



Approved by General Counsel

TR-14 Meeting Report

Date(s): 04/29/2019 - 04/30/2019

Location: Dallas, TX

Approved: 05/29/2019



April 30, 2019

TR-14 Structural Standards for Communication and Small Wind Turbine Support Structures Engineering Committee

(<http://www.tiaonline.org/all-standards/committees/tr-14>)

MEETING REPORT

Date: April 30, 2019
 Time: 8:30-17:315
 Location: The Westin Dallas Park Central
 12720 Merit Drive
 Dallas, TX 75251, USA
 Meeting Room: Salon D
 Chair: John Erichsen, PE, SE
 Vice Chair: Mark Malouf, PE
 Secretary: Bryan Lanier, PE, SE

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1. Administrative/General Business

1.1 Call to Order

- First Motion: Scott Kisting
- Second Motion: Scott Haines
- Motion approved: Motion approved



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1.2 Attendance (Call Quorum, Introductions, Roster)

- Introduction of Chairman, Vice-Chairman, Secretary, Steering Committee and TIA staff
- Attendance Taken for Quorum (One company, one vote – section 5.2.2 ECOP)
 - Quorum Achieved
- Introduction
- Meeting [Roster](#) sign in code: 6801
- Distribution and Numbering of Documents
- TR-14 email reflector address: tr14@tiacomm.org
- TR-14 FTP site: <http://ftp.tiaonline.org/TR-14/>

1.3 Current Meeting Agenda Review and Approval

- First Motion: Scott Kisting
- Second Motion: Scott Haines
- Current meeting agenda approved

1.4 Previous Meeting Report Review and Approval

- First Motion: David Hawkins
- Second Motion: Chad Tuttle
- Previous meeting report approved

1.5 TIA Intellectual Property Rights (Early Disclosure Policy)

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The chair noted the IPR policy and early disclosure request and asked if there were any knowledge of patents, the use of which may be essential to any document being considered during this meeting that anyone would like to disclose at this time. No IPR was identified.

1.6 Chair's Report and General Items

- John Erichsen commented on the use and acceptance of ANSI/TIA-222-H, with respect to industry circles and governmental enforcement. Also noted the confidence within leadership at OSHA regarding ANSI/TIA-322.
- The attendees were informed that TIA is actively seeking participation in projects from the user and general interest communities.
- First Motion: Scott Kisting
- Second Motion: Jim Kyriacopoulos
- Chair report approved
- Chair recognized three documents:



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- TR-14 Committee Standards Development Process
- TR-14 Steering Committee – Operating Procedures
- TR-14 Ad Hoc Groups – Operating Procedures
- Purpose of these is to document the development and implementation of the Development Cycle, Steering Committee and Ad Hoc Groups procedures.
- Chair noted the work of the existing steering committee and the formulating committee reviewing these documents
- Comments from the floor were solicited. No comments received.
- Chair requested hand vote to approve for use. Unanimous approval.

1.7 TIA Report and General Items

- Disposition of ANSI/TIA-322
 - First Motion to reaffirm: Scott Haines
 - Second Motion: Joe Farinella
 - Reaffirmation of ANSI/TIA-322 approved unanimously by a quorum vote
- Withdrawal of ANSI/TIA-1019A
 - First Motion: James Ruedlinger
 - Second Motion: Scott Kisting
 - Withdrawal of ANSI/TIA-1019A as an active standard approved unanimously by a quorum vote
- Opening of ANSI/TIA-222-H, Addendum 1
 - Mark Malouf, Bryan Lanier and David Brinker explained the reasoning for the publishing / release of Addendum 1 to ANSI/TIA-222-H. Main reasons for opening a project, Addendum 1, are to address anchor bolt derivation concerns as illustrated by Matt Branagan and to address concerns for a ASCE7 Seismic Proposal by Bryan Lanier to reference ANSI/TIA-222-H as the design standard for antenna supporting structures. Various edits / updates to the following sections (specific details can be found on the FTP site noted above):
 - 2.6.7 – General edits
 - 2.7.4.1 – Clarification language added
 - 2.7.7.1 – General edits
 - 2.7.7.2 – General edits and clarification language added
 - 2.7.8 – Significant updates to the seismic standards
 - 2.7.8.1 – Amplification factor updates and general edits
 - Table 2.8a – Clarification language regarding flat plate projection
 - Table 2-11 – Updates to F_a values and details
 - Table 2-12 - Updates to F_v values and details
 - A2.7.8 – General edits
 - 4.4.3 – Updates on design thicknesses for A1085 steel
 - 4.9.9 – Significant updates to the anchor bolt calculation, largely centered around use of gross area vs. net area in compression and shear resistance combined with compressive loading
 - Page 4-4 – Updated definition of t
 - 4.6.3.1 – General edits
 - 4.9.11.3 – Updates use of gross vs. net area
 - 9.6 – Additional language regarding anchor rod development
 - 13.3.3 – General edits



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- 15.7 – Update regarding use of grout in compression as an exception
- 17.12.4.4 – General edits
- 17.12.4.5 – General edits
- 17.12.4.6.1 – Updates to fillet welds
- 17.12.5.2 – General edits
- Table 17-10 – General edits
- 18 – Update reference from ASSE to ASSP
- Annex D – General edits
- Annex U – Update reference from ASSE to ASSP
- First Motion to open project for ANSI/TIA-222-H, Addendum 1: Mark Malouf
- Second Motion: Ronnie Glover
- Chair asked for questions / objections and received none
- Opening of Addendum 1 unanimously approved
- Opening of ANSI/TIA-222-H, Addendum 1, a 45 day ANSI Ballot
 - First Motion: Lance Cooke
 - Second Motion: Madison Batt
 - Chair asked for questions / objections and received none
 - Opening of a 45 day ANSI ballot for ANSI/TIA-222-H Addendum 1 , upon completion of ANSI PINS public notification, unanimously approved
- Publishing of ANSI/TIA-222-H, Addendum 1, assuming no negative votes or technical comments on the ANSI ballot
 - First Motion: John Wahba
 - Second Motion: Hanming You
 - Chair asked for comments, objections. None were received
 - A motion was made and unanimously approved to publish ANSI/TIA-222-H, Addendum 1 assuming no negative votes or technical comments on ballot for ANSI/TIA-222-H Addendum 1
- Opening of a project for ANSI/TIA-222-H, Addendum 2, to address general topics
 - First Motion: Aaron Poot
 - Second Motion: Scott Kisting
 - Chair asked for comments, objections. None were received.
 - Opening of a project for ANSI/TIA-222-H Addendum 2 unanimously approved
 - Mark Malouf, the chairman of Task Group 3, called for interest - technical experts to join the TG3 to work on Addendum 1 and 2.
- IBC Update
 - Nothing significant to report currently
 - Spiro Soukis will monitor current change proposals
 - Will update with 2021 IBC to include Addendum 1 and potentially 2, as well as remove the exception language from the IBC commentary

1.8 TR-14 Elections

- John Erichsen and Mark Malouf were both honored for their significant contributions and leadership with TR-14, recognized by Marianna Kramarikova and David Bain, both from TIA
- As announced, TR-14 elections took place.
- TIA announced receipt of nomination and letter of support from ATC for the chair of TR-14 to support Bryan Lanier. TIA staff asked for nominations from the floor. None were received.



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- Motion to acclaim Bryan Lanier as a chair of TR-14: Scott Kisting
- Second Motion: David Hawkins
- TIA asked for objections to Bryan Lanier's acclamation as the Chair of TR-14. None were received. Election approved, Bryan Lanier elected as new Chairman of TR14
- TIA announced receipt of nomination and letter of support from Paul J Ford and Company for Vice-chair of TR-14 for David Hawkins TIA staff asked for nominations from the floor. None were received.
 - Motion to acclaim David Hawkins as a Vice-chair of TR-14: Mark Malouf
 - Second Motion: Brian Reese
 - TIA asked for objections to David Hawkins's acclamation as the Vice-chair of TR-14. None were received. Election approved, David Hawkins elected as new Vice-Chairman of TR14
- With Bryan Lanier election to Chairman, Secretary position become vacant. Bryan Lanier appointed Chris Ply as new Secretary, TR-14.
- TIA congratulated the newly elected leadership.

1.9 Government Liaison

- Scott Kisting gave an update regarding a meeting with OSHA in Washington DC on April 17, 2019. Bryan Lanier, James Ruedlinger, Michelle Kang, Scott Vance and Dale Heath from TR-14 also attended. Bryan Lanier's presentation highlighted general updates and specific construction and climbing details from ANSI/TIA-322. Michelle Kang spoke on the TSB-5053 mount standards. James Ruedlinger spoke about the impact / use of ANSI/TIA-322 and the coordination with ASSP A10.48. ANSI/TIA-222-H, TSB-5053 and ANSI/TIA-322 were all well received by OSHA leadership, with additional clarity requested regarding ASSP A10.48.

2. New Business

2.1 Discussion of Topics from ANSI/TIA-222-H

- Topography
 - Discussion centered around specific approaches for determining feature height, fetch length and feature type. Suggestion by Chris Hackney to adjust language to be more consistent with ASCE7.
- Exposure
 - No discussion
- Anchor Bolts
 - Addressed with the opening of Addendum 1
- Annex S
 - No discussion
- Rooftop Mounted Structures
 - Jyoti Ojha (Jyoti.Ojha@commscope.com) presented on the challenges of designing / analyzing roof mounted structures,
 - Committee voted to create a new Ad Hoc Group Hoc Group, of which she would chair.
 - First Motion: Scott Vance
 - Second Motion: Ronnie Glover
 - Ad Hoc Group 25, Rooftop Structures created



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- The chairman of TR-14 John Erichsen appointed Jyoti Ojha to become the Ad Hoc Group chairwoman
- Jyoti Ojha called for interest – technical experts to join the Ad Hoc group to work on rooftop mounted structures.

2.2 Current Work

- Development of Ad Hoc Groups for Addendums
 - Monopole Baseplates – Ad Hoc Group 14
 - Lead: Bryan Lanier (bryan.lanier@americantower.com)
 - Summary of work completed thus far (study of various engineered approaches to unstiffened baseplates) and work to be completed (recommendations for unstiffened and stiffened, grouted and un-grouted, additional anchor bolts baseplates and considerations for fatigue.
 - Interaction of Mounting Systems - Ad Hoc Group 15
 - Lead: Scott Vance (svance@btgrp.com)
 - Summary of work this far regarding various collar impacts, friction development and tie back location impacts on the tower.
 - Monopole Modifications – Ad Hoc Group 16
 - Lead: Dave Hawkins (dhawkins@pjfweb.com)
 - Work is largely complete, with publishing of document for review last remaining step.
 - Portholes – Ad Hoc Group 17
 - Lead: William Martin (whmartin@tepgroup.net)
 - Presentation was completed by Adam Amortnont. Majority of presentation centered around weld design, with additional topics including un-strengthened portholes and design of porthole rims.
 - Reliability - Ad Hoc Group 19
 - Lead: Chris Ply (chris.ply@ets-pllc.com)
 - Majority of initial draft is complete of white paper detailing reliability of antenna supporting structures. Final work being completed within the next month.
 - Antenna Drag Coefficients - Ad Hoc Group 20
 - Lead: Lemmy Recinos (IRecinos@maserconsulting.com)
 - Expansion of Table 2-9
 - Work completed thus far and which is ongoing is aimed at taking current wind tunnel test published data from antenna manufacturers, combining with CFD approaches and updating Table 2-9 to include more specific recommendations for appurtenance drag.
 - Wind Oscillation / Fatigue of Tubular Structures - Ad Hoc Group 21
 - Lead: John Wahba (John.Wahba@turriscorp.com)
 - Presentation summarized 3 types of vibration (along wind, cross-wind on cylindrical structures and cross-wind on tri-poles). Discussed approaches and means for implementing in the Standard.
 - U-bolts – Ad Hoc Group 18
 - Lead: Ben Greenwell (bgreenwell@verticalstructures.com)
 - Discussed work completed thus far, leading to expectation to add significant depth to 4.9.11, regarding u-bolt tensions, strengths and friction development.

2.3 Update on Industry Initiatives

- Mount White Paper



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- Michelle Kang (mkang@maserconsulting.com), Tyler Barker (Tyler.Barker@telamon.com) and Michael Oglesby (Michael.Oglesby@kimley-horn.com) spoke at length regarding work completed by Mount Ad Hoc Group. White paper should be complete and ready for review by end of May.
 - Drone Presentation
 - Sam McGuire (sam.mcguire@redmountainscientific.com) and Chad Tuttle (ctuttle@btgrp.com) spoke at length regarding work completed by the Drones Ad Hoc Group. Specific questions raised by the Ad Hoc Group revolve around how drones are used to support / execute various industry needs and where this fits in with work by TR-14. Suggestions of inclusion in an Annex (which was debated to be more challenging) to development of a White Paper (which was debated as more appropriate and efficient) through the Telecommunications Industry Foundation (TIF).

2.4 60th Anniversary of TIA-222

- David Brinker gave an insightful and entertaining presentation regarding the history of what is now ANSI/TIA-222-H. Roots of TR-14 and 222 date back to 1924, through the Radio Manufacturers Association and highlights of each standard published since then were provided. David also listed what have been the most controversial topics broached by the TR-14 committee during his time. He concluded the presentation with advice for the future leaders to consider as TR-14 and 222 continues to evolve.
- Cake was provided by TIA and photos of the full committee, ad hoc leaders, steering committee and chairman / vice chairman were taken.

3. Upcoming Meetings

No specific locations or timing, other than expectation of one face / face meeting in 2020.

4. Adjournment

First Motion to Adjourn the TR-14 Meeting: Scott Kisting

Second Motion: David Brinker

Meeting adjourned at 5:15, CDT

The meeting was conducted in accordance with the TIA Legal Guidelines and the engineering procedures.

Meeting Attendees

Attendee	Company / Representing
Zhang, Chiyu	Allpro Consulting Group Inc
Zhang, Shiqiang	
Lanier, Bryan	American Tower Corporation
Leifer, Jim	
Shanbhogue, Santhosha	
Young, Nicholas	
Crawford, Thomas	Aria Services, Inc.
Mrla, Rob	AT&T Mobility
Allen, Victor	
Tuttle, Chad	B&T Engineering, Inc.
Vance, Scott	
Dotson, Jerod	
Frazier, Robert	
Kelly, John	
Sevier, Brandon	
Shrestha, Umesh	
Nejman, Phillip	Bennett & Pless
Taneja, Pankaj	Bentley Systems
Jiang, Ping	Black & Veatch
Mironas, Jeremy	Centerline Solutions LLC
Barker, Tyler	CLS Group
Rebholz, Carrie	
Heath, Dale	Commscope
Branagan, Matt	Crown Castle
Fresch, Jesse	
Huwel, Jamal	
Poot, Aaron	
Soukis, Spiro	
Stevens, Tyler	
Kyriacopoulos, Jim	
Peterman, Richard	Destek Engineering, LLC
Erichsen, John	EET LLC
Ruedlinger, James	Electronics Research, Inc.
Arthur, Jeffrey	Engineered Tower Solutions,
Ply, Christopher	
Burbage, Greg	ESC, LLC
Abel, Dennis	FDH Infrastructure Services
Barham, Chad	



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Brearley, Ladson	
Reynolds, George	Foresite Group
Diaz, Justin	
Drennen, Jesse	GeoStructural, LLC
Durgin, Gregory	
George, Don	
Bowman, Travis	GPD Group
Palkovic, Dan	
Scheks, Chris	
Shehu, Jibril	
Johnston, Joe	Infinigy Engineering
Androvich, Deborah	Irish Tower
Connor, James	Jacobs Engineering
Clements, Kevin	Kimley-Horn & Associates
Fann, Avery	
Oglesby, Michael	
Malouf, Mark	Malouf Engineering International
Kang, Michelle	Maser Consulting
Sacks, Shawn	
Recinos, Ismaisa	
Gibson, Corey	Mastec Network Solutions
MacLaren, Bryan	
Cooke, G. Lance	Morrison Hershfield
Gonzales, Peter	
Brewer, Stephanie	MUTI-Sabre Industries
Kolandaivelu, Krupakaran	Network Building + Consulting
Reynolds, Andrew	
Wood, John	
Hu, Jiazhu	Nexius Solutions, Inc.
Barba, Andrei	P. Marshall and Associates, LLC (PM&A)
Boegel, James	
Hazlehurst, Greg	
Hill, Christopher	
Kline, Justin	Paul J. Ford and Company
Thorpe, Kyle	
Hawkins, David	
Kunkle, Leslie	
Ruh, Justin	
Piercey, Martin	Pier Structural Engineering Corporation
Houdeshell, Matthew	Power of Design Group



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TIAONLINE.ORG	
Herkenhoff, Aaron	
Kisting, Scott	Proactive Telecommunications Solutions LLC
Moore, Tom	Ramaker & Associates, Inc.
Moses, Mike	Red Mountain Scientific
McGuire, Sam	
Reese, Brian	Reese Tower Services, Inc.
Brinker, David	Rohn Products, LLC
Franceschino, Carlo	Sabre Industries
Tindall, Keith	
Buckles, Jeremy	SBA Communications Corporation
Ahuja, Nitesh	
Parreira, Breann	
Hagos, Asmerom	
Kathol, Brandon	SGS Towers
Kuplic, Neil	
Farinella, Joe	Shively Labs
Zawar, Kavish	Tectonic Engineering
Gilbert, Paul	Texas Dept of Transportation
Bain, David	TIA
Kramarikova, Marianna	
Amortnont, Adam	Tower Engineering Professionals
Glover, Ronnie	
Yeo, Stephen	
Kong, Jianwei	Tower Engineering Solutions
Tibbetts, Jarryd	
Wyant, Kyle	
You, Hanming	
Chojnacki, Peter	Tower Numerics Inc.
Fehlhafer, Steve	Towerkraft Egnineering
Skully, Denise	Towersource, Inc.
Penfold, Malcolm	Trylon
Wang, Jinshan	
Wahba, John	Turris Corporation
Haines, Scott	Union Pacific Railroad
Singh, Mandeep	Valmont Industries Inc.
Thiemann, Zach	
Drumm, Timothy	
De Boer, Michael	Vertical Bridge
Greenwell, Ben	Vertical Structures
Meehan, Kyle	