#### INITIAL STATEMENT OF REASONS FOR PROPOSED BUILDING STANDARDS OF THE DEPARTMENT OF HEALTH CARE ACCESS AND INFORMATION/ OFFICE OF STATEWIDE HOSPITAL PLANNING AND DEVELOPMENT REGARDING THE 2025 CALIFORNIA BUILDING CODE CALIFORNIA CODE OF REGULATIONS, TITLE 24, PART 2, VOLUME 2 (OSHPD 05/24)

The Administrative Procedure Act (APA) requires that an Initial Statement of Reasons be available to the public upon request when rulemaking action is being undertaken. The following information required by the APA pertains to this particular rulemaking action:

# STATEMENT OF SPECIFIC PURPOSE, PROBLEM, RATIONALE and BENEFITS

Government Code Section 11346.2(b)(1) requires a statement of specific purpose of each adoption, amendment, or repeal and the problem the agency intends to address and the rationale for the determination by the agency that each adoption, amendment, or repeal is reasonably necessary to carry out the purpose and address the problem for which it is proposed. The statement shall enumerate the benefits anticipated from the regulatory action, including the benefits or goals provided in the authorizing statute.

# **GENERAL INITIAL STATEMENT OF REASONS**

The California Department of Health Care Access and Information (HCAI), Office of Statewide Hospital Planning and Development (OSHPD) proposes to repeal the 2021 International Building Code, adopt the 2024 International Building Code, and carry forward existing amendments from the 2022 California Building Code, Part 2 of Title 24 California Code of Regulations. Specific repeal, adoption and amendments are listed below.

OSHPD was recast and transitioned to the Department of Health Care Access and Information (HCAI) in 2021. The Divisions within HCAI were changed to Offices and OSHPD was able to retain the acronym which will not change the Title 24 banners.

# ITEM 1 CHAPTER 2 DEFINITIONS

Adopt the 2024 International Building Code Chapter 2 for OSHPD 1, 1R, 2, 3, 4, 5 and 6. Carry forward existing amendments of the 2022 California Building Code for OSHPD 1, 1R, 2, 3, 4, and 5. See OSHPD's Part 2, Volume 1 Express Terms and ISOR for non-structural related amendments to Chapter 2 Definitions.

## Section 202 - DEFINITIONS

ACTIVE EARTHQUAKE FAULT. OSHPD banners corrected.

ALTERNATIVE SYSTEM. Section references corrected.

BASE. OSHPD banner and section reference corrected.

DISTANCE FROM AN ACTIVE EARTHQUAKE FAULT. OSHPD banners corrected.

**FREESTANDING ACUTE PSYCHIATRIC BUILDING (APB).** The definition of freestanding building is no longer in Part 1, so this definition is corrected.

**FREESTANDING BUILDING OR STRUCTURE.** Definition of freestanding building or structure is added, consistent with the definition of freestanding in the California Administrative code, since the term is used extensively in the California Building Code.

**FREESTANDING SKILLED NURSING BUILDING (SNB).** The definition of freestanding building is no longer in Part 1, so this definition is corrected.

**GENERAL ACUTE CARE BUILDING (GAC Building).** Clarity added to the definition based on the law.

**INCIDENTAL STRUCTURAL ALTERATIONS, ADDITIONS OR REPAIRS.** Added a pointer reference to the California Existing Building Code for this definition to avoid duplication.

**IRREGULAR STRUCTURE.** OSHPD banners corrected.

**MAJOR STRUCTURAL ALTERATIONS, ADDITIONS OR REPAIRS.** OSHPD banners corrected.

**MINOR STRUCTURAL ALTERATIONS, ADDITIONS OR REPAIRS.** OSHPD banners corrected.

**NEXT GENERATION ATTENUATION WEST 2 (NGAWEST 2).** This defined term is repealed as it is no longer used.

NPC 1, NPC 2, NPC 3/NPC 3R, NPC 4, NPC-4D and NPC 5. The definition is revised to match the OSHPD type of applicable building.

**OFF-SITE CONSTRUCTION.** Off-site construction added for use in Sections 1710 and 1710A.

**RETROFIT.** OSHPD banners corrected.

SIGNIFICANT LOSS OF FUNCTION. OSHPD banners corrected.

**SPECIAL INSPECTION.** Missing banner for the periodic special inspection is added.

**SURFACE MOUNTED COMPONENT.** OSHPD banner and section reference corrected.

# CAC Recommendation:

Approve all items except "*Off site construction*". The CAC recommended further study for "*Off site construction*". Based on Criteria 6, the CAC suggests editorial change to switch "which" to "that" and shorten the sentence by removing "to or destruction thereof".

# Agency Response:

Accept. "*Off site construction*" has been revised to replace "which" with "that" and the sentence is shortened by deleting "to or destruction thereof".

# ITEM 2 CHAPTER 14 EXTERIOR WALLS

Adopt the 2024 International Building Code Chapter 14 for OSHPD 1, 1R, 2, 3, 4, 5 and 6. Carry forward existing amendments of the 2022 California Building Code for OSHPD 1, 1R, 2, 4, and 5.

**Section 1404.1.2** – Amendment is updated to include all applicable sub-sections and to include relocated sections (model code reorganization relocated few sections from Chapter 26 to Section 1404.4). Section is renumbered to accommodate new model code Section 1404.1.1.

## **CAC Recommendation:**

Approve

## Agency Response:

Accept

Section 1413.1 and 1413.2 – Section is renumbered to align with reorganization of the model code.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 1413.2.1** – Section is revised to align language with TMS 402 Section 13.3.2.1 and require all mortar and veneer types to be tested. Test frequency for bond shear strength is corrected to wall area of adhered veneer from square footage of the building.

No material changes from the current requirements are intended.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 1413.2.2** – Section is revised to limit masonry veneers weight to 15 psf. consistent with current requirements. No material changes from current requirements are intended.

## **CAC Recommendation:**

Approve

# Agency Response:

Accept

#### ITEM 3 CHAPTER 15 ROOF ASSEMBLIES AND ROOFTOP STRUCTURES

Adopt the 2024 International Building Code Chapter 15 for OSHPD 1, 1R, 2, 3, 4, 5 and 6. Carry forward existing amendments of the 2022 California Building Code for OSHPD 1, 1R, 2, 4, and 5.

**Section 1511.10** – Section is editorially revised to plain language without making any material changes and appropriate CBC section is referenced.

Approve

#### Agency Response:

Accept

# ITEM 4 CHAPTER 16 STRUCTURAL DESIGN

Adopt the 2024 International Building Code Chapter 16 for OSHPD 1R, 2, 3, 5 and 6. Carry forward existing amendments of the 2022 California Building Code for OSHPD 1R, 2, and 5.

**Section 1601.1.1** – Editorial change to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD). Applicability of the section to various OSHPD types are clarified.

#### CAC Recommendation:

Approve

Agency Response:

Accept

Section 1601.1.2 – Editorial change for clarification.

#### **CAC** Recommendation:

Approve

#### Agency Response:

Accept

**Section 1601.1.3** – Editorial change to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD).

## CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1601.1.5** – Pointers to amendments in Chapter 16A which are applicable to OSHPD 1R, 2 and 5 buildings have been updated.

#### **CAC Recommendation:**

Approve

Agency Response:

Accept

**TABLE 1604.5** – Existing risk category assignment for Skilled Nursing Facilities (SNFs), Intermediate Care Facilities (ICFs) and Acute Psychiatric Facilities (APFs) are retained in-lieu of adopting new risk category in accordance with the IBC 2024. OSHPD

amends Risk Category IV stating OSHPD 2 & 5 are not adopted for Group I-2 occupancies. These occupancies are addressed in Table 1604.5A

## CAC Recommendation:

Approve

#### Agency Response:

Accept

**Table 1607.1** – Item # 39 is renumbered to align with model code re-organization. No material change intended.

## CAC Recommendation:

Approve

Agency Response:

Accept

**Section 1607.14.3.5** – This amendment is necessary for consistency with Section 1613.4 requiring ballasted photovoltaic panel systems to be considered as an alternative system.

# **CAC** Recommendation:

Approve

Agency Response:

Accept

**Section 1613.1** – Existing Exception # 6, which was intended to ensure minimum Seismic Design Category (SDC) D for all buildings, is deleted since new Figure 1613.2(1) assigns all buildings in California to SDC D or higher.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 1613.2** – Existing amendment for minimum Seismic Design Category as SDC D in Section 1613.2.5 is retained.

## CAC Recommendation:

Approve

## Agency Response:

Accept

Existing Sections 1613.2.1, 1613.2.5, 1613.2.5.1, 1613.2.5.2, and Tables 1613.2.3(1) & 1613.2.3(2) – Repeal OSHPD amendments to sections and tables that are repealed in the 2024 IBC. These deletions will not have any regulatory affects and no material change is intended.

Approve

#### Agency Response:

Accept

**Section 1613.7** – Existing Section 1613.4 is renumbered to align with model code reorganization. Model code added new sections which goes up to 1613.6 so next available number was 1613.7. Previously model code ended at section 1613.3, so this section was 1613.4.

## **CAC** Recommendation:

Approve

Agency Response:

Accept

# ITEM 5 CHAPTER 16A STRUCTURAL DESIGN

Adopt the 2024 International Building Code Chapter 16 as Chapter 16A of the 2025 CBC for OSHPD 1 and 4. Adopt only Section 1617A.1.18 for OSHPD 2 and 5. Carry forward existing amendments of the 2022 California Building Code.

**Sections 1601A.1.1 & 1601A.1.2** – Editorial change to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD).

## **CAC Recommendation:**

Approve

## Agency Response:

Accept

**Section 1604A.4** – Existing amendment requiring analysis to explicitly include consideration of stiffness of diaphragms is repealed since it is now addressed in ASCE 7-22 Section 12.10.4.2 where the stiffness of the diaphragm is included when calculating the diaphragm force.

## **CAC** Recommendation:

Approve

## Agency Response:

Accept

**Section 1605A.1.2** – Foundation resistance is separated from the stability Section 1605A.1.1 to clarify that factor of safety and resistance factors only apply to strength and not stability. Clarified that amplified load combinations in Section 1605A.1.2 should be used in lieu of load combinations with overstrength factor in ASCE 7. No material change is intended.

## CAC Recommendation:

Accept

**Existing Section 1605A.3.1** – Existing Section 1605A.3.1 is repealed since the alternative provided in ICC 300 is acceptable.

#### CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1605A.3.1** – Section is revised to comply with statutory mandate for use of plain language. Previous section 1605A.3.2 is revised to 1605A.3.1 since the existing section is repealed.

## CAC Recommendation:

Approve

#### Agency Response:

Disagree. Post CAC in discussion with DSA, some reference equation numbers have been updated to match the 2023 edition for ICC 300.

**Section 1607A.1** – Amendment in this section is deleted since revised model code section adequately addresses the requirements.

#### CAC Recommendation:

Approve

#### Agency Response:

Accept

**Table 1607A.1 –** Superscript "d" is added to Item # 20: Libraries, to fix an erratum. Item # 39 is renumbered to align with model code re-organization. No material change intended.

#### **CAC Recommendation:**

Approve

#### Agency Response:

Disagree. Post CAC, Item 20 superscript "d" was added to the IET, as it was not previously included in the IET, but was included in the ISOR when submitted to the CAC.

**Section 1607A.14.3.5** –Formerly Section 1607A.14.4.5, This amendment requiring ballasted photovoltaic panel systems to be considered as an alternative system is necessary for consistency with Section 1613A.4. No material change intended.

## **CAC Recommendation:**

Accept

**Section 1607A.14.4** – Section number is revised to align with model code reorganization.

#### CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1607A.18** – Amendment in existing Section 1607A.19 is relocated to align with model code reorganization.

#### CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1610A.1** – Section is revised to clarify that soil loads specified in Table 1610.1 are only used as to establish the minimum design lateral soil loads and lateral soil loads for design should be based on the geotechnical investigation for consistency with Sections 1807A.1.1 and 1807A.2.2.

A note is added to clarify that lateral soil pressure for design of foundation and retaining walls shall be based on the geotechnical report.

## CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1613A.1** – Existing amendment deleting exceptions to Section 1613A.1 is retained. Part of the amendment prohibiting use of ASCE 7 to determine seismic design category is removed, since all buildings in California are now assigned to Seismic design Category (SDC) D or higher in accordance with Section 1613A.2.

## CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1613A.2** – Amendment in existing Section 1613A.2.5 requiring minimum seismic design category of D is retained. No material change intended.

## **CAC Recommendation:**

Accept

**Existing Sections 1613A.2.5 and 1613A.2.5.1** – Amendment in existing Sections 1613A.2.5 is relocated to Section 1613A.2. Existing amendment is repealed Section 1613A.2.5.1 is deleted since it is now fully addressed by Section 1613A.2.

**Existing Tables 1613A.2.3(1) and 1613A.2.3(2)** – Repeal OSHPD amendments to tables that are repealed in the 2024 IBC. These deletions will not have any regulatory affects and no material change is intended.

## **CAC** Recommendation:

Approve

#### Agency Response:

Accept

**Section 1613A.3** – Amendment in existing Section 1613A.2.5.2 is relocated to align with the model code re-organization.

#### CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1613A.4** – Amendment in existing Section 1613A.3 is relocated to align with the model code re-organization.

## **CAC Recommendation:**

Approve

## Agency Response:

Disagree. After the CAC meeting, DSA and OSHPD agreed to show the repealed model language as a continued deletion.

**Section 1617A.1** – Section reference is corrected since there are 41 subsections in Section 1617A.1.

## **CAC Recommendation:**

Approve

## Agency Response:

Accept

**Section 1617A.1.1** – Section is revised to include wind tunnel tests to the structural design criteria requirements to align with ASCE 7 Section 31.6. Section is clarified to state that structural design criteria under this section are required to be submitted as an alternative system, since ASCE 7 Chapters 1 & 16 are not adopted by IBC 2024 or this code.

Further study required. Based on criteria 6, the CAC suggests adding the ASCE 49 reference to the end of the sentence.

#### Agency Response:

Accept. The proposed language has been added to the end of the sentence.

**Existing Section 1617A.1.3** – Content of the amendment in existing Section 1617A.1.3, which was based on NEHRP 2020, is incorporated into ASCE 7-22. Hence the amendment is no longer necessary.

## CAC Recommendation:

Approve

#### **Agency Response:**

Accept

**Section 1617A.1.4** – Some item numbers and names for the seismic force-resisting systems are changed to align with ASCE 7-22. Steel intermediate and ordinary moment frames are permitted for lightly loaded canopies and walkways.

## CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1617A.1.5** - Two-stage analysis procedure in ASCE 7 was thoroughly reevaluated and revised in ASCE 7-22 which addressed the concerns that form the basis of the existing OSHPD amendment. Hence the amendment is no longer necessary.

## CAC Recommendation:

Approve

#### Agency Response:

Accept

**Existing Section 1617A.1.10** – Bulk of the existing amendments in this section is related to the extreme torsional irregularity (horizontal structural irregularity Type 1b in ASCE 7-16), which is no longer defined in ASCE 7-22. Hence all parts related to the extreme torsional irregularities are repealed. Section is revised to align with ASCE 7-22.

## CAC Recommendation:

Approve

Agency Response:

Accept

**Section 1617A.1.11** – Item number is revised to align with reorganization of ASCE 7, no material change intended.

Approve

#### Agency Response:

Accept

**Section 1617A.1.12** – Clarified that the exception only applies to light frame construction, braced entirely by wood light-frame shear walls. No material change intended.

## **CAC Recommendation:**

Approve

#### Agency Response:

Accept

**Section 1617A.1.13** –Resistance factor for in-situ prototype testing is reduced to 0.75 from 0.80 in ASCE 7 for consistency with AASHTO Bridge Design Standard (AASHTO 2020). ASCE 7 value was taken from AASHTO and assumes that dynamic/cyclic testing will be performed for prototype and field verification tests. Chapters 18 & 18A removed cyclic testing requirements for piles since ASTM removed them from the test standards. Resistance factor is revised to align with reduced test requirements in Chapters 18 & 18A.

## **CAC** Recommendation:

Approve

## Agency Response:

Accept

**Existing Section 1617A.1.14** – Amendment in existing Section 1617A.1.14 not permitting the reduction of maximum inelastic response displacement ( $\delta_M$ ) by the importance factor is repealed to align with model code since ASCE 7 definition of design earthquake displacement in Section 12.8.6.3 now incorporates diaphragm deformation.

## CAC Recommendation:

Approve

## Agency Response:

Accept

Section 1617A.1.16 – Revision is for clarification only, no material change intended.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 1617A.1.17** – Section number is revised to align with section number change in ASCE 7, no material change intended.

Approve

#### Agency Response:

Accept

**Section 1617A.1.18** – ASCE 7 Section 13.1.4 only addresses exceptions to the support and attachment requirements, since the amendment is addressing the requirements, an appropriate header is added.

#### **CAC Recommendation:**

Approve

#### Agency Response:

Disagree. After the CAC meeting, DSA asked OSHPD to remove the "/or" in the title.

**Section 1617A.1.19** – OSHPD currently permits prequalified screw anchors in perimeter walls and outdoor conditions based on an acceptable evaluation report, which is supported by rigorous testing. The removal and resetting of post-installed mechanical anchors are now prohibited by ACI 318 Section 17.1.3, hence a separate prohibition for screw anchors is no longer necessary.

A note is added to indicate that the removal and resetting of post-installed mechanical anchors is prohibited by ACI 318.

#### **CAC Recommendation:**

Approve

#### Agency Response:

Accept

**Section 1617A.1.21** – Section is revised to add a prescriptive provision for aluminum ceiling. Tested aluminum complying with ASTM E580 will still be permitted.

#### CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1617A.1.23** – Corrected a section reference. ASCE 7 Tables 13.5-1 and 13.6-1 are completely revised negating the need for their amendments.

#### **CAC** Recommendation:

Approve

Agency Response:

Accept

**Section 1617A.1.26** – Reference to  $R_p$  value (used in ASCE 7-16) is deleted, since ASCE 7-22 does not use it anymore and separation of pipe and support seismic coefficient in ASCE 7-22 Table 13.6-1 makes it unnecessary. Reference to  $I_p$ 

has been deleted in ASCE 7-22 so this amended text is repealed. Other editorial changes are to satisfy statutory mandate for use of plain language.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 1617A.1.37** – Section is renumbered to create room for new amendment in Section 1617A.1.38.

# **CAC Recommendation:**

Approve

# Agency Response:

Accept

**Section 1617A.1.38** – New section added to limit use of empirical correlation between SPT and CPT with shear wave velocity for large new buildings. ASCE 7 does not provide correlation between CP/SPT with shear wave velocity, hence such correlation requires review by the Office. Also, use of this section can potentially lead to higher ground motions or site category with associated cost implications. Amendment only applies to new buildings larger than 4000 sft. ground floor area, hence, will not impact any existing buildings project.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 1617A.1.39** – Section reference is revised to align with model code reorganization.

# CAC Recommendation:

Approve

## Agency Response:

Accept

#### ITEM 6 CHAPTER 17 SPECIAL INSPECTIONS AND TESTS

Adopt the 2024 International Building Code Chapter 17 for OSHPD 1R, 2, 3, 5 and 6. Carry forward existing amendments of the 2022 California Building Code for OSHPD 1R, 2, and 5.

**Section 1701.1.1** – Editorial change to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD).

Approve

## Agency Response:

Accept

**Section 1701.1.2** – Editorial change for clarification and revision to section references. All amendments applying to Type V skilled nursing or intermediate care facilities [OSHPD 2] are already identified with a banner, so further elaboration is redundant. Edits are intended to comply with statutory mandate for use of plain language.

# **CAC** Recommendation:

Approve

#### Agency Response:

Accept

**Section 1701.1.3** – Editorial change to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD).

# CAC Recommendation:

Approve

## Agency Response:

Accept

Section 1704.2 – Editorial change to add reference to all applicable Chapters.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 1704.3.2** – Editorial change to revise section reference to align with section reference changes in model code.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 1705.2.1** – Revision merely adopts the model code provisions and aligns with current practice. Model code provisions improved significantly over the years and fully address both gravity and seismic tests and inspections requirements. Non adoption of certain sections of AISC 360 created an unintended gap in special inspection requirements since a table (equivalent to Chapter 17A Table 1705A.2.1) which was supposed to replace the non-adopted sections was not included. Also, adoption of quality control provisions of AISC 341 and AISC 358 (which applies to seismic design only) for gravity systems created an unnecessary cost burden for construction. AISC 360 Section N5 Item # 3 and Section N6 are not adopted for consistency with Sections

1704.2 and 1704.2.5.1 respectively (no material change intended). A note is added to explain the difference in terminology used by AISC and the CBC.

OSHPD does not approve fabricators or erectors, hence AISC 360 Section N6 does not apply. Coordinated inspections in AISC 360 Section N5 Item # 3 permit transfer of some quality assurance inspections to quality control inspectors. Since quality control inspection are not performed by an approved agency, they are not acceptable as equivalent to quality assurance inspections.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 1705.2.2** – Section is revised to clarify that requirements of the CBC are also applicable.

OSHPD does not approve fabricators or erectors, hence AISC 370 Section N6 does not apply. Coordinated inspections in AISC 370 Section N5 Item # 3 permit transfer of some quality assurance inspections to quality control inspectors. Since quality control inspection are not performed by an approved agency, they are not acceptable as equivalent to quality assurance inspections.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 1705.2.3** – Section is revised to require approved agencies and special inspectors to perform special inspections as mandated by this code.

# **CAC Recommendation:**

Approve

# Agency Response:

Accept

**Section 1705.2.4.1 and 1705.2.5.1** – Amendments in existing Sections 1705.2.3.1 and 1705.2.4.1 are relocated to align with the model code re-organization. Editorial changes are intended to comply with the statutory mandate to use plain language.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 1705.2.7** – Amendment in existing Section 1705.2.5 is relocated and references revised to align with the model code re-organization. Reference to Sections 1705.13.1 and 1705.14.1 are added for seismic special inspections and tests only. AWS B5.1 is adopted, since OSHPD currently accepts welders certified to AWS B5.1. AWS

D1.6 is adopted to satisfy welding requirements for newly adopted AISC 370 for stainless steel.

#### CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section1705.2.8** – Amendment in existing Section 1705.2.6 is relocated and references revised to align with the model code re-organization.

#### CAC Recommendation:

Approve

Agency Response:

Accept

**Sections 1705.3.3.1, 1705.3.4 and 1705.3.9** – Editorial changes are intended to comply with the statutory plain language mandate.

## CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1705.4** – Batch plant inspection requirements for grout is added, since on large projects they are treated same as concrete. This essentially codify the current practice, since ACI 318 treats concrete and grout the same way.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 1705.4.1.1** – Section is added to maintain current requirement for periodic inspection of veneer. No material changes in current requirements are intended.

## CAC Recommendation:

Approve

Agency Response:

Accept

Section 1705.5.4 – Editorial amendment to move OSHPD banner.

**Section 1705.5.5** – Reference pointer revised to appropriate ANSI A191.1 section for marking of non-custom glued laminated members.

## CAC Recommendation:

Accept

**Sections 1705.13.1 & 1705.14.1** – Sections are revised to clarify that requirements of the CBC are also applicable. For Sections 1705.13.1.1 and 1705.13.1.2, clarification that exceptions are not applicable to OSHPD buildings are added, for consistency with Sections 1705.14.1.1 and 1705.14.1.2.

#### CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1705.14.2** – Amendment is revised to include nationally recognized standards. ANSI/FM 1950 and ANSI/ASHRAE 171 are referred to match with ASCE 7 Section C13.6.4.1. A note is added to clarify how the deemed to comply provisions and alternative system works.

#### CAC Recommendation:

Further study required. Based on criteria 6, the CAC suggests "deemed to comply" should be hyphenated.

#### Agency Response:

Disagree. Upong further review, OSHPD does not agree with the CAC recommend and the language is unchanged.

**Section 1705.14.3.1** – Onsite power resources such as photovoltaics, batteries, fuel cells, or microgrids used to replace normal power from the utility company in part or in whole, are required to be seismically certified to ensure reliability equivalent to that provided by the public utility service. This code change is coordinated with Section 517.4 in the California Electrical Code, Part 3 of Title 24.

## CAC Recommendation:

Further study required. Based on criteria 6, the CAC suggests correcting "provided".

## Agency Response:

Accept. Correction made.

**Section 1710** – Interest in off-site construction including modular and panelized systems is growing. Off-site construction has been identified as a solution for multiple societal and industry challenges including affordability, sustainability, job site safety, and the availability of skilled workers. However, many segments of the building industry including code officials, building owners, designers and contractors are often unfamiliar with these processes. While all off-site construction projects must meet the requirements of the code in place at the final project site, the translation between code requirements and the off-site construction process is not always clear. To facilitate enhanced understanding of the off-site construction process, assure off-site projects maintain the requirements in code and are implemented in an efficient manner for both OSHPD and manufacturers, new Section 1710 is added.

The scope of standard ICC 1200 is to provide minimum requirements to safeguard the public health, safety, general welfare and address societal and industry challenges in multiple facets of the off-site construction process including: planning, designing, fabricating, transporting, and assembling building elements. The scope of standard ICC 1205 is to provide minimum requirements for the inspection and regulatory compliance of off-site construction.

Off-site (or modular) construction entails the planning, design, fabrication, and assembly of building elements at a location other than the location where they were fabricated. Large components of a structure can be assembled in a factory-like setting and transported to the building site for final assembly. Subsequently, the finished construction is required to comply with the California Building Code (CBC) as adopted by OSHPD. These standards provide planning and preparation requirements such as: the role of the architect/modular manufacturer/construction manager/general contractor, location of plant vs construction site, engagement early in the process, material procurement and lead times, and change orders. These standards also provide for requirements for a controlled manufacturing environment, supply chain integration, structural modular vs non-structural modular (e.g., bathroom pods) systems, the fabrication process and on-site assembly such as: staging area for construction materials, foundation, placing modules, structural connections, utilities, weather considerations, finishing mate lines, inspection, approval and regulatory compliance of off-site construction components and their assembly and completion at the final building site such as: permitting; in-plant and on-site final inspections; and special inspections.

## CAC Recommendation:

Approve

Agency Response:

Accept

# ITEM 7 CHAPTER 17A SPECIAL INSPECTIONS AND TESTS

Adopt the 2024 International Building Code Chapter 17 as Chapter 17A for the 2025 CBC for OSHPD 1 and 4. Carry forward existing amendments of the 2022 CBC with the following modifications.

**Sections 1701A.1.1 and 1701A.1.2** – Editorial change to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD).

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 1701A.3** – Reference to Chapters 14,15 and 24 are added to the list of chapters with special inspection and test requirements since those chapters have special inspection and testing requirements.

Approve

## Agency Response:

Accept

Section 1704A.2.4 – Editorial changes to align with revised model code language.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 1704A.5** – Certification requirements for manufacturer's certificate is deleted to be consistent with current practice. OSHPD Preapproval of Manufacturer's Certification (OPM) program only pre-approve design but not fabrication of supports and attachments at manufacturer's shop. Normal special inspection and testing requirements applies, like any other construction, for all components approved through an OPM.

## **CAC** Recommendation:

Approve

# Agency Response:

# Accept

**Section 1705A.2.1** – Revision merely adopts the model code provisions and aligns with current practice. Model code provisions improved significantly over the years and fully address both gravity and seismic tests and inspections requirements. Adoption of quality control provisions of AISC 341 and AISC 358 (which are for seismic design only) for gravity systems created an unnecessary cost burden for construction. AISC 360 Section N5 Item # 3 and Section N6 are not adopted for consistency with Sections 1704A.2 and 1704A.2.5.1 respectively (no material change intended). A user note is added to address the use of different terminology by AISC and the CBC.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Existing Table 1705A.2.1** – Table only covers special inspection and testing (quality assurance) requirements for gravity load resisting systems in accordance with AISC 360 and do not address special inspection and testing requirements for the seismic force resisting systems and structural elements in the seismic load path contained in AISC 341 (& AISC 358).

Special inspection requirements for seismic design of steel in Sections 1705A.13.1.1 and 1705A.13.1.2 refers to Section 1705A.2.1, which contain Table 1705A.2.1, as the limit for enforcement of AISC 341 (& AISC 358), thereby removing all seismic requirements for seismic force resisting systems and associated structural elements.

Adoption of model code and deletion of Table 1705A.2.1 will ensure that gravity force resisting systems will be subjected to special inspection and test requirements in AISC 360 and seismic force resisting systems special inspections and tests shall be subjected to requirements in AISC 360, AISC 341 and AISC 358.

## CAC Recommendation:

#### Approve

# Agency Response:

Disagree. OSHPD changed the font of the proposed nonregulatory notes from upright to italics and added OSHPD banner to clarify that the notes are proposed to be added by OSHPD for OSHPD 1 and 4 applications and to be placed after Table 1705A.2.1, which is not adopted by OSHPD.

**Section 1705A.2.2** – Section is revised to clarify that requirements of the CBC are also applicable. Coordination of inspections is not adopted to retain the special inspection requirements by an approved agency and consistency with Section 1705A.2.1. Approved fabricator section is not adopted since OSHPD does not approve fabricator.

## **CAC Recommendation:**

Approve

## Agency Response:

Accept

**Section 1705A.2.3** – Pointer to deleted Table 1705A.2.1 and redundant pointer to Section 1705A.2.5 are deleted. Amendment is added to require approved agencies and inspectors perform special inspections as required by other sections of this code.

## CAC Recommendation:

Approve

# Agency Response:

Accept

**Sections 1705A.2.4.1 & 1705A.2.5.1** – Section numbers are revised for consistency with model code re-organization. Section 1705A.2.5.1 is editorially revised to comply with the statutory plain language mandate.

## CAC Recommendation:

Approve

# Agency Response:

Accept

**Sections 1705A.2.7 and 1705A.2.8** – Editorial changes to keep the sections coordinated, no material change intended. Reference to AWS D1.6 added because of the adoption of stainless-steel standard AISC 370. AWS B5.1 is adopted, since OSHPD currently accepts welders certified to AWS B5.1.

# CAC Recommendation:

Accept

**Table 1705A.3 –** Table is updated to match with new IBC format. No material change intended.

#### CAC Recommendation:

Approve

#### Agency Response:

Disagree. Revisions made to coordinate the co-adopted language with DSA and renumbered sections in Chapter 19A. Editorial errors in the section references are fixed. Existing OSHPD amendments to items 1.a and 1.b are shown in the ET for context, but no changes are proposed. Items 2.a-f are shown to reflect the rearranged model code language for context. Reference standard sections are renumbered to match revised section numbers in in Chapter 19A. In item 5, Verify use of mix design, reference to ACI 318 Section 26.13.3.2 is relocated to item 6 as that section is related to continuous inspection prior to and during concrete placement, and continuous inspection is not required for concrete mix design.

**Section 1705A.3.1**– Section number is revised for consistency with model code renumbering.

#### **CAC** Recommendation:

Approve

#### **Agency Response:**

Accept

**Section 1705A.3.3.1** – Item numbers are revised for easier reference.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 1705A.4** – Batch plant inspection requirements for grout is added, since on large projects they are treated same as concrete. This essentially codifies the current practice, since ACI 318 treats concrete and grout the same way.

## CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1705A.4.1.1** – Section is added to maintain current requirement for periodic inspection of veneer. No material changes in current requirements intended.

# CAC Recommendation:

Accept

**Section 1705A.5.1** – Section reference is corrected since there is no Chapter 23A in the code and missing reference to Section 2307.1 is added. No material changes in current requirements intended.

#### **CAC** Recommendation:

Approve

#### Agency Response:

Accept

**Section 1705A.5.5** – Reference pointer revised to the appropriate ANSI/APA A191.1 section for marking of non-custom glued laminated members.

#### CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1705A.13.1**– Section is revised to clarify that requirements of the CBC, in addition to those in the AISC 341, are also applicable. In sections 1705A.13.1.1 and 1705A.13.1.2 reference to gravity Section 1705A.2.1 is deleted since the seismic requirements in the AISC 341 builds on the gravity requirements in AISC 360.

## **CAC Recommendation:**

Approve

Agency Response:

Accept

Section 1705A.13.5.2 – Section reference is corrected.

## **CAC** Recommendation:

Approve

## Agency Response:

Accept

**Section 1705A.14.1, 1705A.14.1.1 and 1705.14.1.2** – Sections are revised to clarify that requirements of the CBC, in addition to those in the AISC 341, are also applicable.

## CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1705A.14.2** – Reference to Section 1704A.5 is deleted, since associated certification requirement is deleted IN Section 1704A.5 Item number 2.

Amendment is revised to include nationally recognized standards such as ANSI/FM 1950, ANSI/ASHRAE 171 referenced in ASCE 7 Section C13.6.4.1. A note is added to explain how the deemed to comply provisions in the code works.

# CAC Recommendation:

Further study required. Based on criteria 6, the CAC suggests "deemed to comply" should be hyphenated.

## Agency Response:

Disagree. Upong further review, OSHPD does not agree with the CAC recommendation and the language is unchanged. "Deemed to comply" need not be hyphenated.

**Section 1705A.14.3.1** – Exception #1 is revised to exempt all equipment and components rigidly attached to structures up to 75 lbs. from special seismic certification requirements, since OSHPD had not seen any failure of such equipment/component after several years of testing for OSHPD Special Seismic Certification Preapproval (OSP).

# **CAC Recommendation:**

Approve

# Agency Response:

Accept

**Section 1710A** – Interest in off-site construction including modular and panelized systems is growing. Off-site construction has been identified as a solution for multiple societal and industry challenges including affordability, sustainability, job site safety, and the availability of skilled workers. However, many segments of the building industry including code officials, building owners, designers and contractors are often unfamiliar with these processes. While all off-site construction projects must meet the requirements of the code in place at the final project site, the translation between code requirements and the off-site construction process is not always clear. To facilitate enhanced understanding of the off-site construction process, assure off-site projects meets the requirements in code and are implemented in an efficient manner for both OSHPD and manufacturers, new Section 1710A is added.

The scope of standard ICC 1200 is to provide minimum requirements to safeguard the public health, safety, general welfare and address societal and industry challenges in multiple facets of the off-site construction process including: planning, designing, fabricating, transporting, and assembling building elements. The scope of standard ICC 1205 is to provide minimum requirements for the inspection and regulatory compliance of off-site construction.

Off-site (or modular) construction entails the planning, design, fabrication, and assembly of building elements at a location other than the location where they were fabricated. Large components of a structure can be assembled in a factory-like setting and transported to the building site for final assembly. Subsequently, the finished construction is required to comply with the California Building Code (CBC) as adopted by OSHPD.

These standards provide planning and preparation requirements such as: the role of the architect/modular manufacturer/construction manager/general contractor, location of plant vs construction site, engagement early in the process, material procurement and lead times, and change orders. These standards also provide for requirements for a controlled manufacturing environment, supply chain integration, structural modular vs non-structural modular (e.g., bathroom pods) systems, the fabrication process and onsite assembly such as: staging area for construction materials, foundation, placing modules, structural connections, utilities, weather considerations, finishing mate lines, inspection, approval and regulatory compliance of off-site construction components and their assembly and completion at the final building site such as: permitting; in-plant and on-site final inspections; and special inspections.

# **CAC Recommendation:**

Approve

Agency Response:

Accept

# ITEM 8 CHAPTER 18 SOILS AND FOUNDATIONS

Adopt the 2024 International Building Code Chapter 18 for OSHPD 1R, 2, 3, 5 and 6. Carry forward existing amendments of the 2022 California Building Code for OSHPD 1R, 2, and 5.

**Section 1801.1.1** – Editorial change to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD). Also, last sentence is reorganized to match with other chapters.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 1801.1.2** – Editorial change to add OSHPD banner and repealing the exception.

## **CAC Recommendation:**

Approve

## Agency Response:

Accept

**Section 1801.1.3** – Editorial change to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD).

## CAC Recommendation:

Approve

## Agency Response:

#### Accept

**Section 1803.2** – Applicability of the amendment is revised to comply with Health and Safety Code Section 129775.

## **CAC** Recommendation:

Approve

#### Agency Response:

Accept

**Section 1803.5.4** – Amendment is repealed since exception being amended is deleted by the model code.

#### **CAC Recommendation:**

Approve

Agency Response:

Accept

**Sections 1803.7** –Exceptions are reorganized for clarity. Name of the CGS Special Publication 42 is revised to match with new name.

## **CAC** Recommendation:

Approve

Agency Response:

Accept

## Section 1807.2 – Pointer to a deleted section is deleted.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 1807.2.5** – ASCE 7 Section 15.6.1 requires earth-retaining structures to be designed as non-building structures. Hence amendment to design cantilever retaining walls as components with modified seismic coefficient and soil resistance is deleted.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 1808.8.6** – Redundant [OSHPD 1R, 2 & 5] reference for a model code provision is deleted.

#### CAC Recommendation:

Approve

## Agency Response:

#### Accept

**Section 1809.15** – Section number is revised to accommodate addition of new section in the model code. Exception is revised to permit changes by any Registered Design Professional.

## **CAC Recommendation:**

Approve

## Agency Response:

Accept

**Section 1810.3.9.4.2.1** – OSHPD amendment is repealed to align requirements with the model code provisions. Tests has shown that performance of spirally reinforced piles are equivalent for concrete and grout.

# **CAC** Recommendation:

Approve

#### Agency Response:

Accept

**Section 1810.3.12** – OSHPD amendment is repealed since the model code is revised to match with OSHPD amendments.

## CAC Recommendation:

Approve

#### Agency Response:

Accept

**Sections 1812.2 and 1812.5** – Editorial changes for clarity to satisfy statutory mandate on use of plain language, no material change intended.

## **CAC** Recommendation:

Approve

## Agency Response:

Accept

#### ITEM 9 CHAPTER 18A SOILS AND FOUNDATIONS

Adopt the 2024 International Building Code Chapter 18 as Chapter 18A of the 2025 CBC for OSHPD 1 and 4. Carry forward existing amendments of the 2022 California Building Code.

**Sections 1801A.1.1 and 1801A.1.2** – Editorial changes to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD).

# **CAC Recommendation:**

Accept

**Sections 1803A.6** – Exceptions are reorganized for clarity to satisfy statutory mandate for use of plain language. Restrictions on use of attenuation relations is removed, so that hospitals can take advantage of annual ground motion update produced by USGS while performing site specific ground motion analysis. Name of the CGS Special Publication 42 is revised to match with new name.

#### **CAC Recommendation:**

Approve

#### Agency Response:

Accept

Section 1807A.2 – Pointer to the deleted amendment is repealed.

#### CAC Recommendation:

Approve

#### **Agency Response:**

Accept

**Section 1807A.2.5** – ASCE 7 Section 15.6.1 requires earth-retaining structures to be designed as non-building structures with due consideration for appropriate risk category. Hence the legacy amendments for using double the soil pressure is repealed.

#### **CAC Recommendation:**

Approve

#### Agency Response:

Accept

**Section 1807A.3** – Reference to Chapter 8 in ASABE EP 486.3 is made specific, no material change intended.

#### **CAC Recommendation:**

Approve

#### Agency Response:

Accept

**Section 1809A.1** – Section number is revised to align with model code reorganization, no material change intended.

#### **CAC** Recommendation:

Approve

#### Agency Response:

Accept

**Section 1809A.15** – Section number is revised to accommodate addition of new section in the model code. Exception is revised to permit changes by any Registered Design Professional.

## CAC Recommendation:

Approve

## Agency Response:

Accept

Sections 1810A.3.3.1.2, 1810A.3.3.1.5 & 1810A.3.3.2 – Cyclic test requirements are removed since associated ASTMs removed the cyclic test provisions.

# **CAC** Recommendation:

Approve

Agency Response:

Accept

**Section 1810A.3.12** – Existing amendment is repealed since the requirement in the amendment is now incorporated in the model code.

# **CAC** Recommendation:

Approve

#### Agency Response:

Accept

Section 1811A.4 – Revised section reference to point to appropriate section.

## **CAC Recommendation:**

Approve

## Agency Response:

Accept

Sections 1812A.2, 1812A.5 and 1812A.7 – Editorial changes for clarity only, no material changes intended.

## CAC Recommendation:

Approve

## Agency Response:

Accept

## ITEM 10 CHAPTER 19 CONCRETE

Adopt the 2024 International Building Code Chapter 19 for OSHPD 1R, 2, 3, 5 and 6. Carry forward existing amendments of the 2022 California Building Code for OSHPD 1R, 2, and 5.

**Chapter 19** – OSHPD amendments are no longer underlined in Chapter 19 since model code removed italicization for modification to ACI 318. OSHPD amendments will be shown italicized like all other chapters.

**Section 1901.1.1** – Editorial change to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD). Applicability language is revised for consistency with other chapters.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Sections 1901.1.2 & 1901.1.3** – Editorial changes to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD). Also, sections and sentences are reorganized for consistency with other chapters.

CAC Recommendation:

Approve

Agency Response:

Accept

**Existing Section 1901.1.4** – Redundant pointer to an OSHPD amendment is deleted.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 1901.3.2** – A note is added to indicate that the removal and resetting of postinstalled mechanical anchors is prohibited by ACI 318 Section 17.1.3.

# **CAC** Recommendation:

Approve

# Agency Response:

Accept

**Section 1901.3.3** – Editorial change for consistency with reference standard, no material change intended.

# **CAC** Recommendation:

Approve

Agency Response:

Accept

**Section 1901.3.4** – Section is reorganized for ease of use. Proof test requirements for anchors used for distribution systems and repetitively used architectural components

are reduced and made consistent with ASCE 41-23. ASTM standard is specified for tension test procedures.

#### **CAC Recommendation:**

Approve

#### Agency Response:

Accept

**Existing Section 1903.2** – OSHPD amendment to a model code section is deleted as that section is deleted in model code. Requirements for special inspections and tests are addressed in model code Section 1901.6.

## **CAC** Recommendation:

Approve

Agency Response:

Accept

**Section 1903.3** – Amendment in existing Section 1903.4 is moved to Section 1903.3 to align with model code re-organization.

# **CAC** Recommendation:

Approve

Agency Response:

Accept

**Existing Section 1903.5** – OSHPD amendment to deleted ASTM C33 Appendix is repealed. Requirements in OSHPD amendment are incorporated in the body of ASTM C33.

## **CAC** Recommendation:

Approve

## Agency Response:

Accept

**Existing Section 1903.6** – Amendment is repealed since revision to ACI 318 and concrete strength requirements at stated ages or stages of construction in model code Section 1901.5 Item # 1 addressed the subject.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Sections 1903.4 & 1903.5** – Sections are renumbered to align with model code reorganization and deletion of existing OSHPD amendments.

# CAC Recommendation:

Accept

**Sections 1905.5 and 1905.6** –Existing amendments are relocated to fit with reorganized Section 1905. Reference to redundant reference to seismic design categories D, E & F are deleted, since entire California is assigned to one of those categories.

#### **CAC Recommendation:**

Approve

#### Agency Response:

Accept

**Section 1906** – Amendment is clarified to state that only the plain concrete footings are prohibited by OSHPD in this section.

#### CAC Recommendation:

Approve

Agency Response:

Accept

**Section 1908.1** – Existing Sections 1908.1 & 1908.2 are merged to satisfy statutory mandate for use of plain language. Reference to ACI SPEC-506.2 is added for clarity. No material change intended.

#### **CAC Recommendation:**

Approve

#### Agency Response:

Accept

**Existing Sections 1908.2 and 1908.3** – Existing Sections 1908.2 and 1908.3 are moved to Sections 1908.1 and 1910.3.4 to align with ACI 318, no material change intended.

#### CAC Recommendation:

Approve

## Agency Response:

Accept

**Existing Section 1910.3.4** – Amendment is repealed since ACI 318 is revised to reflect the amendment.

#### **CAC Recommendation:**

Approve

#### Agency Response:

Accept

**Section 1910.3.4** – Amendment in existing Section 1908.3 is moved to align with ACI 318, no material change intended.

## CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1911.2** – New ACI SPEC-548.15 superseded ACI 503.7, hence the newer standard is adopted.

## **CAC Recommendation:**

Approve

Agency Response:

Accept

# ITEM 11 CHAPTER 19A CONCRETE

Adopt the 2024 International Building Code Chapter 19 as Chapter 19A of the 2025 CBC for OSHPD 1 and 4. Carry forward existing amendments of the 2022 California Building Code.

**Chapter 19A** – OSHPD amendments are no longer underlined in Chapter 19A since model code removed italicization for modification to ACI 318. OSHPD amendments will be shown italicized like all other "A" chapters.

**Sections 1901A.1.1 & 1901A.1.2** – Editorial changes to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD).

## CAC Recommendation:

Approve

Agency Response:

Accept

Section 1901A.2 – Existing amendment in Section 1901A.2 is retained.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Model Code Section 1901.2.1** – Provisions limited to Seismic Design Category (SDC) A is not adopted, since entire California is assigned to SDC D or higher.

# CAC Recommendation:

Accept

**Section 1901A.5** – Reference to plain concrete in Item # 8 is deleted since structural plain concrete is not permitted by OSHPD.

#### CAC Recommendation:

Approve

#### Agency Response:

Accept

**Existing Section 1902A.1.2** – Existing amendments to section deleted by model code is repealed.

#### CAC Recommendation:

Approve

#### Agency Response:

Withdraw. The italics in Section 1902A.1.2 are not California amendments, they are ACI defined terms. Section 1902.1.2 is deleted by model code, therefore OSHPD does not need to show this item as stricken and we are withdrawing it from the ET.

**Existing Section 1903A.2** – Existing amendment is repealed since it is duplicate of Section 1901A.6.

#### CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1903A.3** – Amendment in existing Section 1903A.4 is moved to 1903A.3 to align with reorganization of model code sections.

#### **CAC** Recommendation:

Approve

#### Agency Response:

Accept

**Existing Section 1903A.5** – OSHPD amendment to deleted ASTM C33 Appendix is repealed. Requirements in OSHPD amendment are incorporated in the body of ASTM C33.

#### **CAC Recommendation:**

Approve

#### Agency Response:

Accept

**Existing Section 1903A.6** – Amendment is deleted since revision to ACI 318 and concrete strength requirements at stated ages or stages of construction in model code Section 1901.5 Item # 1 addressed the subject.

## CAC Recommendation:

Approve

#### Agency Response:

Accept

**Sections 1903A.4 and 1903A.5** – Amendment in existing Sections 1903A.7 & 1903A.8 are retained.

## **CAC** Recommendation:

Approve

Agency Response:

Accept

**Section 1905A.1** – Existing model code section reference not consistent with reorganized model code is deleted.

#### **CAC Recommendation:**

Approve

Agency Response:

Accept

**Section 1905A.2** – Existing amendments deleting definitions are retained since these definitions are related to systems prohibited by Section 1617A.1.4 or plain concrete prohibited by Section 1901A.2.

#### **CAC** Recommendation:

Approve

Agency Response:

Accept

**Model Code Section 1905A.3** – Section is reserved for DSA-SS since intermediate precast structural walls are not permitted by Section 1617A.1.4.

## CAC Recommendation:

Approve

#### Agency Response:

Accept

Section 1905A.4. Corrected Chapter reference.

## **CAC Recommendation:**

Accept

**Model Code Section 1905A.5** – This section addresses plain concrete and it is prohibited by Section 1901A.

#### CAC Recommendation:

Approve

#### Agency Response:

Accept

**Model Code Section 1905A.6** - This section addresses plain concrete, and it is prohibited by Section 1901A.

#### CAC Recommendation:

Approve

#### Agency Response:

Accept

Section 1905A.7 and subsections 1905A.7.1 and 1905A.7.2 Add the "A" to indicate reference to the A chapter.

#### CAC Recommendation:

Further study required. Based on criteria 6. The state agency requested Further Study recommendation.

## Agency Response:

Accept. The word "section" previously proposed to be added is removed from Section 1905A.7.2, Exception 2.

**Section 1906A** – Add reserved to the title to match model code section not adopted by OSHPD.

## **CAC Recommendation:**

Approve

#### Agency Response:

Accept

**Section 1906A** – Existing prohibition on plain concrete footing is retained for consistency with Section 1901A.2.

## CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1908A.1** – Existing Sections 1908A.1 & 1908A.2 are merged to satisfy statutory mandate for use of plain language. Reference to ACI SPEC-506.2 is added for clarity. No material change intended.

Approve

Agency Response:

Accept

**Existing Section 1908A.3** - Section is moved to Section 1905A.5.

## CAC Recommendation:

Approve

#### Agency Response:

Accept

**Section 1909A –** Title is amended to represent new model code title. Amendments in existing Section 1905A are moved to Section 1909A to align with the model code reorganization.

# **CAC Recommendation:**

Further study required. Based on criteria 6, the CAC suggests coordinating with DSA.

## Agency Response:

Accept. Upon further study with DSA, HCAI and DSA are making amendments to their express terms to align. DSA will include the General section and modify section reference. HCAI is adding additional rationale as follows.

**Section 1909A.1** is indicated as a new text because this was model code language in the 2021 IBC that was not carried forward.

**Section 1909A.1.1 to 1909A.1.7** – Renumber 1905A.1 through 1905A.1.7 to 1909A.1.1 through 1909A.1.7 throughout the section. Editorial changes made to sections 1909A1.5 and 1909A.1.6 where the word "ACI" is deleted as the whole section refers to modification to ACI. Sections 1909A1.5 the ".1" after "ACI 318.1" is deleted as this was an error in the previous printing. Section 1909A.1.7 is revised for clarity, the word "both" is replaced by "either". No change in regulatory effect is intended.

**Existing Sections 1905A.1.8 and 1905A.1.9** – Existing sections are deleted as these sections (2021 IBC sections 1905.1.8 and 1905.1.3) have been deleted in the 2024 IBC.

**Section 1909A.1.8 to 1909A.1.9** – In coordination with DSA, reserved for DSA, Section 1909A.1.8 in the IET is deleted. Renumber existing sections 1905A.1.10 and 1905A.1.11 to 1909A.1.8 and 1909A.1.9.

**Section 1909A.1.10** – (formerly Section 1905A.1.12) Section is revised to align with revised ACI 318 section. Language in item #e is revised to satisfy statutory mandate for use of plain language. Table 19.2.1.1 title is added to match table title in ACI 318 omitted in the previous amendment.

## **CAC Recommendation:**

Disagree. Due to renumbering of the sections above, this section is renumbered to 1909A.1.10

**Section 1909A.1.11** – Section is repealed by OSHPD since ACI 318 picked-up equivalent changes. The section is marked as, reserved for DSA, as DSA has not repealed this amendment.

#### CAC Recommendation:

Approve

#### Agency Response:

Disagree. Due to renumbering of the sections above, this section is renumbered to 1909A.1.10

**Sections 1909A.1.12 to 1909A.1.14** – Renumber existing sections 1905A.1.14 to 1905A.1.16 to 1909A.1.12 to 1909A.1.14.

#### CAC Recommendation:

Approve

#### Agency Response:

Disagree. Due to renumbering of the sections above, this section is renumbered.

**Section 1909A.1.15** – Existing Section 1908A.3 is relocated to satisfy statutory mandate for use of plain language.

## **CAC Recommendation:**

Approve

## Agency Response:

Disagree. Due to renumbering of the sections above, this section is renumbered.

Section 1909A.16 – Section 1905A.17 is renumbered to Section 1909A.1.16

## **CAC** Recommendation:

Approve

## Agency Response:

Disagree. Due to renumbering of the sections above, this section is renumbered.

**Sections 1910A.5**– Section is reorganized for ease of use. Proof test requirements for anchors used for distributed systems or repetitively used architectural components are reduced and made consistent with ASCE 41-23. ASTM E3121 is specified for tension test procedures without the requirement for displacement measurements unless explicitly required. Testing requirements for screw type anchors have been revised to make proof testing easier to implement.

## CAC Recommendation:

Accept

**Section 1911A.2** – New ACI SPEC-548.15 superseded ACI 503.7, hence the newer standard is adopted.

## CAC Recommendation:

Approve

## Agency Response:

Accept

# ITEM 12 CHAPTER 20 ALUMINUM

Adopt the 2024 International Building Code Chapter 20 for OSHPD 1, 1R, 2, 3, 4, 5 and 6. Carry forward existing amendments of the 2022 California Building Code for OSHPD 1, 1R, 2, 4, and 5.

**Sections 2001.1.1 & 2001.1.2–** Editorial change to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD). Also, sections and sentences are reorganized for consistency with other chapters.

# CAC Recommendation:

Approve

## Agency Response:

Accept

Section 2001.1.3 – New section header is added for consistency with other chapters.

# CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2001.1.4** - Amendment describing correct reference to other chapters is added for consistency with other chapters. This eliminates the need to duplicate all amendments to refer "A" and "non-A" chapters.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Sections 2003 & 2003.1** – Sections are revised to avoid duplication of same amendment and consistency with other chapters. No material change is intended.

## CAC Recommendation:

Accept

# ITEM 13 CHAPTER 21 MASONRY

Adopt the 2024 International Building Code Chapter 21 for OSHPD 1R, 2, 3, 5 and 6. Carry forward existing amendments of the 2022 California Building Code for OSHPD 1R, 2, and 5.

**Section 2101.1.1** – Editorial change to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD).

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Sections 2101.1.2 & 2101.1.3** – Editorial changes to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD). Also, sections and sentences are reorganized for consistency with other chapters.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2101.2.2** – Structural systems with infill walls are not addressed in ASCE 7 Table 12.2-1, hence the prohibition for Items # 9 & # 10 are added. Also, seismic design in high seismic areas is not explicitly addressed in prescriptive design of masonry partition walls.

Limit design method is not permitted since it does not satisfy the ductility requirements of TMS 402 Section 9.3.5.6, which is part of the basis for establishing seismic co-efficient for special reinforced masonry shear walls.

Glass Fiber Reinforced Polymer (GFRP) reinforced masonry is not permitted since the associated seismic design requirements are not addressed in ASCE 7.

# CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2103.6** – Existing strength limit in Sections 2105.2, 2107.7 and 2108.4 is consolidated into one section and format aligned with TMS 402 Table 4.3.1, no material change intended. Minimum specified design strength of concrete masonry has been increased from 1,500 psi to 2,000 psi for consistency with TMS 402 and ASTM C90.

Approve

## Agency Response:

Accept

**Section 2104.2.2** – Section is revised to align with TMS 602, no material change intended.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2104.2.3** – TMS 402/602 reference section numbers are revised to match with revisions in TMS-402/602-22. Unit conversion is revised to match with rest of the sections in the chapter.

## **CAC Recommendation:**

Approve

## Agency Response:

Accept

**Existing Section 2104.2.4** – Amendment in this section is repealed to permit Self-Consolidating Grout (SCG) for construction of masonry since it is cheaper, requires less time for construction and provides better quality.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2104.2.4** – Section is renumbered for continuity. Maximum key height for a grout is specified since it is not covered in TMS 602.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2105.2** – Deleted requirements in this section that are not necessary since Section 2103.6 address the minimum strength requirements.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2105.3** – Site testing requirements is removed for pre-packaged mortars because of inherent factory quality control for these types of pre-mixed mortars with a material certificate.

# **CAC Recommendation:**

Approve

# Agency Response:

Accept

**Section 2105.4** – Editorial change to comply with statutory mandate for use of plain language. No material change intended.

# **CAC** Recommendation:

Approve

Agency Response:

Accept

**Section 2106.1.1**– Section is revised to align closely with changes in TMS 402. No material change intended.

# **CAC** Recommendation:

Approve

Agency Response:

Accept

**Section 2106.1.2** – TMS 402 reference section numbers are revised to match with revisions in TMS-402-22.

# **CAC Recommendation:**

Approve

# Agency Response:

Accept

**Section 2106.1.3** – Section is revised to satisfy statutory mandate for use of plain language, no material change intended.

# CAC Recommendation:

Approve

Agency Response:

Accept

Sections 2107.1 and 2108.1 – Removed references to sections that have been deleted.

# **CAC Recommendation:**

Accept

**Section 2107.4** – Rebar clearance requirements in TMS made this amendment unnecessary.

CAC Recommendation:

Approve

Agency Response:

Accept

**Existing Section 2107.6** – Rebar clearance requirements in TMS made this amendment unnecessary.

CAC Recommendation:

Approve

Agency Response:

Accept

**Existing Sections 2107.7 and 2108.4** – Existing sections are deleted since Section 2103.6 address the minimum strength requirements.

## **CAC** Recommendation:

Approve

Agency Response:

Accept

# ITEM 14 CHAPTER 21A MASONRY

Adopt the 2024 International Building Code Chapter 21 as Chapter 21A of the 2025 CBC for OSHPD 1 and 4. Carry forward existing amendments of the 2022 California Building Code.

**Section 2101A.1.1** – Editorial change to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD).

# CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2101A.1.3** – Structural systems with infill walls are not addressed in ASCE 7 Table 12.2-1, hence the prohibition for Items # 9 & # 10 are added. Also, seismic design in high seismic areas is not explicitly addressed in prescriptive design of masonry partition walls. Limit design method is not permitted since it does not satisfy the ductility requirements of TMS 402 Section 9.3.5.6, which is part of the basis for establishing seismic co-efficient for special reinforced masonry shear walls.

Glass Fiber Reinforced Polymer (GFRP) reinforced masonry is not permitted since the associated seismic design requirements are not addressed in ASCE 7.

# CAC Recommendation:

Approve

Agency Response:

Accept

**Section 2103A.3.1** – TMS 602 reference section number is revised to match with revisions in TMS 602-22.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2103A.6** – Existing strength limits in Sections 2105A.2, 2107A.6 and 2108A.4 is consolidated into one section and made consistent with TMS 402 Table 4.3.1, no material change intended. Minimum specified design strength of concrete masonry has been increased from 1,500 psi to 2,000 psi for consistency with TMS 402 and ASTM C90.

# **CAC** Recommendation:

Approve

Agency Response:

Accept

**Section 2104A.1.3.1** – Section is repealed, cleanout requirement in TMS 602 is adequate.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2104A.1.3.3** – Section is revised to align with TMS 602 and statutory mandate for use of plain language.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2104A.1.3.4** – TMS 602 reference section numbers are revised to match with revisions in TMS-602-22.

## **CAC** Recommendation:

Approve

## Agency Response:

Accept

**Sections 2104A.1.3.5 and 2104A.1.3.6** – Amendments to these sections are repealed to permit Self-Consolidating Grout (SCG), which is cheaper, requires less time for construction and provide better quality.

# CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2104A.1.3.7** – Amendment is repealed as content of the existing amendment is picked-up by TMS 602. No material change is intended.

# **CAC** Recommendation:

Approve

## Agency Response:

Accept

**Section 2104A.1.3.8** – Maximum height of construction joint location, which was missing, is specified.

# **CAC Recommendation:**

Approve

# Agency Response:

Accept

Section 2104A.1.3.9 – Section is revised to make the language mandatory.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2104A.1.3.10.2** – Existing amendment is revised to align text with TMS 402, no material change intended.

# CAC Recommendation:

Approve

# Agency Response:

## Accept

**Section 2104A.1.3.10.3** – TMS 602 reference section numbers are revised to match with revisions in TMS-602-22.

# CAC Recommendation:

Approve

Agency Response:

Accept

Sections 2104A.1.3.10.4 – Clarification to align terminology with TMS 602.

# CAC Recommendation:

Approve

Agency Response:

Accept

**Section 2104A.1.3.10.5** – Section is revised to align with TMS 602 and statutory mandate for use of plain language.

## CAC Recommendation:

Approve

Agency Response:

Accept

**Section 2104A.1.3.10.6** – Section is repealed to accommodate Self-Consolidating Grout (SCG).

# **CAC Recommendation:**

Approve

# Agency Response:

Accept

**Section 2104A.1.3.11.1** – Section is revised to align with TMS 602 and statutory mandate for use of plain language.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2104A.1.3.11.2** – Part of the existing amendment for means and method is repealed. Section reference is revised to align with re-organization. Amendment in Section 2104A.1.3.10.5 adds an Item 1 to TMS 602, Article 3.5B. Amendment in this section adds Items numbers to the same TMS section being modified. Item numbers are revised to remove the numbering conflict.

# CAC Recommendation:

Accept

Section 2105A.1 – Corrected reference to Chapter 17A instead of Chapter 17.

# CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2105A.2** –New Section 2103A.6 specify the minimum strength requirement; hence the deleted texts are no longer necessary.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2105A.3** – Site testing requirements is removed for pre-packaged mortars because of inherent factory quality control for these types of pre-mixed mortars with material certification.

## **CAC** Recommendation:

Approve

## Agency Response:

Accept

**Section 2105A.4** – Editorial change to comply with statutory mandate for use of plain language. No material change intended.

## CAC Recommendation:

Approve

## Agency Response:

Disagree. After the CAC meeting, DSA and OSHPD further amended the section. OSHPD included additional language to clarify that failure of the grout core may happen any time before the shear testing, and added "an outside wythe or" face shell that separates from the grout core.

**Section 2106A.1.1**– Section is revised to align closely with changes in TMS 402. No material changes intended.

## **CAC Recommendation:**

Approve

## Agency Response:

Accept

**Section 2106A.1.2**– Section is revised to align with revised section number in TMS 402.

Approve

## Agency Response:

Accept

**Section 2106A.1.3** – This is a new section added and subsequent sections are renumbered. TMS limit on termination of horizontal reinforcement do not adequately address seismic ductility requirements at large displacement. Section is added to provide a more ductile design.

## **CAC Recommendation:**

Approve

## **Agency Response:**

Accept

**Section 2106A.1.4** – Section is renumbered to accommodate new Section 2106A.1.3. Editorial changes are intended to satisfy the statutory mandate on use of plain language.

## **CAC** Recommendation:

Approve

## Agency Response:

Accept

**Section 2107A.1** – Total number of sections are revised as two existing sections, Sections 2107A.5 and 2107A.6 are repealed.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Existing Section 2107A.5** – Rebar clearance requirements in TMS made this amendment unnecessary, hence the amendment is repealed.

# CAC Recommendation:

Approve

## Agency Response:

Accept

**Existing Sections 2107A.6 & 2108A.4** – New Section 2103A.6 specify the minimum strength requirement; hence the deleted sections are no longer necessary.

# **CAC Recommendation:**

Accept

# ITEM 15 CHAPTER 22 STEEL

Adopt the 2024 International Building Code Chapter 22 for OSHPD 1R, 2, 3, 5 and 6. Carry forward existing amendments of the 2022 California Building Code for OSHPD 1R, 2, and 5.

**Section 2201.1.1** – Editorial change to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD). Editorial changes are intended to make the chapter consistent with the other chapters in the code.

# CAC Recommendation:

Approve

Agency Response:

Accept

**Sections 2201.1.2 & 2201.1.3** – Editorial changes to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD). Also, sections and sentences are reorganized for consistency with other chapters.

# CAC Recommendation:

Approve

# Agency Response:

Accept

Section 2201.1.4 – Redundant pointer to an OSHPD amendment is deleted.

# **CAC** Recommendation:

Approve

# Agency Response:

Accept

**Section 2201.4.1** – Existing Section 2204.1.1 is relocated to new Section 2201.4.1 to align with reorganized Chapter 22.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2201.5.1** – Existing Section 2204.4 is relocated to new Section 2201.5.1 to align with reorganized Chapter 22. Pointer to new shear lugs design provisions in ACI 318 Section 17.11 is added to promote code compliance. Section is reorganized to comply with statutory mandate for use of plain, no material change intended.

Approve

## Agency Response:

Accept

**Section 2202.1** – Existing amendment relocated to align with model code reorganization. Editorial changes to exceptions are intended to comply with statutory mandate for use of plain language, no material change intended.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2202.2.1** – Amendment from existing section 2206.2.1 is relocated to this section. Exceptions to the amendment are relocated to section 2202.4.1. No material change intended.

## **CAC Recommendation:**

Approve

## Agency Response:

Accept

**Section 2202.2.1.2** – Amendment in existing Section 2205.2.1.2 relocated to new Section 2202.2.1.2 to align with reorganized Chapter 22.

## CAC Recommendation:

Approve

## **Agency Response:**

Accept

**Section 2202.2.2** – Amendment is necessary for structural steel elements that are part of the seismic force resisting system for consistency with Section 2202.2.1.2.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2202.3** – Amendments in existing Section 2205.3 are retained with editorial changes, no material change intended.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2202.4** – Section number for existing Section 2205.4 is revised to Section 2202.4 to align with reorganization of Chapter 22. All subsection numbers are also revised for consistency.

# **CAC Recommendation:**

Approve

# Agency Response:

Accept

**Existing Section 2205.4.1** – Section prohibiting bolted moment connections was intended to ensure that energy loss for special moment frames occur by steel yielding (which is more reliable) in welded moment connections in-lieu of bolt slip or friction (which is less reliable) in bolted moment connections. Based on numerous tests energy loss by slip and friction in bolted moment connections has been shown to be acceptable and is currently permitting at least four different bolted moment connections is therefore repealed.

Some very simple/elegant bolted moment connections in AISC 358 are not currently permitted by OSHPD. Although some of these connections were widely used prior to the Northridge Earthquake and had no reported performance deficiencies, they were prohibited along with welded moment connections because of lack of testing to support their continued use. All moment connections in AISC 358 are based on new tests since the Northridge Earthquake. Welded and bolted moment connections in AISC 358 are therefore being permitted with limited modifications in Section 2202.4.

# CAC Recommendation:

Approve

# Agency Response:

Accept

Section 2202.4.1 – Existing amendment in exception to Section 2206.2.1 is relocated.

# **CAC** Recommendation:

Approve

# Agency Response:

Accept

**Section 2202.4.2** – Existing amendment in Section 2205.4.2 is relocated to fit with reorganization of Chapter 22. Current practice for gap to side plate thickness is codified.

# CAC Recommendation:

Approve

Agency Response:

Accept

**Section 2202.4.3** – Existing amendment in Section 2205.4.3 is relocated to fit with reorganization of Chapter 22. Limitations for nonlinear procedure is deleted since all

nonlinear analysis are considered as alternative systems in accordance with Section 1617A.1.1. Current practice for gap-to-side plate thickness is codified.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2202.4.4** – Existing limitations for Simpson Strong-Tie (SST) Yield-Link Moment Connection in OSHPD Preapproved Prefabricated Components and Systems (PCS -0002) is codified. Reference to AISC 341 Table D1.1 is intended to provide ductility consistent with AISC 341 requirements for moment frame beams with significant axial load.

# **CAC** Recommendation:

Further study required. Based on criteria 6, the CAC suggests adding commas around the u symbol.

# Agency Response:

Accept. Commas have been added around the u symbol.

**Section 2202.4.5** – Existing limitations for DuraFuse Frames (DFF) Moment Connection in OSHPD Preapproved Prefabricated Components and Systems (PCS -0004) is codified. Reference to AISC 341 Table D1.1 is intended to provide ductility consistent with AISC 341 requirements for moment frame beams with significant axial load.

# **CAC Recommendation:**

Approve

# Agency Response:

Accept

**Section 2204.1** – Amendment in existing Section 2210.1, which corresponds to this section, is repealed since referred section no longer exist in AISI S100.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2204.2** – Amendment in Section 2210.1, which aligns with Section 2204.2 in the re-organized IBC, is repealed since they are picked up by the model code. Cold-formed special bolted moment connection is prohibited by Section 1617A.1.2 (referred by Section 1601.15).

# CAC Recommendation:

Accept

Sections 2206.1.1.2, 2206.1.3, 2206.2, 2207.4, 2207.6, 2208.1, 2214.1, 2216.1 – Existing amendments are carried forward without any material change. These are shown to align with reorganization of Chapter 22 only and are not subject to public comments.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2216.2** – Section is revised to align with new version of AWS D1.1, no material change intended.

## CAC Recommendation:

Approve

## Agency Response:

Accept

## ITEM 16 CHAPTER 22A STEEL

Adopt the 2024 International Building Code Chapter 22 as Chapter 22A of the 2025 CBC for OSHPD 1 and 4. Carry forward existing amendments of the 2022 California Building Code.

**Sections 2201A.1.1 and 2201A.1.2** – Editorial changes to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD).

## CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2201A.2** through **Section 2201A.5** – New sections added to align with added sections in Chapter 22 of model code.

# **CAC** Recommendation:

Approve

Agency Response:

Accept

**Section 2201A.4.1** – Existing Section 2204A.1.1 is relocated to this section to align with reorganized Chapter 22A.

Approve

# Agency Response:

Accept

**Section 2201A.5.1** – Existing Section 2204A.4 is relocated to this section to align with reorganized Chapter 22A. Pointer to new shear lugs design provisions in ACI 318 Section 17.11 is added to promote code compliance. Section is reorganized to comply with statutory mandate for use of plain, no material change intended.

# **CAC** Recommendation:

Approve

## Agency Response:

Accept

Section 2202A – Section title updated to align with new model code section.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2202A.1** – Existing exceptions to Section 2205A.1 is relocated to new Section 2202A.1 to align with reorganized Chapter 22A.

# CAC Recommendation:

Approve

Agency Response:

Accept

Section 2202A.2 – A's added for correct Chapter reference.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2202A.2.1** – Limitation on composite structural steel and concrete seismic force resisting systems in existing Section 2206A.2.1 is retained.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2202A.2.1.1** – Amendment in existing Section 2205A.2.1.1 is relocated to new Section 2202A.2.1.1 to align with reorganized Chapter 22A. Entire California is in

Seismic Design Categories D, E, or F in accordance with Section 1613A.2.

# CAC Recommendation:

Approve

# Agency Response:

Accept

Section 2202A.2.1.2 – Amendment in existing Section 2205A.2.1.2 is retained.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2202A.2.2** – Reference to Seismic Design Categories B and C are deleted, since entire California is assigned to Seismic Design Category D, E, or F in accordance with Section 1613A.2. Requirements in this section is made consistent with amendment in existing Section 2205A.2.1.2, which requires all lateral force resisting systems including those listed in ASCE 7 Table 15.4-1 to be designed in accordance with AISC 341.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2202A.3 -** Existing Section 2205A.4 is renumbered to this section. Existing Section 2205A.4.1 – Definition of inelastic rotation in the glossary section is deleted since it is no longer used in the code.

# CAC Recommendation:

Approve

Agency Response:

Accept

**Section 2202A.3.1** – Amendment in existing Section 2205A.4.2 is retained with editorial changes only, no material change is intended.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2202A.3.2** – Amendment in existing Section 2205A.4.3 is retained, only change is the section number to align with model code reorganization.

# CAC Recommendation:

Accept

**Existing Section 2205A.4.4** – Pointer to another code section from AISC 341 is deleted since overall reference to AISC 358 (in AISC 341) is considered adequate, especially since most of the modification to AISC 341 in the CBC are now deleted.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Existing Section 2205A.4.5** – This amendment was added to the code immediately following the Northridge Earthquake to ensure that energy loss for special moment frames occur by yielding of steel (which is more reliable) in welded steel moment frame connections in-lieu of bolt slip or friction (which is less reliable) in bolted moment connections. Over time based on numerous tests energy loss by slip and friction in bolted moment connections has been shown to be acceptable and are currently permitting at least four different bolted moment connections on OSHPD projects. Hence the amendment is no longer necessary.

# CAC Recommendation:

Approve

Agency Response:

Accept

**Existing Section 2205A.4.6** – Pointer to another code section from AISC 341 is deleted since overall reference to AISC 358 (in AISC 341) is considered adequate, especially since most of the modification to AISC 341 in the CBC are now deleted.

# **CAC Recommendation:**

Approve

# Agency Response:

Accept

**Existing Section 2205A.4.7** – Significant testing had been done to validate new ductility requirements in AISC 341, Table D1.1a, hence the amendment is no longer necessary.

# **CAC** Recommendation:

Approve

# Agency Response:

Accept

**Existing Section 2205A.4.8** – Connections where yielding will not occur are accepted without cyclic test.

Approve

# Agency Response:

Accept

**Existing Section 2205A.4.9** – Size limits in AISC 341 is acceptable in-lieu of those used immediately after the Northridge earthquake since difference is not significant.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Existing Section 2205A.4.10** – Since bolted moment connections are accepted, which rely largely on bolt slip and friction for energy loss in-lieu inelastic rotation, two cycle inelastic rotation requirement is removed.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2202A.4** – Section number for existing Section 2205A.5 is revised to this section to align with reorganization of Chapter 22A. All subsection numbers are also revised for consistency.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Existing Section 2205A.5.1** – Section prohibiting bolted moment connections was intended to ensure that energy loss for special and intermediate moment frames occur by steel yielding (which is more reliable) in welded moment connections in-lieu of bolt slip or friction (which is less reliable) in bolted moment connections. Based on numerous tests, energy loss by slip and friction in bolted moment connections has been shown to be acceptable to OSHPD and is currently permitting at least four different bolted moment connections for OSHPD projects. Prohibition on use of bolted moment connections is therefore repealed.

Some very simple bolted moment connections in AISC 358 are not currently permitted by OSHPD. Although some of these connections were widely used prior to Northridge Earthquake and had no reported performance deficiencies, they were prohibited along with welded moment connections because of lack of testing to support their continued use. All moment connections in AISC 358 are based on new tests since the Northridge Earthquake. Welded and bolted moments connection in AISC 358 are therefore being permitted with limited modifications in Section 2202A.4.

Approve

# Agency Response:

Accept

**Section 2202A.4.1** – Existing amendment in exception to Section 2206A.2.1 is relocated to this section.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2202A.4.2** – Existing amendment in Section 2205A.5.2 is relocated to this section to fit with reorganization of Chapter 22A. Current practice for gap to side plate thickness is codified.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2202A.4.3** – Existing amendment in Section 2205A.5.3 is relocated to this section to fit with reorganization of Chapter 22A. Limitations for nonlinear procedure is deleted since all nonlinear analysis are considered as alternative systems in accordance with Section 1617A.1.1. Current practice for gap-to-side plate thickness is codified.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2202A.4.4** – Existing limitations for Simpson Strong-Tie Yield-Link Moment Connection in OSHPD Preapproved Prefabricated Components and Systems (PCS -002) is codified. Reference to AISC 341 Table D1.1 is intended to provide ductility consistent with AISC 341 requirements for moment frame beams with significant axial load.

# CAC Recommendation:

Further study required. Based on criteria 6, the CAC suggests adding commas around the u symbol.

# Agency Response:

Accept. Commas have been added around the u symbol.

**Section 2202A.4.5** – Existing limitations for DuraFuse Frames (DFF) Moment Connection in OSHPD Preapproved Prefabricated Components and Systems (PCS - 0004) is codified. Reference to AISC 341 Table D1.1 is intended to provide ductility consistent with AISC 341 requirements for moment frame beams with significant axial load.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2203A** and **Section 2203A.1** – New section for stainless steel is added in model code and included here.

# **CAC** Recommendation:

Approve

## Agency Response:

Accept

**Section 2204A.1** – Amendment in existing Section 2210A.1, which corresponds to this section, is repealed since referred section no longer exist in AISI S100. Also, pointer to deleted Section 2204.2 is deleted.

# CAC Recommendation:

Approve

## Agency Response:

Accept

**Model Code Section 2204A.2** – This section is not adopted and is deleted since two subsections under this section are deleted for the reasons explained below.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Model Code Section 2204A.2.1** – Existing Section 1617A.1.4 prohibit cold-formed steel bolted moment frames, hence associated detailing in this section is deleted.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Model Code Section 2204A.2.2** – Entire California is assigned to Seismic Design Category D, E, or F in accordance with Section 1613A.2. Hence detailing requirements in this section for systems only permitted in Seismic Design Category A, B, or C are deleted.

Approve

## Agency Response:

Accept

Section 2205A and Section 2205A.1 – New section for cold-formed stainless steel is added in model code and included here.

## CAC Recommendation:

Approve

## Agency Response:

Accept

Section 2206A, Section 2206A.1, and Section 2206A.1.1 – Existing section and sub sections to 2211A are renumbered to section 2206A with new reorganization of Chapter 22A.

# CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2206A.1.1.1** – Amendment in existing Section 2211A.1.1.1 is carried forward and aligned with new reorganization for Chapter 22A.

# CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2206A.1.1.2** – Amendment in existing Section 2211A.1.1.2 is carried forward and aligned with new reorganization for Chapter 22A.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2206A.1.2** – Deletion in existing Section 2211A.1.2 is carried forward, since OSHPD has no dwelling units under its jurisdiction.

## CAC Recommendation:

Approve

Agency Response:

Accept

# Section 2206A.1.3, Section 2206A.1.3.1, Section 2206A.1.3.2, and Section

**2206A.1.3.3** – Existing amendment in Section 2211A.1.3 is carried forward. Subsequent subsections are renumbered.

# CAC Recommendation:

Approve

Agency Response:

Accept

Section 2206A.2 – Existing amendment in Section 2211A.2 is carried forward.

# CAC Recommendation:

Approve

**Agency Response:** 

Accept

Section 2206A.3 – New model code section added.

CAC Recommendation:

Approve

Agency Response:

Accept

**Sections 2207A.4 and 2207A.6** – Amendments in existing Sections 2207A.4 & 2207.6 are carried forward.

## **CAC Recommendation:**

Approve

Agency Response:

Accept

Section 2208A – New model code section added.

# CAC Recommendation:

Approve

# Agency Response:

Accept

Section 2208A.1 – Existing amendment in Section 2210A.1.1.2 is carried forward.

# CAC Recommendation:

Approve

Agency Response:

Accept

Section 2209A.3 – New note added.

Further study required. Based on criteria 6, the CAC suggests correcting "is" to "are", removing the Note in 2209A.3.

## Agency Response:

Accept. Grammer corrected and the note was removed.

Section 2210A through 2213A – New model code sections and subsections added.

## CAC Recommendation:

Approve

## Agency Response:

Accept

Section 2214A.1 – Existing amendment in Section 2208A.1 is carried forward.

## CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2216A** – Section and subsection numbers are revised to align with model code re-organization.

## CAC Recommendation:

Approve

## Agency Response:

Accept

Section 2216A.1 and Section 2216A.2– Reference section numbers are revised to align with new version of AWS D1.1. Also, exemption for filled welded stud added to the AWS D 1.1 is incorporated.

## CAC Recommendation:

Approve

# Agency Response:

Accept

# ITEM 17 CHAPTER 23 WOOD

Adopt the 2024 International Building Code Chapter 23 for OSHPD 1, 1R, 2, 3, 4, 5 and 6. Carry forward existing amendments of the 2022 California Building Code for OSHPD 1, 1R, 2, 4 and 5.

**Section 2301.1.1–** Editorial change to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD). Hospital buildings removed from general acute care service (OSHPD 1R) and acute psychiatric hospital buildings (OSHPD 5) are added to the application since they are regulated by OSHPD.

Approve

# Agency Response:

Accept

**Sections 2301.1.2 and 2301.1.3** – Editorial changes to clarify that only OSHPD amendments apply to OSHPD regulated buildings.

# CAC Recommendation:

Approve

# Agency Response:

Accept

Section 2301.1.4 – Section number is revised to accommodate new Section 2201.1.3.

# CAC Recommendation:

Approve

# Agency Response:

Accept

**Section 2301.1.5** – Amendment in existing Section 2301.1.4 is retained with revised section number to align with model code re-organization.

# **CAC Recommendation:**

Approve

# Agency Response:

Accept

**Section 2303.1.4.1** – Editorial change for consistency in terminology, no material change intended.

# **CAC** Recommendation:

Approve

# Agency Response:

Accept

Section 2305.1.3 – Section number is revised to align with model code re-organization.

# **CAC Recommendation:**

Approve

Agency Response:

Accept

**Sections 2308.2 and 2308.2.8** – Section numbers are revised to align with model code re-organization.

Approve

## Agency Response:

Accept

# ITEM 18 CHAPTER 24 GLASS AND GLAZING

Adopt the 2024 International Building Code Chapter 24 for OSHPD 1, 1R, 2, 3, 4, 5 and 6. Carry forward existing amendments of the 2022 California Building Code for OSHPD 1, 1R, 2, 4 and 5.

**Section 2401.1.1** – Editorial change to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD).

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2401.1.2–** Editorial change to clarify that only OSHPD amendments apply to OSHPD regulated buildings.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2410.1.3** – Editorial change to satisfy statutory mandate for use of plain language.

## **CAC Recommendation:**

Approve

## Agency Response:

Accept

#### ITEM 19 CHAPTER 25 GYPSUM PANEL PRODUCTS AND PLASTER

Adopt the 2024 International Building Code Chapter 25 for OSHPD 1, 1R, 2, 3, 4, 5 and 6. Carry forward existing amendments of the 2022 California Building Code for OSHPD 1, 1R, 2, 4 and 5.

**Section 2501.1.1** – Editorial change to reflect change in organization name to the Office of Statewide Hospital Planning and Development (OSHPD).

# CAC Recommendation:

Accept

Section 2501.1.2- Editorial change to clarify applicability of OSHPD amendments.

## CAC Recommendation:

Approve

## Agency Response:

Accept

**Section 2503.2** – Editorial change to comply with statutory mandate for use of plain language.

## **CAC** Recommendation:

Approve

## Agency Response:

Accept

**Section 2507.3** – Existing amendment is revised to align with Section 2510.3. Exception for OSHPD 2 is deleted since new requirement are consistent with model code.

## **CAC** Recommendation:

Approve

## Agency Response:

Accept

## ITEM 20 CHAPTER 26 PLASTIC

Adopt the 2024 International Building Code Chapter 26 for OSHPD 1, 1R, 2, 3, 4, 5 and 6. All OSHPD amendments in this chapter, which were related to cladding, are repealed since corresponding model code sections (which were being amended) are moved to Chapter 14. This chapter will be adopted in its entirety without any OSHPD amendments.

## CAC Recommendation:

Approve

## Agency Response:

Accept

## ITEM 21 CHAPTERS 27, 28, AND 29

Entire Chapters 27, 28, and 29 not adopted by OSHPD.

# CAC Recommendation:

Accept

# ITEM 22 CHAPTER 30 ELEVATORS AND CONVEYING SYSTEMS

Adopt 2024 International Building Code Chapter 30 for OSHPD 1, 1R, 2, 3, 4, 5 and 6. Adopt 2024 International Building Code Chapter 30 for OSHPD 1 and carry forward existing amendments of the 2022 California Building Code (CBC).

## CAC Recommendation:

Approve

Agency Response:

Accept

# ITEM 23 CHAPTER 31 SPECIAL CONSTRUCTION

Adopt the 2024 International Building Code Chapter 31 for OSHPD 1, 1R, 2, 3, 4, 5 and 6. Add new amendment as follows.

Section 3114 – Applicability of OSHPD amendment is clarified.

## **CAC Recommendation:**

Approve

Agency Response:

Accept

# ITEM 24 CHAPTERS 31D FOOD ESTABLISHMENTS

HCAI does not adopt Chapter 31D. During the 2021 Triennial Code Adoption Cycle HCAI's ISOR stated "Carry forward existing amendments of the 2019 California Building Code, Chapter 31D for OSHPD 1 and 4". and the Published Matrix Adoption Table reflects that the Chapter is adopted for OSHPD 1 and 4. This is an error and the Chapter is promulgated by the California Department of Public Health and outside of HCAI's authority.

# CAC Recommendation:

Approve

Agency Response:

Accept

# ITEM 25 CHAPTER 32 ENCROACHMENTS INTO THE PUBLIC RIGHT-OF-WAY

Adopt 2024 International Building Code Chapter 32 for OSHPD 1 and 4.

Approve

# Agency Response:

Accept

# ITEM 26 CHAPTER 33 SAFEGUARDS DURING CONSTRUCTION

Adopt 2024 International Building Code Chapter 33 for OSHPD 1, 1R, 2, 3, 4, 5 and 6.

# **CAC** Recommendation:

Approve

## Agency Response:

Accept

# ITEM 27 CHAPTER 35 REFERENCED STANDARDS

Adopt 2024 International Building Code Chapter 35 for OSHPD 1, 1R, 2, 3, 4, 5 and 6. Carry forward existing amendments of the 2022 California Building Code for OSHPD 1, 1R, 2, 4, and 5. References are revised and updated to align with changes in other chapters.

# CAC Recommendation:

Approve

## Agency Response:

Accept

# ITEM 28 APPENDIX A, B, C, D, E, F, G, H, I, and J

2024 International Building Code Appendices A, B, C, D, E, F, G, H, I, and J not adopted by OSHPD.

# **CAC Recommendation:**

Approve

# Agency Response:

Accept

## ITEM 29 APPENDIX K - ADMINISTRATIVE PROVISIONS

2024 IBC Appendix K - Administrative Provisions, not adopted by OSHPD.

# **CAC Recommendation:**

Disagree. After the SDLF CAC, OSHPD corrected the ET and ISOR to clarify OSHPD does not adopt the California version of Appendix K GROUP R-3 AND GROUP R-3.1 OCCUPANCIES PROTECTED BY THE FACILITIES OF THE CENTRAL VALLEY FLOOD PROTECTION PLAN. This is a DWR appendix and OSHPD does not have authority to adopt it.

# ITEM 30 APPENDIX L - EARTHQUAKE RECORDING INSTRUMENTATION

Adopt 2024 International Building Code Appendix L and carry forward existing amendments of the 2019 California Building Code (CBC) for OSHPD 1 and 4.

# CAC Recommendation:

Approve

Agency Response:

Accept

#### ITEM 31 APPENDIX M, N, O, and P

2024 International Building Code Appendices M, N, O, and P not adopted by OSHPD.

# **CAC** Recommendation:

Approve

Agency Response:

Accept

# STATEMENT OF JUSTIFICATION FOR PRESCRIPTIVE STANDARDS

Government Code Section 11346.2(b)(1) requires a statement of the reasons why an agency believes any mandates for specific technologies or equipment, or prescriptive standards are required.

The proposed changes do not mandate any specific technologies or equipment and do not require any prescriptive standards.

# TECHNICAL, THEORETICAL, AND EMPIRICAL STUDY, REPORT, OR SIMILAR DOCUMENTS

Government Code Section 11346.2(b)(3) requires an identification of each technical, theoretical, and empirical study, report, or similar document, if any, upon which the agency relies in proposing the regulation(s).

2024 IBC: International Building Code

ASCE 7-22: Minimum Design Loads for Buildings and Other structures with Supplement No. 1

ASCE 24-14: Flood Resistant Design and Construction

ASCE 41-23: Seismic Evaluation and Retrofit of Existing Buildings

ACI 318-19: Building Code Requirements for Structural Concrete and Commentary

AISC 360-22: Specification for Structural Steel Buildings

AISC 341-22: Seismic Provisions for Structural Steel Buildings

AISC 358-22: Prequalified Connections for Special and Intermediate Steel Moment Frames for Seismic Applications

TMS 402-22: Building Code Requirements for Masonry Structures

TMS 602-22: Specification for Masonry Structures

ANSI/AWC NDS-24: National Design Specification (NDS) for Wood Construction

ANSI/AWC SDPWS-2021: Special Design Provisions for Wind and Seismic

# CONSIDERATION OF REASONABLE ALTERNATIVES

Government Code Section 11346.2(b)(4)(A) requires a description of reasonable alternatives to the regulation and the agency's reasons for rejecting those alternatives. In the case of a regulation that would mandate the use of specific technologies or equipment or prescribe specific action or procedures, the imposition of performance standards shall be considered as an alternate. It is not the intent of this paragraph to require the agency to artificially construct alternatives or describe unreasonable alternatives.

There were no alternatives for consideration by HCAI. The proposed amendments will provide clarification and consistency within the code and are in alignment with national standards. The alternative to these proposed regulations would be to leave regulations as they are which will be inconsistent with Health and Safety Code Section 18941 requirements.

# REASONABLE ALTERNATIVES THE AGENCY HAS IDENTIFIED THAT WOULD LESSEN ANY ADVERSE IMPACT ON SMALL BUSINESS

Government Code Section 11346.2(b)(4)(B) requires a description of any reasonable alternatives that have been identified or that have otherwise been identified and brought to the attention of the agency that would lessen any adverse impact on small business.

Small businesses will not be adversely impacted by the proposed adoption, amendments, or repeal of code requirements.

# FACTS, EVIDENCE, DOCUMENTS, TESTIMONY, OR OTHER EVIDENCE OF NO SIGNIFICANT ADVERSE ECONOMIC IMPACT ON BUSINESS

Government Code Section 11346.2(b)(5)(A) requires the facts, evidence, documents, testimony, or other evidence on which the agency relies to support an initial determination that the action will not have a significant adverse economic impact on business.

HCAI has identified that there will be no adverse economic impact on businesses on the basis that the provisions proposed are optional and are being proposed to allow facilities to provide services that better match their needs. The proposed regulations will have no overall cost impact on business, since they are equivalent to current

requirements in Title 24. Technical update to the national standards for structural design are incorporated, mostly by reference.

# ASSESSMENT OF EFFECT OF REGULATIONS UPON JOBS AND BUSINESS EXPANSION, ELIMINATION OR CREATION

Government Code Sections 11346.2(b)(2) and 11346.3(b)(1)

The Office of Statewide Hospital Planning and Development (OSHPD) has assessed whether and to what extent this proposal will affect the following:

# A. The creation or elimination of jobs within the State of California.

The proposed regulations will not create or eliminate jobs within the State of California.

# B. The creation of new businesses or the elimination of existing businesses within the State of California.

The proposed regulations will not create new businesses or eliminate existing businesses within the State of California.

C. The expansion of businesses currently doing business within the State of California.

The proposed regulations will not cause expansion of businesses currently doing business with the State of California.

# D. The benefits of the regulation to the health and welfare of California residents, worker safety, and the state's environment.

HCAI promulgates building standards regarding the design and construction of licensed health facilities to ensure the protection of the public's health and safety in the facilities. The proposed regulations are necessary for the continued preservation of the health, safety, and welfare of California residents through updated amendments. The regulations will not affect worker safety, or the state's environment.

# ESTIMATED COST OF COMPLIANCE, ESTIMATED POTENTIAL BENEFITS, AND RELATED ASSUMPTIONS USED FOR BUILDING STANDARDS

Government Code Section 11346.2(b)(5)(B)(i) states if a proposed regulation is a building standard, the initial statement of reasons shall include the estimated cost of compliance, the estimated potential benefits, and the related assumptions used to determine the estimates.

HCAI finds that the proposed building standards will result in no cost.

# DUPLICATION OR CONFLICTS WITH FEDERAL REGULATIONS

Government Code Section 11346.2(b)(6) requires a department, board, or commission within the Environmental Protection Agency, the Resources Agency, or the Office of the State Fire Marshal to describe its efforts, in connection with a proposed rulemaking action, to avoid unnecessary duplication or conflicts with federal regulations contained in the Code of Federal Regulations addressing the same issues. These agencies may adopt regulations different from these federal regulations upon a finding of one or more

of the following justifications: (A) The differing state regulations are authorized by law and/or (B) The cost of differing state regulations is justified by the benefit to human health, public safety, public welfare, or the environment.

The proposed regulations do not duplicate or conflict with Federal regulations.