

PUC 2019 August 13-14, 2019 Meeting Minutes

SAN FRANCISCO AIRPORT WESTIN

Participants

Provisions Update Committee

David Bonneville, Degenkolb Engineers (Chair)
Pete Carrato, Bechtel Corporation
Kelly Cobeen, Wiss Janney Elstner
C.B. Crouse, AECOM (absent)
Dan Dolan, Washington State University
Anindya Dutta, Simpson Gumpertz & Heger
S.K. Ghosh, S.K. Ghosh Associates
John Gillengerten, Consulting Engineer
Ron Hamburger, Simpson Gumpertz & Heger (absent)
Jim Harris, James Harris & Associates
William Holmes, Rutherford & Chekene
John Hooper, Magnusson Klemencic Associates
Gyimah Kasali, Rutherford & Chekene
Charles Kircher, Charles Kircher & Associates
Philip Line, American Wood Council
Bret Lizundia, Rutherford & Chekene
Jim Malley, Degenkolb Engineers
Bonnie Manley, American Iron and Steel Institute
Robert Pekelnicky, Degenkolb Engineers
Rafael Sabelli, Walter P. Moore
John Silva, Hilti
Greg Soules, CB&I
Jonathan Stewart, University of California Los Angeles

BSSC Members and Associates

Bahram Zarin-Afsar, BSSC Board
Jennifer Goupil, ASCE/SEI, BSSC Board
Philip Caldwell, SE (call in)
Mike Ganna, AISC
Jon-Paul Cardin, AISI
Jon Heintz, ATC

USGS

Nicolas Luco
Sanaz Rezaeian

NIST

Matthew Speicher

FEMA /NIBS

Mai Tong, FEMA

Bob Hanson, FEMA

Andrew Herseth, FEMA

Jiqiu Yuan, NIBS/BSSC

Contents

| | | |
|-----|--|----|
| 1. | CALL TO ORDER, BONNEVILLE | 3 |
| 2. | APPROVAL OF LAST PUC MEETING MINUTES, BONNEVILLE | 3 |
| 3. | 2020 CYCLE SCHEDULE REVIEW, FUTURE PUC MEETINGS, BONNEVILLE..... | 3 |
| 4. | ASCE 7 SSC UPDATE, HOOPER..... | 3 |
| 5. | FEMA/BSSC UPDATE, MAI TONG/JIQIU YUAN..... | 3 |
| 6. | ISSUE TEAM 1 REPORT | 4 |
| 7. | PROPOSAL IT10-4 (NO.23) MPRS PROPOSAL (CH 22), SEISMIC VALUE MAPS..... | 5 |
| 8. | PROPOSAL IT 7-1 (NO.33) CHAPTER 20, SITE CLASSIFICATION, KASALI | 6 |
| 9. | PROPOSAL JPS-2 (NO.37) ON V/H RATIO, STEWART | 6 |
| 10. | PROPOSAL JPS-1 (NO.32) DETERMINISTIC CAPS, STEWART | 7 |
| 11. | ISSUE TEAM 4 REPORT | 7 |
| 12. | PROPOSAL RS-1 (NO.11) DRIFT AND DEFORMATION, SABELLI | 8 |
| 13. | PROPOSAL JM-1 (NO.9) STRUCTURAL SYSTEM SELECTION (MO BALLOT), MALLEY... | 9 |
| 14. | PROPOSAL IT 5-2 (NO.38) F _p LATERAL FORCE, GILLEGERTEN | 9 |
| 15. | ISSUE TEAM 9 UPDATE, COBEEN..... | 9 |
| 16. | IT 6 -8 (NO.31), COUPLED ANALYSIS REQUIREMENTS (MO BALLOT), SOULES | 10 |
| 17. | PROPOSAL PL-1 (NO. 43) CLT SHEAR WALL, LINE..... | 10 |
| 18. | IT 7-4 (NO.36) PART 3 WALL PRESSURES STEWART (MO BALLOT), STEWART | 12 |
| 19. | IT2-7 (NO.40) C _D =R RESOURCE PAPER, COBEEN..... | 12 |
| 20. | IT3 MODAL RESPONSE WHITE PAPER PART 3 PROPOSAL..... | 12 |
| 21. | ONGOING SOIL STRUCTURE INTERACTION RESEARCH (ATC 144), LIZUNDIA..... | 12 |
| 22. | FUTURE MEETINGS | 12 |

1. Call to order, Bonneville

David Bonneville opened the meeting at 8:30 a.m. with member introductions, a reading of the anti-trust statement, and a review of the agenda.

2. Approval of Last PUC Meeting Minutes, Bonneville

The minutes were approved unanimously (19 PUC members in the room) and the meeting minutes will be posted on the BSSC website. https://www.nibs.org/?page=bssc_PUC

3. 2020 Cycle Schedule Review, Future PUC Meetings, Bonneville

- Next PUC meeting, December 4-5, 2019 in CA, proposal due 10/20/2019
- Future PUC meeting and BSSC workshop, TBD

David stated that the intent has been for the August ballot to be the last substantive technical ballot in order to align with the ASCE 7-22 timeline.

| | Proposal to BSSC, no later than | Post in BSSC Ballot system | PUC Ballot | Proponent Response | PUC discussion |
|-----------|---------------------------------|----------------------------|------------|--------------------|--------------------|
| Ballot #8 | 10/20/2019 | Within 3 days | 3 weeks | 3 weeks | December 4-5, 2019 |

4. ASCE 7 SSC update, Hooper

ASCE 7 SSC is about 40% through the cycle, and is coordinating closely with PUC. The CLT proposal is being reviewed by the SSC as it goes through the PUC ballot process.

5. FEMA/BSSC Update, Mai Tong/Jiqiu Yuan

Mai: Congratulations that most Part 1 proposals are done; in next fiscal year, FEMA/BSSC will get the 2020 NEHRP Provisions complete and printed; call for input on the items and issues recommended for next cycle; outreach effort including a BSSC workshop and presentations at conferences (like the National Earthquake conference); FEMA NEHRP special publication to capture the major achievements over the past three decades is being developed by BSSC.

JQ: BSSC 40th anniversary celebration event will be postponed to next year, and the next PUC meeting will be held as usual in San Francisco area instead of DC; the BSSC interface tool to check the new seismic values is ready; we have a series of outreach activities including the NEHRP morning session during the upcoming SEAOC convention.

6. Issue Team 1 report

- IT 1-2 (No. 17) Function recovery proposal on essential facilities: (MO ballot)
 - ✓ SEAC's comments: adding egress requirement for nonbuilding structures but take out "where required". PUC agreed it is editorial change and no need for rebalot. Accept all other editorial changes.
 - ✓ SEAONC's comments: comment to take out operator or AHJ, non-preservative. Comment on combing testing and analysis, non-preservative. No objection from PUC
 - ✓ SEAOSC's comments: no effect on this proposal

All changes are editorial and the proposal is complete

- IT1-3 (No.18) Essential Facility Reliability (MO ballot)
 - ✓ All comments are editorial and accepted all the suggested changes.

Motion by Soules to approve and accept all the editorial changes for both IT1-2 and IT1-3 proposals, 2nd by Malley, Yes, 18, no, 0, not vote 1. The motion carried and the proposals will go into 2020 NEHRP Provisions.

- IT 1-7 (No.39) Resilience white paper, Bonowitz
 - ✓ General discussion on PUC taking responsibility for this, starting early in next cycle
 - ✓ All the responses are provided in a spreadsheet, available within the BSSC Portal
 - ✓ Silva's comments 2, 8, 10: withdrawn.
 - ✓ Silva's comment 12: editorial preservative.
 - ✓ Bonneville's comment 1: non-responsive
 - ✓ Bonneville's comment 2: editorial persuasive
 - ✓ Bonneville's comment 3: editorial, add "transitioning"
 - ✓ Bonneville's comment 4: semi bounded, added a clarification, resolved
 - ✓ Cobeen's comment on "Target": this is more a concept, not provisions. Editorial preservative.
 - ✓ Cobeen's comment on multi hazards: non-preservative
 - ✓ Harris' comment 1: discussed and resolved.
 - ✓ Harris' comment 2: suggest word "selection of a ground motion", agree it is non-persuasive
 - ✓ Harris' comments 3 &4: withdrawn
 - ✓ Lizundia's comments 1&2: withdrawn
 - ✓ Lizundia's comment 3: discussed further below
 - ✓ Lizundia's comment 4: editorial persuasive (acknowledge this is not the only way)
 - ✓ Lizundia's comment 5: non-persuasive
 - ✓ Lizundia's comments 6/7: add why a disclaimer would be necessary. What "target" means. Have words on uncertainties of the expectation. Editorial persuasive

From Jim Harris during the meeting: "Absent a reliable method of calculating T_{FR} (estimated functional recovery time) for a specific new building design, it might be equally reliable, in a first generation functional recovery standard, to presume a value of T_{FR} by reference to a consensus checklist of design features or strategies associated with different recovery times. This appears feasible (and probably no less reliable at this stage than a calculation) because the range of actual expected performance levels for a new code-designed building is semi-bounded by the nature of

the current code. That is, the current building code (and the *Provisions* and ASCE 7) contains a set of design strategies and requirements already associated with risk categories and seismic design categories.

It is important to recognize that T_{FR} is a value that involves considerable uncertainty. Variability in ground motion, quality of engineering knowledge, methodologies, and application, consistency of materials, fabrication, and construction, and long term degradation all contribute and can be dealt with in a fashion similar to how they are currently handled for life safety objectives. Additional issues that contribute to the uncertainty in T_{FR} include post-disaster shortages of skilled inspectors for assessment, shortages of repair materials and labor, shortages of trained personnel in building regulatory processes, and so on. A major goal for future advancement is to reduce the uncertainty involved, while recognizing that it is very unlikely that the uncertainty could ever be eliminated.”

- ✓ Malley’s comments 1, 2, 3: editorial
- ✓ Malley’s comment 4: discussed earlier
- ✓ Manley’s comment: already discussed and resolved (may address the table issue)
- ✓ Stewart’s comments: resolved.
- ✓ Herseth’s comment 1: will refer to DRRRA (Disaster Recovery Reform Act). FEMA may have the definition in February 2020
- ✓ Tong’s comments: most editorial and Bonowitz will go through with Mai (NIST may also provide some comments later through MO representatives)
- ✓ Silva’s comment 6: resolved
- ✓ Silva’s comment 7: resolved
- ✓ Silva’s comment 11: resolved
- ✓ Silva’s comment 14: editor persuasive, change “shock” to “event”
- ✓ Silva’s comments 15/16/17: discussed in responding to other comments
- ✓ Bonneville’s additional comment: note that not all lateral systems are equal in terms of damage and recovery performance. This should be reflected in the white paper.

Motion by Silva to move the proposal with all editorial changes to MO ballot , 2nd by Soules, yes 20, no 0, not voting 0. Motion carried. Note, comments by NIST were received and incorporated after the PUC meeting and did not change the substance of the proposal.

- SDC consolidation discussion
 - ✓ It was noted that at an IT10 meeting earlier this year, there was a discussion regarding consolidation of SDC’s D, E and F. John Gillengerten volunteered to draft a PUC proposal and Bonnie Manley volunteered to help.

7. Proposal IT10-4 (No.23) MPRS proposal (Ch 22), seismic value maps

- The simplified procedure in Chapter 12 still has F_a and F_v , which should be updated. This will be fixed in ASCE, and there should still be a PUC proposal by IT 2 to fix it.
- Proposed response to Ch 22 comments, Luco
 - ✓ Hooper’s comments: Editorial persuasive. Provide S_{MS} , S_{M1} , PGA maps for default site classes
 - ✓ Carrato’s comments: withdraws the negative vote.

- ✓ Hamburger's comments: response: doi address doesn't change. The data set calculates results (for hazards), the USGS web service tool interpolates the data between grids. Suggestion: create a "title/definition" (name a database) with reference to a URL, which can be updated. This should be done now at PUC, not push to ASCE SSC. This is considered editorial.
- ✓ Online ground motion: suggestion: data file should include all the information
 - risk target (probabilistic), 84th percentile (deterministic) and deterministic lower limit
 - combined MCE_R spectra, S_{MS} and S_{M1} value
 - Uniform hazard, 84th-percentile, and deterministic lower limit PGA and PGA_M values.
- ✓ Kircher comments: preservative, created new tables that are dedicated to SDCs. (previously, in the commentary, only S_s and S_1 comparisons, now also have S_{MS} and S_{M1} comparisons).
- ✓ Revised ground motions with basin effect: revised values, only a few sites with minor changes with biggest change in Santa Barbara.

Motion by Kircher to accept it as it presented with all modifications and move to MO, 2nd by Silva, yes 20, no 0, not vote 0. Motion carried.

8. Proposal IT 7-1 (No.33) Chapter 20, site classification, Kasali

- The proposal was approved in PUC April meeting. This is to address comments from ASCE SSC on penalty factor 1.5 vs 1.3. The issue of 1.5 factor is that it can cross three site classes
- Carrato comments: withdrawn
- SK's comments: 1st comment, withdrawn; 2nd comment: editorial preservative
- Harris' comments: Not responsive, resolved
- Silva's comments: Editorial preservative
- Stewart's comments: will change the penalty factor. PUC agrees it is conceptually simple and it is not needed for rebalot.

Motion by Gymah that accept the proposal (adding history info that it was approved in a previous PUC meeting) and move to MO, 2nd by Line, yes 19, no 0, not voting 0. Motion carried.

9. Proposal JPS-2 (No.37) on v/h ratio, Stewart

- Section 11.9 currently vertical response is determined based only on S_{MS}
- Proposal is to modify equation to derive spectra from S_M at vertical period
- Comments resolution
 - ✓ Carrato's comments: resolved.
 - ✓ CB's comments: 105 degree comment, change made; comment on equations for F_{md} , equation added; comment on don't use S_s in table 11.9-1, changed to S_{aM} ; and comment on extend to 10 sec, change made.
 - ✓ SK's comments: persuasive
 - ✓ Hamburger's comments: Change made. Procedures refer to Ch 21 not Ch22.
 - ✓ Hooper's comments: persuasive

- ✓ Lizundia's comments: editorial persuasive
- ✓ Pekelnicky's comments: persuasive
- ✓ Silva's comments: comment on basis for longitude, provided; comments on factor 1.05 has too many significant digits, discussed and PUC recommended use 1.05
- ✓ Soule's comments: persuasive. Should be $2/3 S_{AM}$ instead of $2/3 S_{MS}$
- ✓ Kircher will update Ch11 to 105 (current 100 degree) in the MRPS proposals.

With the changes suggested by PUC comments, the proposal will be resubmitted for PUC rebalot.

10. Proposal JPS-1 (No.32) Deterministic Caps, Stewart

- Cobeen's comments: withdrawn
- Hamburger's comments: editorial
- Silva's comment 11: resolved
- Silva's comment 12: resolved
- Silva's comment 13: instead of fairness, use "uneven" or "inconsistent"
- Harris perspective that other hazards (wind, snow) accept higher risk; cost discussion, not linear cost increase from low, to moderate, and high seismic. Jim Harris will provide some language.

Motion by Stewart to accept the latest draft with additional comments from Jim Harris on risk and cost and move to MO ballot, 2nd by Silva, yes 18, no 0, not voting 0. Motion carried.

11. Issue Team 4 report

- IT 4-2 (No. 30), C-PSWCF (MO ballot)
 - ✓ SEAOSD: non-persuasive, no objection from PUC
 - ✓ SEAC: number of archetypes, non-persuasive, no objection from PUC. About the comment on 50% increase, this will need update P695, which is beyond the scope of work and could be potentially investigated in future work.
 - ✓ SEAONC:
 - $C_d=R$ comment: added some explanation - refer to C12.2.1; also added some comparison with the coupled concrete shear wall system. Suggested solution: move forward with this proposal, the comment is partially editorial preservative and commentary will be added.
 - Omega 2.5 comment: non-preservative
 - Other comments: non-preservative
 - ✓ SEAOC: will add a few sentences to clarify
 - ✓ SEA OCC: comment 1: non-persuasive; comment 2: non-persuasive; comment 3: non-persuasive; comment 4: non-persuasive; comment on providing experimental data of yielding mechanisms: it was provided in the report.

Motion by SK to find the negatives non-persuasive based on response provided, 2nd by Cobeen, yes, 17, no 0, not voting 1. Motion carried.

Motion by SK to accept the proposal with addition a comment to C12.2.1, 2nd by Gillengerten, yes 18, no 0, not voting 0. Motion carried and the proposal will move to 2020 NEHRP Provisions.

- IT 4-1 (No.29) Ductile Coupled Walls (MO ballot)
 - ✓ SEAC NO vote:
 - Accidental torsion effects are included in the 3-D archetype design, but excluded in the 2-D nonlinear model runs. This may add conservatism to the linear design, which is not reflected in the nonlinear analysis. Need clarification on the how big the change is (SK agreed to follow with John Wallace).
 - The demand/capacity ratios show there is some conservatism in the 12-story shear wall design. Found Non-Persuasive.
 - Motion by SK find the negative other than the accidental torsion is Non-Persuasive, 2nd by Soules, yes 16, no 0, not voting 2. Motion carried.
 - After reading John Wallace's email response regarding accidental torsion, SK moved to find the negative non-persuasive, 2nd by Hooper , yes 16, no 0, not voting 0. Motion carried.
 - ✓ SEACON:
 - Cd=5.5/8, non-persuasive
 - ✓ SEAOSC: resolved.
 - ✓ SEAOC N:
 - Motion by SK to find the first part of negative is non-persuasive, 2nd by Harris, yes, 17, no 0, not voting 1. Motion carried.
 - SK clarified part 2 with John Wallace.
 - Motion by SK to find the 3rd part of negative non-persuasive, 2nd by Dolan, yes, 16, no 0, not voting 2. Motion carried.
 - About Grade 40 Rebar negative, motion by SK find it non-persuasive, 2nd by Harris, yes 16, no 0, not voting 1. Motion carried.

All negative comments were resolved. Motion by SK to find all reponses are acceptable, 2nd by Cobeen, yes, 17, no 0, not voting 2. Motion carried and the current version will move to 2020 NEHRP Provisions.

- IT 4 shear wall white paper update. This is a part 3 paper and will be submitted for next PUC ballot.

12. Proposal RS-1 (No.11) Drift and Deformation, Sabelli

- Hamburger's negative comments:
 - Motion by Rafael to find Comment 1 non-persuasive, 2nd by Gillengerten, yes 18, no 0, not voting 1. Motion carried.
 - Comment 2: editorial persuasive.
 - Motion by Rafel to find Comment 3 (C_d) non-persuasive, 2nd by Dolan, yes 19, no 0, not voting 0. Motion carried.
- Cobeen's comments:
 - Comment 3, potential an IT 9's part 3 proposal, no conflict
 - Comment 5, deleted figure 12. 8-2, added a commentary figure
- Silva's negative comment: will need to address drift table 12.12-1 in another proposal. Silva is fine with the responses and a separate proposal will be developed for next PUC ballot.

Motion by Sabelli to accept the proposal with all changes and move to MO ballot, 2nd by Soules, yes 19, no 0, not voting 0. Motion carried.

13. Proposal JM-1 (No.9) Structural System Selection (MO ballot), Malley

- NAHB: motion by Malley to find it non-persuasive, 2nd by Hooper, yes 17, no 0, not voting 0. Motions carried.
- ASCE comments: editorial persuasive
- SEAC comments: editorial persuasive (added the missing two paragraphs)
- SEAOSC comments: Not responsive
- SEA OCC comments: motion by Malley find it non-persuasive, 2nd by Hooper, yes, 18, no 0, not voting 0. Motion carried.

All comments were resolved and move to 2020 NEHRP Provisions.

14. Proposal IT 5-2 (No.38) F_p Lateral Force, Gillengerten

- Bonneville's comments: about simplification to allow use of Eq. 13.3-5 accepted; about non structural vs diaphragm height profile comment, explanation to be added
- Hooper's comments: resolved
- Cobeen's comments: resolved
- Gillengerten's comments: added additional commentary on the changes to the design of rooftop structures and equipment supports
- Hamburger's comments: Comment 1: updated the definition of "distribution system"; Comment 2, persuasive.
- Harris's comments: resolved.
- Silva's comments: change negative vote to yes with reservation. The anchorage flexibility research is ongoing, which could be a potential topic for next cycle.

PUC comments will introduce additions to commentary, but not to the substance of the proposal.

Motion by Holmes to approve it as modified and move it to MO, 2nd by Soules, yes 15, no 1, not voting 3. Motion carried.

15. Issue Team 9 update, Cobeen

- IT9-3 (No.26) Special Seismic Detailing (MO ballot)
 - ✓ Motion by Cobeen to approve w/o revisions, 2nd by SK, yes 19, no 0, not voting 0. Motion carried. Move to 2020 NEHRP Provisions.
- IT9-4 (No.27) R_s_alternate, (MO ballot)
 - ✓ No comments from MO. Proposal complete.

- ✓ Motion by Cobeen to accept as it is and move to provisions, 2nd by Manley, yes 19, no 0, not voting 0. Motion carried. Move to 2020 NEHRP Provisions.
- IT9-5-(No.28) ASCE 7 12-10-4 R_{diaph} RWFD, (MO ballot)
 - ✓ Motion by Cobeen to accept it with editorial changes, 2nd by Malley, yes 19, no 0, not voting 0. Motion carried and move to 2020 NEHRP Provisions.
- IT 9-6 (No.41) Diaphragm Design methods commentary
 - ✓ Motion by Cobeen to approve it with all the revisions and move to MO ballot, 2nd by SK, yes 19, no 0, not voting 0. Motion carried.
- IT 9-8 (No. 42) composite concrete filled metal deck diaphragms, Matt Eatherton
 - ✓ Motion by Cobeen to (work with Bret and Kelly to respond the comments) move to MO, 2nd by Dolan, yes 18, no 0, not voting 0. Motion carried.
- IT9 updates
 - ✓ IT 9-7, mandatory use of RWFD, (primarily big box buildings), failed within IT 9 ballot
 - ✓ IT 9-9, resource paper developing R_s, will be balloted by IT 9 in near future.
 - ✓ IT9-10 Resource paper planned (possibly part 1 or 2) about force level and amplification of diaphragm deflection

16. IT 6 -8 (No.31), Coupled Analysis Requirements (MO Ballot), Soules

- SEAC comment: persuasive on the commentary and non-persuasive on the explanation the 25% rule
- SEAOC: motion by Soules to find it non-persuasive (except refer back to Ch13), 2nd by Hooper, yes 17, no 0, not voting 0. Motion carried.

Motion by Soules to approve the revised version, 2nd by Hooper, yes 16, no 0, not voting 0. Motion carried and move to 2020 NEHRP Provisions.

17. Proposal PL-1 (No. 43) CLT Shear Wall, Line

- Review of the procedure for failed proposals: option 1. Review the comments, revise and resubmit for next ballot; option 2. Request PUC to reconsider (requires 2/3 vote) and resolve the comments
- Overview on the additional information (before PUC vote)
 - ✓ New materials provided: peer review report; addendum; summary issues
 - ✓ Peer review panel on P695 study: Kircher, Dolan, Cobeen

- Motion made by Phil Line to invoke the procedure section to allow comments resolution without re-ballot, 2nd by Harris, yes 13, no 4, not voting 3. Motion carried and PUC proceeds to resolve comments.
- PUC Discussion: load path, design as a whole building, connection, material requirements, diaphragms requirements
- Comments resolution
 - ✓ Bonneville's No vote:
 - Comment 1 about system/building: motion by Line to find it non-persuasive, 2nd by Dolan, yes 10, no 3, not voting 6. Motion carried.
 - Motion by Line to include proposed response in the commentary and find remaining 3 comments non-persuasive, 2nd by Dolan, yes 8, no 6, not voting 4. Motion failed.
 - Comment 2: Motion by Line to accept the proposed response, 2nd by Silva, yes 16, no 0, not voting 3. Motion carried.
 - Comment 3: Motion by Line to accept the proposed response, 2nd by Soules, yes 15, no 1, not voting 3. Motion carried.
 - Comment 4: withdrawn
 - ✓ Carrato's No vote: Motion by Line to approve the proposed response, 2nd by Cobeen, yes 17, no 0, not voting 2. Motion carried.
 - ✓ Harris' comments (also part of Carrato and Bill Holmes' comments): Motion by Line to approve the proposed response to the 4:1 aspect ratio comment, 2nd by Cobeen, yes 13, no 3, not voting 2. Motion carried.
 - ✓ Cobeen's comments: Motion by Line to accept the proposed response, 2nd by Dolan, yes 16, no 0, not voting 3. Motion carried.
 - ✓ SK's comments: Motion by Line to find SK's comments with the responses provided non-persuasive, 2nd by Silva, yes 15, no 1, not voting 2. Motion carried.
 - ✓ Lizundia's comments: resolved.
 - ✓ Bonnie's comments: Comment on ASTM A653 steel, and other comments, withdrawn.
 - ✓ Silva's comments: Motion by Line to approve the proposed response, 2nd by Cobeen, yes 11, no 1, not voting 6. Motion carried.
 - ✓ Malley's comments:
 - Comment on Omega, withdrawn;
 - Motion by Line to find Comments 2,3,4 non-persuasive, 2nd by Cobeen, yes 7, no 5, not voting 1. Motion failed.
 - Comment 5, withdrawn
 - Comments 6 and 7: resolved
 - Comment 8: withdrawn
 - Comment 11: will follow up with Jim Malley
 - Due to time constraints, the remaining Malley comments were not addressed.
 - ✓ Due to time constraints, the Pekelnicky's comments were not discussed.

Phil stated that a revised proposal will be submitted for next PUC ballot.

18. IT 7-4 (No.36) Part 3 wall pressures Stewart (MO ballot), Stewart

- SEAOS's comments. Non persuasive. Motion by Stewart to move to Provisions, 2nd by Soules, yes 18, no 0, not voting 1. Motion carried and move to 2020 NEHRP Provisions.

19. IT2-7 (No.40) Ca=R Resource paper, Cobeen

- Bonneville's comments: persuasive.
- Hamburger's comments: Comment 1, same as Bonneville's. Comment 2: persuasive, changes were made.
- Harris' comments: editorial persuasive, languages added.
- Lizundia and Malley's comments: Editorial persuasive
- Silva's comments: persuasive. Negative withdrawn by Silva.

Motion by Cobeen to approve it with the revisions and move to MO, 2nd by Soules, yes 19, no 0, not voting 0. Motion carried.

20. IT3 Modal response white paper part 3 proposal

- The proposal was shared with PUC members before the meeting and will be submitted for next PUC ballot.

21. Ongoing soil structure interaction research (ATC 144), Lizundia

- Case studies
- SSI tech brief for practicing engineers

22. Future Meetings

PUC will have its next meeting on December 4-5, 2019.