

Session #5

“Summary”

July 15, 2020

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Agenda

- IOR's responsibilities
- Minimum qualifications to take the exam (Session 1)
 - For the "A"
 - For the "B"
 - For the "C"
- Exam format (Session 2)
 - Written portion
 - Plan reading
- How to prepare for the exam?
- How to read a set of plans?



Agenda (Cont.)

- What is the TIO Form? (Session 3)
- DPOR responsibility vs. IOR responsibility
- IOR strengths
- Daily reports & how to complete them properly
- When to notify OSHPD
- Discrepancies & corrective actions
- OSHPD field monitoring & IOR nonperformance (Session 4)
- Questions & Answers



IOR's Responsibilities

California Administrative Code Sections 7-145 and 7-151

1. The inspector shall have personal knowledge, obtained by continuous inspection of all parts of the work of construction in all stages of its progress to ensure that the work is in accordance with the approved construction documents. (7-145(a)1; 7-145(a)2; 7-151(c))
2. All inconsistencies or seeming errors in the approved construction documents shall be reported promptly to the architect or engineer in responsible charge for interpretation and instructions. (7-145(a)3)



IOR's Responsibilities (Cont.)

3. The inspector shall maintain a file of approved construction documents on the job at all times including all codes and regulations referred to in the approved construction documents and all reports of tests and inspections. All inconsistencies or seeming errors in the approved construction documents shall be reported promptly to the architect or engineer in responsible charge for interpretation and instructions. (7-145(a)4)
4. The inspector shall notify the Office as required by CAC 7-145(a)5.
5. The inspector(s) of record shall maintain field records (daily reports) of construction progress for each day or any portion of a day that they are present at the project site location. (7-145(a)6)



IOR's Responsibilities (Cont.)

6. All field records of construction progress (including daily IOR reports, test and special inspection reports, etc.) shall be retained on the job until the completion of the work. (7-145(a)6 & 7-145(a)7)
7. The inspector shall notify the contractor, in writing, of any deviations from the approved construction documents or new construction not in compliance with the California Building Standards Code. (7-145(b))
8. Verified compliance reports shall be submitted to the Office at the intervals or stages of the work as stated in the approved testing, inspection and observation program and when required by the Office. (7-151(a), 7-151(c) & 7-151(e))



Minimum Qualifications for **Class A** Exam

<p align="center">Class “A” Hospital Inspector May inspect all areas of construction This includes Architectural, Mechanical, Plumbing, Electrical, Fire and Life Safety and Structural elements.</p>		
	Qualification Method 1	Required Supporting Documents
<div style="border: 1px solid black; width: 20px; height: 20px; background-color: #add8e6; margin: 0 auto;"></div>	<p>High school graduation or the equivalent and six years’ experience involving building projects of Type I or II construction as an architect’s, engineer’s, owner’s, local building official’s or general contractor’s representative in technical inspection of major structural and nonstructural systems and components of buildings. [Note: Experience in subsection (a) 1 of the California Admin. Code Title 24, Part 1, Article 19, Section 7-204 may be substituted with college education with major work in architecture, engineering, building inspection and/or construction on a year- for-year basis for a max. of two years.]</p>	<ul style="list-style-type: none"> • Highschool transcripts or copy of High School Equivalency Certificate. • Work verification form(s) showing <u>six years</u> of experience involving Type I or II construction as an architect’s, engineer’s, owner’s, local building official’s or general contractor’s representative in technical inspection of major structural and nonstructural systems and components of buildings; or



Minimum Qualifications for **Class A** Exam (Cont.)

Qualification Method 2		Required Supporting Documents
<input type="checkbox"/>	Possess a valid California registration/license as a mechanical, electrical, or civil engineer and <u>two years</u> ' experience involving building projects of Type I or II construction as an architect's, engineer's, owner's, local building official's or general contractor's representative in technical inspection of major structural and nonstructural systems and components of buildings;	<ul style="list-style-type: none"> • Copy of valid California registration/license as a mechanical, electrical, or civil engineer • Work verification form(s) showing <u>two years</u> of experience involving Type I or II construction as an architect's, engineer's, owner's, local building official's or general contractor's representative in technical inspection of major structural and nonstructural systems and components of buildings; or
Qualification Method 3		Required Supporting Documents
<input type="checkbox"/>	<u>Two years</u> of satisfactory performance as a Class "B" Hospital Inspector of Record on hospital projects of significant scope and complexity as determined by OSHPD;	<ul style="list-style-type: none"> • Copy of valid Class "B" certification • Work verification form(s) showing <u>two years</u> of experience working as a Class "B" OSHPD inspector; or
Qualification Method 4		Required Supporting Documents
<input type="checkbox"/>	Possess a valid California registration/license as a structural engineer or a valid California license as an architect.	<ul style="list-style-type: none"> • Copy of valid California registration/license as a structural engineer or architect; or



Minimum Qualifications for Class B Exam

Class "B" Hospital Inspector	
May inspect only architectural, mechanical, plumbing, electrical, fire and life safety, and anchorage of nonstructural elements.	
Qualification Method 1	Required Supporting Documentation
<input type="checkbox"/> High school graduation or the equivalent and <u>four years'</u> experience involving building projects of Type I or II construction as an architect's, engineer's, owner's, local building official's or general contractor's representative in technical inspection of major structural and nonstructural systems and components of buildings. [Note: Experience in subsection (b) 1 of the California Administrative Code Title 24, Part 1, Article 19, Section 7-204 may be substituted with college education with major work in architecture, engineering, building inspection and/or construction on a year-for-year basis for a maximum of two years.];	<ul style="list-style-type: none"> • Highschool transcripts or copy of High School Equivalency Certificate. • Work verification form(s) showing <u>four years'</u> experience involving building projects of Type I or II construction as an architect's, engineer's, owner's, local building official's or general contractor's representative in technical inspection of major structural and nonstructural systems and components of buildings; or
Qualification Method 2	Required Supporting Documents
<input type="checkbox"/> Possess a valid California registration/license as a civil engineer and <u>two years'</u> experience involving building projects of Type I or II construction as an architect's, engineer's, owner's, local building official's or general contractor's representative in technical inspection of more than one major structural or nonstructural system of buildings (structural, mechanical, electrical or plumbing);	<ul style="list-style-type: none"> • Copy of valid California registration/license as a civil engineer • Work verification form(s) showing <u>two years'</u> experience involving building projects of Type I or II construction as an architect's, engineer's, owner's, local building official's or general contractor's representative in technical inspection of more than one major structural or nonstructural system of buildings (structural, mechanical, electrical or plumbing); or



Minimum Qualifications for **Class B** Exam (Cont.)

Qualification Method 3		Required Supporting Documents
<input type="checkbox"/>	Possess a valid California registration/license as a structural, mechanical or electrical engineer, or a valid California license as an architect;	<ul style="list-style-type: none"> • Copy of a valid California registration/license as a structural, mechanical or electrical engineer, or a valid California license as an architect; or
Qualification Method 4		Required Supporting Documents
<input type="checkbox"/>	Possession of valid certification in all of the following: California Commercial Building Inspector, California Commercial Electrical Inspector, IAPMO certification as a California Plumbing Inspector and California Mechanical Inspector.	<ul style="list-style-type: none"> • Copies of valid ICC certifications in the following categories: <ul style="list-style-type: none"> • Certification as a California Commercial Building Inspector (I1) • California Commercial Electrical Inspector (I2), • Copies of valid IAPMO certifications in the following categories: <ul style="list-style-type: none"> • California Plumbing Inspector • California Mechanical Inspector;



Minimum Qualifications for **Class C** Exam

Class "C" Hospital Inspector		
May inspect on or more areas of construction specialty, including but not limited to the areas listed in Section 7-204(c). A Class C Hospital Inspector may not inspect complete scope of construction authorized for Class "A" or "B" inspectors.		
	Qualification Method 1	Required supporting Documentation
□	<p>High school graduation or the equivalent and <u>four years'</u> experience involving commercial or institutional building projects as the representative in testing, inspection or observation of construction for an architect, engineer, owner, local building official, local fire authority, testing lab, specialty contractor or general contractor and must possess valid certification issued by an organization specified in the California Administrative Code Title 24, Part 1, Article 19, Section 7-204(c). [Note: Experience in subsection (c)(1) may be substituted with college education with major work in architecture, engineering, building inspection and/or construction on a year-for-year basis for a maximum of two years.];</p>	<ul style="list-style-type: none"> • Highschool transcripts or copy of High School Equivalency Certificate. • Work verification form(s) showing <u>four years'</u> experience involving building projects as the representative in testing, inspection or observation of construction for an architect, engineer, owner, local building official, local fire authority, testing lab, specialty contractor or general contractor • Copies of a valid certificate(s) issued by one or more of nationally recognized organizations listed in the California Administrative Code Title 24, Part 1, Article 19, Section 7-204(c)4; or



Minimum Qualifications for **Class C** Exam (Cont.)

Qualification Method 2		Required supporting Documentation
<input type="checkbox"/>	<p>Possess a valid California registration/license as an engineer and <u>two</u> years' experience involving building projects as an architect's, engineer's, owner's, local building official's, local fire authority's, specialty contractor's or general contractor's representative in testing inspection or observation of construction and must possess at least one valid certificate issued by an organization that is listed or described in California Administrative Code Title 24, Part 1, Article 19, Section 7-204(c);</p>	<ul style="list-style-type: none"> • Copy of valid California registration/license as a civil engineer • Work verification form(s) showing <u>two</u> years' experience involving building projects of Type I or II construction as an architect's, engineer's, owner's, local building official's, local fire authority's, specialty contractor's or general contractor's representative in testing inspection or observation of construction • Copies of a valid certificate(s) issued by one or more of nationally recognized organizations listed in the California Administrative Code Title 24, Part 1, Article 19, Section 7-204(c)4; or
Qualification Method 3		Required supporting Documentation
<input type="checkbox"/>	<p>Possess a valid California registration/license as a civil, mechanical or electrical engineer, or a valid California license as an architect and must possess at least one valid certificate issued by an organization specified in California Administrative Code Title 24, Part 1, Article 19, Section 7-204(c)4.</p>	<ul style="list-style-type: none"> • Copy of valid California registration/license as a civil engineer or architect • Copies of a valid certificate(s) issued by one or more of nationally recognized organizations listed in the California Administrative Code Title 24, Part 1, Article 19, Section 7-204(c)4;



Poll Question

How many classifications are there for the OSHPD's Certified Hospital Inspectors?

- One
- Two
- Three
- No vote



What is the exam format?

Class A Exam

- Open Book Exam
 - Code Knowledge:
 - 80 questions
 - To be answered in 4 hours
 - Weighted on Administrative Regulation and Structural Discipline
 - Plan Reading:
 - 80 questions
 - To be answered in 4 hours
 - Weighted on Structural Discipline



What is the exam format?

Class B Exam

- Open Book Exam
 - Code Knowledge:
 - 80 questions
 - To be answered in 4 hours
 - Weighted on Administrative Regulation
 - Plan Reading:
 - 40 questions
 - To be answered in 2 hours
 - Not weighted on any one discipline



What is the exam format?

Class C Exams

- Open Book Exam
 - Code Knowledge:
 - 20 questions: Admin
 - 20 questions: Anchorage & Bracing
 - To be answered in 1 hour (for each exam)
 - Evenly weighed for Administrative Regulation and Anchorage and Bracing
 - Plan Reading
 - No questions



How can you best prepare for the exam?

Code Knowledge

- Gather all of the applicable code books and reference materials you will need
- Review table of contents to familiarize yourself with how to find different areas of interest quickly
- Highlight key code section titles that include a **health facilities** content
- Tab each code book for quick and easy navigation to key sections related to health facilities
- Talk with others that have taken the test to understand what to expect
- Use the **OSHPD TIO Form** as a guide for important items to know
- Commit time and energy to study for the exam every day



How can you best prepare for the exam?

Plan Reading

- Understand the general organization of plans
 - Study the organization of plans from projects on which you have worked
 - Familiarize yourself with the Table of Contents on the Title Sheet
 - Understand the meaning of project symbols and abbreviations
 - Ask questions of others about any areas of plan reading that you need to strengthen
 - Commit time and energy to study plan reading every day to prepare for the exam



Poll Question

What should you know prior to taking the Class A or the Class B Exam?

- Code Knowledge
- Plan Reading Skill
- Code Knowledge and Plan Reading Skill
- No vote



What is the Testing, Inspection and Observation (TIO) Program?

A Guide to assist **Design Professionals** in the administration of construction projects under OSHPD's jurisdiction and increases:

- Collaboration, accountability, and cooperation
- Provides assistance for the efficient development and implementation of the code-required test
- Clarifies the roles and responsibilities of the parties involved
- Better defines the milestones in each project



What is the TIO Program? Cont.

SECTION B		NOTE: Approved agencies, individuals, and all changes to the TIO program shall be identified, evaluated by the DPOR and approved by OSHPD prior to proceeding with the related work.				
Facility #:		Facility Name:		Project #:		Sub #:
DURING CONSTRUCTION DOCUMENT			DURING CONSTRUCTION			
Index #	REQUIRED (Select)	TESTS	RESPONSIBLE APPROVED AGENCY AND/OR INDIVIDUAL	COMPLIANCE VERIFICATION BY IOR (Initial/Date)	OSHPD/FDD USE (Initial/Date)	
- STRUCTURAL TESTS						
- Foundation						
B-F1	B-F1	Soil fill CBC 1705A.6 Fill material acceptance test				DSE:
B-F2	B-F2	Soil fill CBC 1705A.6 Compaction test				DSE:
B-F3	B-F3	Soil and rock anchors CBC 1811A Load test				DSE:
B-F4	B-F4	Deep foundation elements CBC 1810A.3.3.1.2, 1810A.3.1.1, 1810A.3.1.3, 1810A.3.3.2, & 1810A.3.10.4 Load test				DSE:
B-F5	B-F5	Shoring CBC 1812A Tie-Back Anchors				DSE:
B-F6	B-F6	Vibro Stone Columns (VSC) CBC 1813A Acceptance Test				DSE:
B-F7	B-F7					
B-F8	B-F8					

Sample



What is the TIO Program? (Cont.)

Maintenance and Administration

- TIO is a required element for OSHPD projects
- Design Professional of Record (DPOR) maintains all aspects of the TIO program current
- Evolving projects. OSHPD projects are rarely static...
- OSHPD projects are dynamic and require team collaboration and regular reference to the TIO for milestones



IOR Monitoring of the TIO

Although the DPORs bear the responsibility to administer the TIO, IORs also have play an important role in monitoring the TIO. Monitoring of the TIO program includes verifying that **tests and special inspections** are appropriately:

- Performed (on and off site)
- Performed by qualified entities
- Performed by independent entities, and
- Reported, including a clear description of the work tested or inspected as well as a definitive compliance statement



Who's Responsible for What?

Design Professional of Record (DPOR)

- Coordination with:
 - Owner, OSHPD Staff, IOR, and Design Team
- Gather and distribute all “Verified Compliance Reports” (VCR) and Test and Special Inspection Reports
- TIO Program



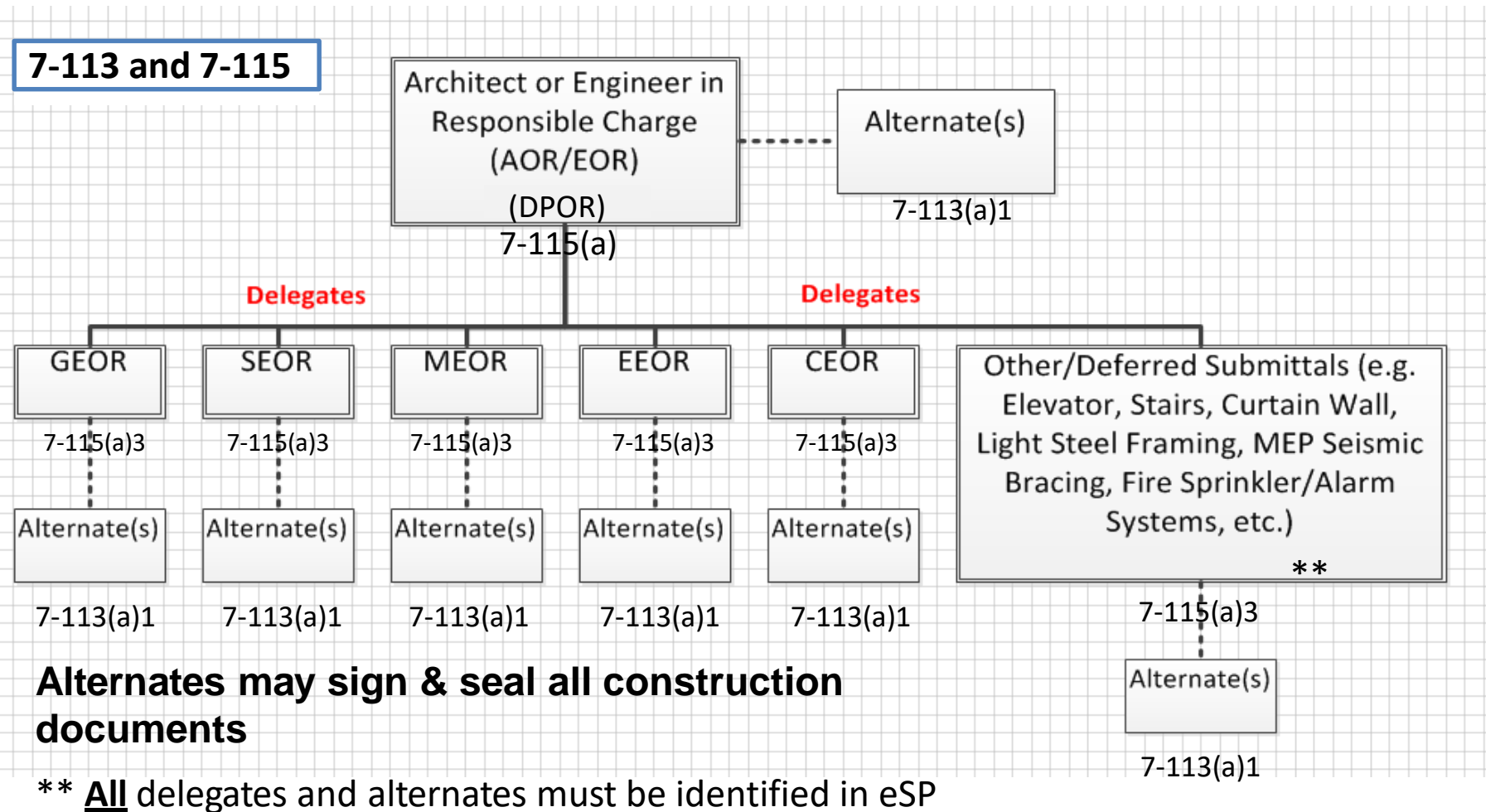
Who's Responsible for What? (Cont.)

Design Professional (Delegate)

- Coordinate with DPOR for all testing and inspections required on project
- Conducting **field visits** to observe and report conditions relative to their design
- Submitting VCRs at preidentified milestones on the TIO



DPOR, Delegates and Alternates



Who's Responsible for What? (Cont.)

Inspector of Record (IOR)

- Oversee overall quality assurance of the project, and
- Coordinate, report and validate the work done by:
 - Testing laboratories
 - Owner provided third-party agencies
 - Owner provided third-party special inspectors



Who's Responsible for What? (Cont.)

Inspector of Record (IOR)

- Gathering, maintaining and **validating** related test and inspection documentation such as:
 - Credentials of Special Inspectors (CAC 7-144),
 - Collection of OSHPD “Test and Special Inspection” reports
 - Distribution of OSHPD staff field reports to contractor, owner and DPOR



Who's Responsible for What? (Cont.)

Inspector of Record (IOR)

- Validating the work done by contractors
- Submitting “Verified Compliance Reports” (VCRs) to the DPOR as identified on TIO milestones
- Keeping records relative to “Sign Offs”, and
- Performing all IOR test and inspections identified on TIO as IOR responsibility



What do You do if There is more Than One IOR on a Job?

Inspection (CAC 7-144)

The hospital shall provide for competent, adequate and continuous inspection by one or more IORs. **When** the hospital proposes more than one:

- A lead IOR shall be identified to coordinate and communicate with the Office
- IORs shall be approved by OSHPD prior to working on the project



IOR Daily Reports

Field Records (CAC 7-145(a)6))

The CAC requires IORs to provide a “daily report” while on the job. The report shall include:

- Time of arrival and departure
- Summary of work in progress
- Deficiencies in construction and deviations from approved construction documents
- Date, time and method of correction for deficiencies and deviations



IOR Field Records

The IOR shall maintain field records on-site including:

- IOR daily reports
- All test and special inspection reports
- A list of test reports of all non-conforming materials or defective workmanship and shall indicate the method of correction
- Approved construction documents (Complete plans, specs., addenda, deferred approvals, C.O.s, etc.)
- TIO program form
- Building permit



IOR Field Records (Cont.)

Field records for **concrete** shall also include:

- Time/date of placing
- Time/date of removal of forms and shoring
- Location of defective concrete, and
- Time/date and method of correction
- Log of Changes. (includes OSHPD's determination of material change or not)



IOR Field Records (Cont.)

Field records for welding shall also include:

- ID marks of welders
- List of defective welds
- Manner of correction of defects and other related events



IOR Field Records (Cont.)

Field records for **driven pile foundations** shall also include:

- Location (i.e. gridlines, in proximity to...)
- Length
- Penetration under the last ten blows for each pile
- Description of the characteristics of the pile driving equipment.

For example:

- Name
- Model number
- General description of the equipment condition.



Deviations from Plans? What do you do?

Hospital Construction projects are often very complicated. Because of their complexity the project often require request for information (RFIs) which at times changes the details and other aspects of construction and subsequently requires the project be built out of line from the “Approved Construction Documents”.

So, what do you do?



Deviations from Plans? What do you do? (Cont.)

If the IOR encounters deviations from the approved construction documents the IOR shall:

- Make the contractor aware of the deviations.
- Deviations not corrected immediately, notify the contractor in writing,
- Copies of those notifications shall be forwarded to the DPOR, owner and OSHPD



Deviations from Plans? What do you do? (Cont.)

If the IOR encounters deviations from the approved construction documents the IOR shall:

- Make the contractor aware of the deviations.
- Deviations not corrected immediately, notify the contractor in writing,
- Copies of those notifications shall be forwarded to the DPOR, owner and OSHPD



Notices to OSHPD

The inspector shall notify the Office:

- Copies of the **deviations from the approved construction** document notices
- When the work is started or resumed on the project
- At least 48 hours in advance of the time when **foundation trenches will be complete**, ready for footing forms
- At least 48 hours in advance of the **first placing of concrete**
- When work has **been suspended** for a period of more than two weeks.



Poll Question

What are the field records of construction to be maintained by the IORs?

- Approved Construction Documents
- IOR's Daily Records (Reports)
- All Tests and Special Inspection Reports
- All of the Above
- No vote



How to be a Strong IOR

- Know the code (referenced standards, manufacturer's installation instructions and research reports)
 - Symbols on the margin
 - Conflicts between codes (referenced standards)
- Read 'approved' construction documents
 - Drawings
 - Specifications



How to be a Strong IOR (Cont.)

Communicate with the hospital owner, the DPOR, the COR and OSHPD Field Staff

- Pre-construction meeting
- Owner, Contractor and Architect's (OCA) meetings
- Identify IOR responsibilities (e.g. coordination of contacting the Approved Agency(ies) for tests and special inspections)
- Construction and Inspection Schedules
- Schedule Field Visit(s) with OSHPD Field Staff



How to be a Strong IOR (Cont.)

- Clarifications/Interpretations
- Non-Material Altering Changes (NMAs), CAC 7-153(b)
 - [CAN 2-107.4](#) – Amended Construction Documents 2010 CBSC
- Material Altering Changes (ACDs), CAC 7-153(a)



OSHPD Field Monitoring

7-147. Observation by the Office.

(a) During the construction, of any health facility, the Office shall make such observation as in **its judgment is necessary or proper** for the enforcement of these regulations and all applicable parts of the *California Building Standards Code*. Whenever the Office finds a violation of these regulations and/or applicable parts of the *California Building Standards Code* that requires correction, the citation of the violation shall be issued to the hospital governing board or authority in writing and shall include a proper reference to the regulation or statute being violated.



OSHPD Field Monitoring

7-213. Monitoring of the hospital inspector of record's performance.

When the Office determines that a Hospital Inspector of Record has violated a provision of these regulations or that **the inspector is not competently or adequately providing inspection** of a facility to ensure the hospital construction is in compliance with the construction documents, the Office will notify that inspector, the hospital governing board or authority, and the architect and/or engineer in responsible charge. The written notification will include the Office's findings, reference to the statute and/or regulation being violated, and statement of the Office's intent to issue a "stop work" order unless the violation ceases and is rectified immediately.



IORs Good Performance

- Be Responsible
- Be respectful
- Know the Codes
- Know the project
- Know your duties
- Be collaborative/good communication with Owner Rep, OSHPD Field Staff, CM, GC, Designers
- Guide for Working on Projects Under OSHPD Jurisdiction
 - <https://oshpd.ca.gov/construction-finance/resources/training-education/>



Poll Question

What are the responsibilities of the IORs?

- Work under the direction of the DPOR
- Conduct continuous inspection of all parts of the work of construction per the approved construction documents
- Maintain field records
- All of the Above
- No vote



Guest Speaker

Mr. David Karina

American Construction Inspectors Association
(ACIA)



Questions

