

OSHPD Office of Statewide Health Planning and Development



Hospital Building Safety Board

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**HOSPITAL BUILDING SAFETY BOARD
Structural and Non-Structural Regulations Committee**

**Tuesday, February 10, 2015
10:00 a.m. - 4:00 p.m.**

Office of Statewide Health Planning and Development
400 R Street, Suite 452
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and

Metropolitan Water District Headquarters
700 N. Alameda Street, Suite 2-546
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Committee Members Present

Henry Huang, Chair
Trailer Martin, Vice-Chair
John Egan
Rami Elhassan
Scott Karpinen
Simin Naaseh
Michael O'Connor

HBSB Staff

Linda Janssen, Executive Director
Evelt Torres

OSHPD Staff

Bob David, OSHPD Director
Paul Coleman, FDD Deputy Director
Hussain Bhatia
Glenn Gall
Mohammad Karim
Jacob Knapp
Roy Lobo
Ali Sumer
Chris Tokas
Elizabeth Wied

1 **1. Welcome and Introductions**

2 Committee Chair Henry Huang opened the meeting and invited the committee, OSHPD
3 staff, and members of the public to introduce themselves.

4

5 **2. Review of OSHPD structural amendments for the California Building Standards**
6 **Code, 2016 (CBSC 2016)**

7

8 Dr. Karim gave a presentation on the structural amendments for CBSC 2016. He began
9 with a review of the new Structural Performance Category (SPC)-4D program.

10

- 11 • Within Part 1 of the California Administrative Code (CAC), OSHPD is adopting
12 Chapters 6 and 7. Chapter 7: Administrative Provisions, will be addressed in
13 another committee. This committee's focus will be limited to structural amendments
14 in Chapter 6.
- 15 • For the 2016 CAC, OSHPD is introducing a new structural performance category:
16 SPC-4D for Nonconforming Buildings. The new category allows nonconforming
17 buildings to be upgraded to SPC-4D instead of SPC-5.
- 18 • The second substantial item was the adoption of the 2015 International Building
19 Code (IBC 2015).
- 20 • Dr. Karim discussed the code amendment process (including CBSC requirements
21 and OSHPD policy on code adoption) and schedule (the 2015 triennial code
22 adoption cycle).

23

24 Dr. Karim gave the specifics of SPC-4D.

- 1 • Nonconforming buildings were originally built to pre-1973 code. They can be
2 upgraded to SPC-4D instead of SPC-5, which enables them to provide service
3 beyond 2030.
- 4 • Currently there are about 800 SPC-4 buildings, about 500 of which were built before
5 1980. Dr. Karim provided details on them.
- 6 • Dr Karim defined SPC-4D: A performance category equivalent to buildings meeting
7 the minimum prescriptive requirements of the 1980 CBC.
- 8 • He defined damage control structural performance: A performance category at a
9 midway point between Life Safety SPC-2 and Immediate Occupancy SPC-5.
- 10 • He showed progress in seismic compliance between 2001 and 2015. The number
11 of SPC-1 buildings decreased from 39% to 11%.
- 12 • He reviewed the intent of SB 1953 – it is to encourage structural and nonstructural
13 retrofits and replacement of general acute care hospitals. He also reviewed
14 OSHPD’s statutory authority.
- 15 • He reviewed the definitions of SPC-1 through SPC-5 buildings. No existing building
16 can be upgraded to SPC-3 or SPC-4, building is those categories have some known
17 deficiencies. Buildings must be upgrade to SPC-4D or SPC-5.
- 18 • Performance expectations for SPC-4D buildings are that they control damage after
19 an earthquake to permit return to function similar to SPC-3 or SPC-4 buildings.
- 20 • He explained what is happening at the national level in the seismic evaluation and
21 retrofit standards.
- 22 • Dr. Karim showed the expected building types for SPC-2 buildings in 2020.
- 23 • No seismic evaluation checklist will be required to change SPC-1/SPC-2 buildings to
24 SPC-4D. Proof of performance consistent with SPC-4D will be required.

- 1 • Dr. Karim explained the performance objectives for use in American Society of Civil
2 Engineers (ASCE) 41 for compliance with International Building Code-level seismic
3 forces for existing buildings.
- 4 • He listed the requirements for SPC-4D construction documents.
- 5 • He showed short-period design accelerations in Northern and Southern California
6 cities for 2001, 2010, and 2013.

7

8 Mr. Egan asked if the SPC-4D category refers back to the 1980 CBC ground motion
9 levels, or would OSHPD require hospitals to use 75% of the current code ground
10 motions. Dr. Karim replied that SPC-4D upgrade using the 980 CBC option could simply
11 comply with the 1980 CBC ground motion requirements with no exception, more or less.

12

13 Mr. Huang commented on the relevancy of the Northern and Southern California charts,
14 as the buildings were categorized before 2000. Dr. Karim responded that one can
15 choose from two approaches: use the 1980 CBC, or use ASCE 41.

16

- 17 • Dr. Karim continued that there are 491 buildings in SDC-D versus 215 buildings in
18 SDC-F.
- 19 • He gave a summary of SPC-4D upgrade provisions.

20

21 **Discussion and Public Input**

22 In response to a question from Mr. Elhassan, Dr. Karim said that SPC-4D uses 100% of
23 current code ground motion, but lower acceptance criteria: it uses the Risk Category III
24 acceptance criteria instead of those for Risk Category IV.

1
2 Mr. Huang asked what ground motion would be used; Mr. Karim responded that it would
3 be same as ASCE 7.

4
5 Joe La Brie asked if an SPC-4D building would be able to provide utility services to a
6 conforming building. Dr. Karim replied that it would; an SPC-4D building would be
7 treated like any SPC-3 or higher buildings.

8
9 Ms. Naaseh asked about equivalency analysis between the two options (1980 CBC or
10 ASCE 41). Dr. Karim replied that they are looking at it.

11
12 Ms. Naaseh asked if OSHPD anticipated many takers for SPC-4D. Mr. Coleman stated
13 that there are a significant number of SPC-2 buildings that are one and two stories;
14 those appear to be the ones that would most benefit from this program.

15
16 Mr. Karpinen asked about nonstructural components. Dr. Karim stated that the
17 nonstructural side was addressed in SB 499. Mr. Bhatia added that the Nonstructural
18 Performance Category (NPC) part does not changed by the proposed amendments.
19 Even if buildings are upgraded to SPC-4D, they still need to meet NPC-2, NPC-3, and
20 closer to 2030, NPC-5. Mr. Lobo commented that for buildings upgrading to SPC-4D,
21 they need to plan their NPC retrofit as well.

22
23 Mr. Elhassan commented that the deadlines are not changing – SPC-1 buildings go out
24 of commission in 2020, but if they upgrade they go until 2030. Are there any

1 considerations that will allow owners more time to study, analyze, go to OSHPD, and do
2 construction? Mr. David stated that there would be no extensions. This program is a
3 big help to hospitals; they have known for a long time about the 2020 deadline.

4

5 Mr. Huang asked about the 45 SPC-4 buildings that have an “unknown” number of
6 stories. Mr. Bhatia responded that some buildings have an odd configuration where
7 they are partially underground. OSHPD has all the information for SPC-1 buildings but
8 there was no requirement for hospitals to give SPC-4 buildings information to OSHPD.

9

10 Mr. La Brie asked how soon the program could be implemented in the industry. Dr.
11 Karim responded that the California Building Standards Commission is supposed to
12 approve it in December 2015; as soon as that happens the program can be used.

13

14 **MOTION:** (M/S/C/) [Elhassan/Martin]

15 The committee voted unanimously to recommend that OSHPD move forward
16 with the SPC-4D category program.

17

18 (Ms. Wied noted that the committee should have taken Public Comment before voting.)

19

20 Dr. Karim resumed the presentation with an Overview of Amendments for CBC 2016.

21 He noted that he would only talk about structural technical changes.

- 22 • The 2016 Building Code is based on IBC 2015/ASCE 7-10. When most structural
23 engineers design a building, they are concerned about two things: demand in terms
24 of force or displacement the building will see in its lifetime, and capacity: how much

- 1 force or displacement the building can take. The engineers want the demand lower
2 than the capacity. In this code cycle, demand is not changing from CBC 2013.
- 3 • **AISC 360-10: Steel Design** is not changing, nor is **AISC 341-10/358-10: Seismic**
4 **Design of Steel**. The majority of OSHPD buildings are steel.
 - 5 • **ASCE 41-13: Seismic Evaluation and Retrofit of Existing Buildings** is new, as
6 are **ACI 318-14: Concrete Design** and **TMS-402/602-13: Masonry Design**.
 - 7 • The updated major reference standards are **ADM1-15: Aluminum Design**, **NDS-**
8 **15: Wood Design**, and **SDPWS-15: Seismic Design of Woods**.
 - 9 • There are no major changes in seismic hazard maps or steel design.
 - 10 • All Pre-Approvals for CBC 2013 can be used for CBC 2016.
 - 11 • The big change in the model code is that IBC 2015 removed existing structures –
12 Chapter 34 – from the scope.
 - 13 • OSHPD is proposing to keep CBC Chapter 34A, using IEBC 2015 Chapter 4 instead
14 of IBC 2012 Chapter 34 as the primary basis for Chapter 34A.
 - 15 • In CBC Chapter 34A, additions, alterations, and repairs are at a new building code
16 force level.
 - 17 • In IEBC 2015 (except Chapter 4), alterations and repairs are at 75% of the new
18 building code force level.
 - 19 • CBC 2016 Chapter 34A has three approaches that can be used for additions,
20 alterations, and repairs. They will be consistent with IEBC 2015, with modifications
21 required by OSHPD's statutory mandate. It will be about 20 pages in the CBC vs.
22 about 300 pages in the IEBC, with far fewer regulations to achieve the same goal.
 - 23 • Dr. Karim gave the reasons for not adopting IEBC 2015. Among the most important
24 was that it would greatly increase the complexity of regulations by creating a parallel

- 1 code to the CBC, and that much of the IEBC would have to be amended to meet the
2 statutory mandate.
- 3 • Dr. Karim compared the 2013 CBC Chapter 34A to the 2016 CEBC.
 - 4 • There are two substantial changes for special inspections: a testing agency
5 accredited to ISO 17025 shall be deemed to be an Approved Testing Agency, and
6 an inspection agency accredited to ISO 17020 shall be deemed to be an Approved
7 Inspection Agency.
 - 8 • In Chapter 16A, Structural Design, there is no major change between CBC 2013 and
9 CBC 2016.
 - 10 • Base isolated buildings in Seismic Design Category D can be designed by linear
11 procedure.
 - 12 • The biggest change for a long time in Chapter 17A: Special Inspections and Tests, is
13 that continuous special inspections during fabrication will not be required when
14 fabrication is approved by the building official.
 - 15 • Dr. Karim distinguished between *quality assurance* and *quality control*. The
16 definitions come from AISC 341. All of the perform function belongs to quality
17 control while some of the observe function belongs to quality assurance.
 - 18 • Requirements for the Certificate of Compliance that used to apply to Special Seismic
19 Certification only is expanded to seven different categories.
 - 20 • Dr. Karim explained the basis of the Special Inspection Exemption for the
21 fabricator's shop.
 - 22 • He explained the changes in the Special Seismic Certification requirements.
 - 23 • He listed the 24 components requiring Special Seismic Certification.

1 He clarified for an Interested Party that it applies to radiography and fluoroscopy
2 systems (including mammography) that are fixed and not mobile or temporary – for
3 the latter two are exempted.

4 • Appendix J: Grading will no longer be adopted; it was creating the perception that
5 entire site grading are in OSHPD jurisdiction. Provisions for earth retaining shoring
6 and vibro stone columns for ground improvement are being moved to Chapter 18A.
7 Mr. Coleman clarified OSHPD jurisdiction.

8 Mr. Huang asked if OSHPD puts its approval stamp on the grading plan when it
9 approves a project. Mr. Gall replied that typically it does not; if OSHPD does stamp
10 a site grading plan, it expressly writes what it is approving it for. Mr. Tokas added
11 that the stamp is based on a Code Application Notice that explain what is under
12 OSHPD jurisdiction.

13 • Also in Chapter 18A is the addition of Requirements of Underpinning for protection
14 of adjacent structures – a Model Code change. The same goes for the Provision for
15 Steel Sheet Piles shoring. Dr. Karim clarified for Ms. Naaseh that it applies to both
16 permanent and temporary shoring.

17 • ACI 318-14 is completely reorganized – a big improvement over the previous ACI
18 318 code.

19 • Allowable stress values for anchors were removed from the IBC/CBC. They were
20 not based on a cracked concrete test.

21 Mr. Karpinen asked if this affects shot pins; Mr. Bhatia answered that for a hairline
22 crack, with a shot pin you lose even more capacity.

23 • Dr. Karim explained the rebar testing and fusion welding requirements.

24 • Changes in TMS 402-13 are mostly in format rather than technical content.

- 1 • A major technical change in TMS 402 is in design requirements for partially grouted
2 shear walls: a 0.75 reduction in shear strength.
- 3 • There are very few changes in Chapter 22A.
- 4 • The reference standards in Chapter 23: Wood are new but the requirements are not.
- 5 • For Chapter 34A: Existing Structures, the number of amendments to ASCE 41 are
6 reduced from 36 to 15.

7

8 **Discussion and Public Input**

9 Michael Nearman of the Building Standards Commission stated that they had planned a
10 two-day meeting for the changes; Dr. Karim felt that amount of time would suffice.

11

12 Ms. Naaseh asked about the approving of the inspection agency. Dr. Karim explained
13 the change in the model code; it would prompt some training for the inspectors.

14

15 Mr. Karpinen asked about the seismic certification weight requirements for the control
16 panel components. Dr. Karim clarified that the 10-lb. weight requirement was for
17 individual devices.

18

19 Ms. Naaseh asked about inspectors working under the design professionals or
20 engineers. Mr. Coleman explained that the latter two direct the specific tests or
21 inspections that need to be performed. They also review and accept the qualifications
22 of the inspectors. If the inspectors have questions regarding interpretation or intent of
23 the documents or drawings, they go to the design professional rather than the
24 contractor.

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Mr. Karpinen asked about seismic certification – he suggested adding “terminal units” with hot water coils regarding the weight limits. Mr. Tokas said OSHPD would consider it.

An Interested Party asked about the Certificate of Compliance for nonstructural components. Was there any change from the 2013 provisions? Dr. Karim replied that if model code requires certification is required, then manufacturer must produce a piece of paper verifying code compliance. The Interested Party asked if an OSHPD Preapproval of Manufacturer's Certification (OPM) could be considered equivalent to the certification. Dr. Karim clarified that an OPM only approves the design, not the fabrication or construction.

The Interested Party also asked about the expansion of the Seismic Certification items, specifically #21, Internal communication servers and routers. Does the electrical industry have an equivalent requirement that they follow already? Mr. Tokas commented that telecom requirements using GR-63 must show equivalency to test using ICC-ES AC 156.

An Interested Party asked about special inspection of fabricated items: does OSHPD intend that to include equipment – are manufacturers required to pass special inspection on their fabrication? Dr. Karim replied that currently, if you have Special Seismic Certification, OSHPD does not require anything else.

1 The Interested Party pointed out that there is a substantial cost associated with Special
2 Seismic Certification for manufacturers that will carry over to the public.

3

4 Mr. O'Connor commented on the earlier radiography and fluoroscopy discussion: the
5 intent was more for the modality of the rooms, not so much the other diagnostic
6 equipment; that could be made clearer. The OSHPD staff agreed.

7

8 Mr. Huang asked about the approval process from this point forward. Dr. Karim
9 responded that if the committee is satisfied with the amendments, they can recommend
10 to the full Board that OSHPD bring them to the Building Standards Commission.

11

12 **MOTION:** (M/S/C/) [Martin/Elhassan]

13 The committee voted unanimously to recommend that OSHPD move forward
14 with the 2016 CBC amendments.

15

16 **3. Comments from the Public/Board Members on Issues not on this Agenda:**

17 Mr. Karpinen asked about discussion of the nonstructural changes. Dr. Karim answered
18 that OSHPD is not making any major changes to Chapter 16A – still adopting ASCE 7-
19 10. All the requirements that were in the last code will be in this code.

20

21 **4. Adjournment**

22 Mr. Huang adjourned the meeting at 12:21 p.m.