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HOSPITAL BUILDING SAFETY BOARD Instrumentation Committee

**Thursday, October 29, 2024
10:00 a.m. – 4:00 p.m.**

Locations:

2020 West El Camino Ave, Conference Room 930, Sacramento, CA 95833
355 South Grand Avenue, Conference Room 2000, Los Angeles, CA 90071
Teams Meeting Access; Meeting ID: 281 904 909 114; Passcode: NsU6eA
Call in: (916) 535-0978; Phone Conference ID: 137 966 432 #

Committee Members Present

Farzad Naeim, Committee Chair
Jim Malley, Vice Chair
Martin Hudson
Courtney Johnson
Jennifer Thornburg

Consulting Members Present

Hamid Haddadi
Moh Huang
Tony Shakal

Ex-Officio Member Present

Jeremy Lancaster

HCAI Staff Present

Arash Altoontash
Hussain Bhatia
Erol Kalkan
Roy Lobo
Ali Sumer
Andia Farzaneh

HBSB Staff Present

Veronica Yuke, Executive Director
Marcus Palmer
Evelt Torres

- 1 **1. Call to Order and Welcome**
- 2 **Facilitator:** Farzad Naeim, PhD, SE, Esq, NAE, President, Farzad Naeim, Inc.;
- 3 Committee Chair
- 4 Farzad Naeim noted initial technical issues affecting audio clarity and formally called the
- 5 meeting to order at 10:04 a.m.

2. Roll Call and Meeting Advisories/Expectations

Facilitator: Veronica Yuke, Manager, HCAI; Executive Director

Veronica Yuke conducted the roll call, confirming a quorum, and outlined meeting expectations and rules of engagement for both in-person and virtual attendees.

3. Discussion on issues related to enhancing instrumentation to health monitoring, and status of publication and distribution of the Seismic Instrumentation of Healthcare Facilities White Paper

Facilitator: Farzad Naeim

Farzad Naeim opened the discussion by expressing concern over the limited promotion and distribution of the recently approved white paper on seismic instrumentation. He emphasized the need to raise awareness and expand its usage and invited committee members to propose ideas to improve visibility.

Discussion:

- Jim Malley recommended that the Education and Outreach Committee could organize a webinar focused on the white paper. He explained that a webinar would be an effective method for disseminating the document to a broader audience, particularly targeting hospitals and engineers who would benefit from its insights. He highlighted that such an event could enhance understanding of seismic monitoring and its relevance.
- Roy Lobo supported Jim Malley's proposal, emphasizing the importance of educating hospital owners and stakeholders on the benefits of seismic instrumentation and structural health monitoring. He agreed that the white paper could serve as a valuable educational tool if properly promoted.
- Martin Hudson suggested expanding the reach of the white paper by collaborating with external organizations, such as the Structural Engineers Association of California (SEAOC). He noted that SEAOC and similar organizations could help extend the impact of the white paper through their networks. Farzad Naeim proposed involving academic institutions as additional channels to publicize the webinar, suggesting that educational outreach could broaden engagement and encourage interest in the white paper.
- Jennifer Thornburg advocated that the Instrumentation Committee itself should lead the webinar initiative, instead of relying solely on the Education and Outreach Committee. She expressed concern that the Education and Outreach Committee might be too occupied with other responsibilities and suggested that the Instrumentation Committee take ownership to ensure progress. Farzad Naeim agreed with Jennifer Thornburg's suggestion and proposed forming a subcommittee, comprised of members from both the Instrumentation,

1 and the Education and Outreach Committees, to oversee the organization and
2 implementation of the webinar. This subcommittee would focus on planning
3 details, scheduling, and identifying potential presenters.

- 4 • Jim Malley offered to present this subcommittee proposal at the upcoming
5 December HBSB Full Board meeting to seek formal approval. He agreed that this
6 approach would streamline efforts and maximize resources by involving
7 interested parties from both committees.

8 **Action:**

- 9 • The committee reached an informal consensus to establish a subcommittee that
10 would take responsibility for organizing and promoting a webinar focused on the
11 white paper.
- 12 • Jim Malley committed to presenting the subcommittee proposal at the December
13 HBSB Full Board meeting for formal approval. Once approved, the subcommittee
14 will work on finalizing the webinar details, including selecting presenters and
15 scheduling dates.

16 17 **4. Review of the Fiscal Year 2023-24 HCAI/CSMIP Hospital Instrumentation** 18 **Annual Report by the California Strong Motion Instrumentation Program (CSMIP)**

19 **Facilitator:** Hamid Haddadi, PhD GP, Program Manager, California Strong Motion
20 Instrumentation Program, California Geological Survey; Consulting Member

21 Hamid Haddadi provided a detailed presentation of the Annual Report, covering the
22 progress and status of three types of hospital instrumentation projects under the
23 California Strong Motion Instrumentation Program (CSMIP):

- 24 • Type 1 (HCAI-Funded Regular Instrumentation): Hamid Haddadi highlighted
25 HCAI-funded hospitals where regular instrumentation was either underway or
26 completed.
- 27 • Type 2 (Owner-Funded New Hospital Instrumentation): He reviewed the list of
28 hospitals where new instrumentation projects, funded by hospital owners, were
29 progressing with technical assistance from CSMIP.
- 30 • Type 3 (Owner-Funded Retrofitted Instrumentation): Hamid Haddadi explained
31 that retrofitted projects required owner funding, and these projects, though fewer
32 in number, also received technical guidance from CSMIP.

33 Hamid Haddadi further discussed completed instrumentation upgrades, highlighting the
34 addition of modern, real-time data systems at 20 hospitals. He specifically mentioned
35 that two hospitals, Santa Rosa Memorial and Lancaster Antelope Valley, were now
36 equipped with real-time data acquisition systems, allowing faster data collection and
37 reducing delays in post-earthquake response.

1 **Discussion:**

- 2 • Martin Hudson raised a question regarding a recent case study of two hospitals
3 in Ventura County, each of which recorded different ground accelerations during
4 an earthquake due to differing foundations and ground conditions. He suggested
5 that this data could serve as an interesting study for the seismic community and
6 potentially be the subject of a white paper or further research. Hamid Haddadi
7 acknowledged Martin Hudson's suggestion, affirming the value of the
8 comparative data from the Ventura hospitals. He agreed that this case provided
9 valuable insights and could prompt further study on soil-structure interaction and
10 seismic response variability in similar conditions.
- 11 • Erol Kalkan posed a question about the different data acquisition methods
12 CSMIP uses, specifically comparing centralized data processing (where data is
13 streamed to a central data center) versus on-site processing. He highlighted the
14 potential risks of relying solely on centralized data, particularly in large seismic
15 events when communication lines could be disrupted. Erol Kalkan also inquired
16 about the feasibility of using satellite technology, like Starlink, to secure data
17 transfer during emergencies. Hamid Haddadi addressed Erol Kalkan's concerns,
18 explaining that while centralized data processing offers efficiency in data
19 handling, on-site processing remains a viable alternative. He also elaborated on
20 the use of Antelope software, which allows CSMIP to initiate real-time data
21 streaming and acquisition as needed. Regarding satellite technology,
22 Hamid Haddadi expressed openness to exploring options like Starlink if budget
23 and technical constraints allowed.

24 **Action:**

- 25 • The committee informally recognized the potential of using the Ventura County
26 hospital data for a case study or white paper, as suggested by Martin Hudson.
- 27 • Hamid Haddadi and Erol Kalkan discussed the possibility of exploring satellite
28 technology for data streaming as a future enhancement to existing infrastructure.

30 **5. Annual Update to the Committee on CSMIP**

31 **Facilitator:** Erol Kalkan, Senior Seismologist, HCAI

32 Erol Kalkan provided an update on recent advances in the CSMIP, reiterating the critical
33 role of the program in supporting the Instrumentation Committee's goals. He discussed
34 the progress toward enhancing data collection and noted that CSMIP is expanding its
35 ground station network across California.

36 He also informed the committee about future objectives to improve real-time earthquake
37 response, including plans for automated data streaming to HCAI from hospitals.

Erol Kalkan praised Hamid Haddadi's efforts to improve infrastructure, enabling faster data transfers and minimizing communication issues during emergencies.

Discussion:

- Erol Kalkan praised Hamid Haddadi and the CSMIP team for their dedicated work on upgrading infrastructure and data communication systems. He noted that these upgrades allowed for quicker data transfer, minimized communication delays, and greatly enhanced data reliability, especially during emergencies.
- Committee members, including Farzad Naeim and Jim Malley, commended Erol Kalkan and the CSMIP team for their progress. They expressed their appreciation for the efforts in advancing the program's technical capabilities, which they recognized as critical to supporting the committee's overall objectives for seismic monitoring and structural health.

6. Status of Committee activities, and planning tasks and objectives for 2025 and beyond

Facilitator: Farzad Naeim

Farzad Naeim led a discussion on strategic planning for 2025 and future objectives for the committee. Members discussed building upon the current year's advancements in seismic monitoring and continuing to develop outreach efforts. Farzad Naeim highlighted the importance of continued collaboration with external organizations to extend the impact of the committee's work.

Discussion:

- Jennifer Thornburg suggested expanding the committee's outreach efforts by exploring new platforms and partnerships. She noted that increasing public awareness around the importance of structural health monitoring and earthquake preparedness could amplify the committee's impact. Thornburg proposed considering collaboration with external organizations and leveraging digital platforms to reach a broader audience, especially those in healthcare and engineering sectors.
- Martin Hudson supported the focus on outreach and proposed that the committee consider issuing periodic white papers or case studies based on seismic data collected from instrumented hospitals. He suggested that this type of publication could not only inform stakeholders but also attract the interest of researchers who could further investigate notable seismic events or trends identified in the data.
- Jim Malley endorsed the idea of expanding outreach and suggested exploring collaborations with additional public and private institutions. He recommended

1 that the committee look into potential partnerships that could provide resources
2 and help advance the committee's goals in 2025 and beyond.

3 **Action:**

- 4 • The committee members reached an informal consensus on the importance of
5 increasing outreach and public engagement in 2025. They agreed to prioritize
6 efforts to promote structural health monitoring and seismic instrumentation
7 awareness through various means, including potential partnerships and digital
8 platforms.
- 9 • The committee members discussed the potential value of publishing white
10 papers or case studies on specific seismic events and data collected from
11 instrumented hospitals. While no formal action was taken, this idea was widely
12 supported and noted as a potential future initiative.

13
14 **7. Comments from the Public/Committee Members on Issues not on this Agenda**

15 **Facilitator:** Farzad Naeim

16 **Discussion:**

- 17 • Jennifer Thornburg reinforced her earlier suggestion about the committee's
18 outreach strategy. She reiterated the importance of broadening the committee's
19 visibility, particularly among healthcare institutions and the engineering
20 community, to further promote the committee's objectives on seismic monitoring
21 and health monitoring in hospitals.
- 22 • Jim Malley echoed support for the committee's continued collaboration with other
23 professional and educational organizations. He encouraged ongoing dialogue
24 with external partners to increase the impact of the committee's initiatives and
25 leverage external expertise.
- 26 • Martin Hudson suggested considering an agenda item for future meetings to
27 discuss specific case studies or seismic events as they relate to the committee's
28 work. He proposed that ongoing discussions about real-time data collection and
29 practical applications of seismic monitoring could benefit from concrete examples
30 drawn from recent events.

31
32 **8. Adjournment**

33 Farzad Naeim concluded with a confirmation of follow-up tasks for the December Full
34 Board meeting, primarily regarding the approval of the subcommittee for the planned
35 webinar, and adjourned the meeting at approximately at 12:00 p.m.