U.S.C. 7310 (b), on January 1 of each year the Advisory Committee shall transmit to the Committee on Science of the House of Representatives and to the Committee on Commerce, Science, and Transportation of the Senate a report that includes:
  - an evaluation of Team activities, along with recommendations to improve the operation and effectiveness of Teams, and
  - an assessment of the implementation of the recommendations of Teams and of the advisory committee.

Background Material on NCST AC

- Based on the NCST Advisory Committee Charter (2016), the NCST Advisory Committee shall:
  - meet at least once per year,
  - hold additional meetings, as requested by the NIST Director or the DFO
  - meet in person, in the form of telephone conference calls and/or videoconferences.

- Based on the NCST Advisory Committee Charter (2016), NIST may establish subcommittees from among the NCST AC members, as may be necessary:
  - subject to the provisions of FACA (Federal Advisory Committee Act), and its implementing regulations, and applicable Department of Commerce guidance., and
  - whom must report back to the parent committee, and must not provide advice and work products directly to the agency.

NIST Response to 2017 NCST AC Report to Congress

Recommendation	Response
1. NCST Investigation Funds We commend the approach of the Director of the Engineering Laboratory in prioritizing these investigations, but that prioritization is not assured under future leadership. One solution to a part of the problem would be to have specific funds allocated to investigations when disasters are declared.	Immediately following the NIST Director's establishment of an NCST Team for Hurricane Maria, significant resources were provided, with contributions from NIST, Laboratory, and Division accounts. Additional resources have been budgeted for future years of the Investigation that fully fund plans for the Investigation. The concept of dedicated reserve funds remains under evaluation.

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Recommendation	Response
2. Economic and Design Factors The Committee applauds the on-going efforts and results of the NCST in this investigation. It counsels, however, that while NIST should maintain their involvement in the codes and standards process, they need to carefully balance their position as the country's technical advisor with an understanding and appreciation of the economic and design factors that may be involved.	As an agency of the Department of Commerce, NIST has a strong responsibility to ensure that our research has feasible applications in the design and construction industries. We also agree that an appreciation of economic factors of our research and science is crucial for future adoption by industry. In past NCST investigations, NIST has performed cost benefit analyses of some recommendations. In the current investigation, we can specifically request that design and economic feasibility be considered in the public comment period for the final report. Additionally, we are addressing the important topic of economic feasibility of recommendations in the current Hurricane Maria NCST Investigation by including an economist in the Team from the onset of the investigation.

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Recommendation	Response
3. Further Studies of Emergency Communications Building on the success in understanding alerts, messaging, and people movement in Joplin, we recommend that NIST further study communication of alerts and warning during imminent threats. We recommend, as part of their investigations of these hurricanes, additional analysis of the presence or absence of communicator strategies to reach populations at risk, including the mechanisms and technology to help decision making about protective actions such as evacuation and sheltering.	NIST has studied alerts, messaging, and people movement in all three prior NCST investigations: World Trade Center, Rhode Island Nightclub Fire, and Joplin Tornado. NIST will investigate the role of emergency communications in public response for those under imminent threat from Hurricane Maria, as part of the current NCST investigation of Hurricane Maria. This project also aims to investigate the use of communications in disaster response (during and immediately after the hurricane event).

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Recommendation	Response
4. Economic Analysis of Recommendations We recommend that, in addition to the technical findings and recommendations from these emergencies, NIST should spend more effort looking at the cost and benefit of implementing their recommendations. The past and current recommendations are not consistently supported by sufficient economic analysis. For example, the Joplin recommendations conclude that "critical buildings and infrastructure such as hospitals and emergency operation centers are designed to remain operational in the event of a tornado." Wind loads from tornados greatly exceed current design wind loads, so a recommendation like this should include the benefits and cost impact to construction of these facilities in tornado-prone regions.	As an agency of the Department of Commerce, NIST has a strong responsibility to ensure that our NCST investigations' recommendations are economically feasible. In past NCST investigations, NIST has performed cost benefit analyses of some recommendations. In the current investigation, we can specifically request that economic feasibility be considered in the public comment period for the final report. Additionally, we are addressing the important topic of economic feasibility of recommendations in the current Hurricane Maria NCST Investigation by including an economist in the Team from the onset of the investigation.

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Recommendation	Response
5. Social and Behavioral Science We recognize and applaud the activities of NIST social and behavioral scientists to develop technical and scientific knowledge about risk. This is currently being translated into hazard maps and damage indicators. We recommend that NIST continue the effort, with consistent attention given to portraying such information in appropriate scientific terms as well as terms that can be understood by community officials and the general public. This will help reach and affect the decision making of vulnerable populations.	We strongly agree that the inclusion of social and behavioral scientists is important to NCST investigations and resulting risk communication recommendations. NIST continues to value the contributions of social and behavioral scientists in developing scientific knowledge about risk. We have, therefore, included three social and behavioral scientists in the Team for the Hurricane Maria NCST Investigation. We will continue to be mindful that appropriate scientific terms—that can be understood by community officials and the general public—be used in translating knowledge about risk in briefings, documents, and recommendations.

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Questions?

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