



BUILDING GLOBAL COMMUNICATIONS

## Approved by General Counsel

TR-14.7 Meeting Report

Date: 05/17/06

Location: Conference Call

Approved: 05/22/06

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TELECOMMUNICATIONS INDUSTRIES ASSOCIATION (TIA)  
Standards and Technology Department  
Meeting Report  
Subcommittee TR 14.7 - Steel Antenna Towers and Antenna Supporting Structures  
May 17th, 2006

**Hilton Airport St. Louis  
10330 Natural Bridge Road  
St. Louis, MO 63134**

### Members Present

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## **Members Absent**

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## **Others Present**

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### Others Present (cont.)

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Randy Carroll	<a href="mailto:rcarroll@westower.com">rcarroll@westower.com</a>	Westower

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8:05 – Meeting of TR 14.7 Subcommittee – A quorum was present

8:10 – Roll Call & Introduction – Craig Snyder, Sioux Falls Tower, TR 14.7 Chairman

- a. General introduction regarding the TR14 committee & TR 14.7 sub-committee.
- b. The Chair reviewed the day's meeting agenda.
- c. The Chair requested members update the distributed membership list.
- d. The Chair encouraged anyone who was aware of intellectual property that relates to the work of TR-14.7 to make the appropriate statements as early as possible in the process. The Chair directed the members to the TIA Engineering Manual, and the TIA web site ([www.tiaonline.org](http://www.tiaonline.org)), for the specific requirements.
- e. Member introductions of those present.
- f. The Chair reviewed membership requirements and voting eligibility. Voting eligibility is maintained by being current with membership dues and attendance at two meetings.

8:25 – Old Business – none

8:30 – Errata Discussion – Craig Snyder, Chairman

- a. The Chair reviewed the definition of erratum - a document which corrects a manifest mistake or omission in the original text of the Standard or an error subsequently discovered.
- b. An errata was prepared by the Editorial Task Group to address issues found in revision G and in response to committee comments and findings.

8:40 - Review of Errata & Discussion – Dave Brinker, Radian Communications, Editorial Task Group

- a. Pg. 4 – Table of Contents - correction on page numbering
- c. Pg. 5 – Table of Contents - normative/informative clarification
- d. Pg. 12 – 2.6.5.1 – clarification on Exposure B – 2600 ft and Exposure D – 20 times the height of the structure
- e. Pg. 15 – 2.6.7.1 - inclusive of bracketed latticed structures
- f. Pg. 15 – 2.6.7.4 - structures supported on other structures – modification to gust effect factors & the notes in this section
- g. Pg. 17 – 2.6.7.4 – gust effect factor modification & typos
- h. Pg. 19 – 2.6.9.1.1.1 – added linear wording for irregularities
- i. Pg. 19 – 2.6.9.1.1.1 - factored thickness of ice
- j. Pg. 21 - 2.6.9.1.2 - added located entirely inside
- k. Pg. 21 - 2.6.9.1.2 - added clarification to 0.8
- l. Pg. 21 - 2.6.9.1.2 - added note #3
- m. Pg. 22 – 2.6.9.2.1 – added shielded portion of the mounting pipe
- n. Pg. 23 – 2.6.9.2.2 – 0.8 shielding factor clarification
- o. Pg. 26 – 2.7.2 – removed units from definition
- p. Pg. 33 – 2.7.9.1 – Hertz clarification
- q. Pg. 35 – 2.7.11.1 – Hertz clarification
- r. Pg. 36 – 2.7.11.2 – Hertz clarification & corrected  $C_g$  value
- s. Pg. 38 – 2.8.2 – changed monopole horizontal displacement from 5% to 3% and cantilevers to 1.0% from 1.5%
- t. Pg. 39 – Table 2-2 – wind direction probability factor – clarification under structure types
- u. Pg. 42 – Table 2-8 – Force Coefficients for Appurtenances - corrected C exponent 0.5

- v. Pg. 51 – Figure 2-6 – see pg. 23 above
- w. Pg. 68 – added pitch of threads
- x. Pg. 73 – 4.5.4.1 - corrected typo in equations
- y. Pg. 74 – 4.5.4.2 – phi factor of 0.85 is changed to 0.90 for compression. Also on pp. 81, 82, 83.
- z. Pg. 83 – 4.9.1 – added note on tensile strength of bolts
- aa. Pg. 84 – 4.9.5 – clarification on high strength bolts/tensile area for metric bolt/ d, n, p clarification
- bb. Pg. 85 – 4.9.6.2 – bearing strength capacity increase
- cc. Pg. 88 – 4.9.9 – modified anchor bolt factors
- dd. Pg. 89 – 4.9.9 – phi factor clarification/added tensile root diameter/metric
- ee. Pg. 111 – 9.4 – added note regarding factor of safety
- ff. Pg. 111 – 9.4.1 – modified phi factor for bearing on rock from 0.5 to 0.6
- gg. Pg. 112 – 9.4.2 – added note on strength reduction factors regarding Appendix C of ACI 318-05

10:30 – Break

10:40 – Subcommittee Housekeeping Discussion – Craig Snyder, Chairman

- a. Acceptance of last meeting's report from October 19<sup>th</sup> & 20<sup>th</sup>, 2004, in Denver. Motion by John Erichsen and seconded by Mark Malouf. Motion carries by unanimous vote.
- b. The Chair reviewed TIA rules on sending Subcommittee correspondence. All Subcommittee documents are available on TIA's web site ([www.tiaonline.org](http://www.tiaonline.org)) and are only available to Subcommittee members. Recent documents will be uploaded to the TIA website by the Secretary.

10:45 – Errata Discussion (Continued) – Dave Brinker, Radian Communications, Editorial Task Group

- a. Pg. 119 – 13.3.3 – added wording throughout the height of the structure. Motion by Dave Hawkins and seconded by Mike Morel to modify tubular pole structures plumb requirements. Motion carries by unanimous vote. 13.3.7 Measurements – add “or sun distortion effects.” Under J.1 Maintenance and Condition Assessment, add A7 – record temperature, wind speed and direction, and other environmental conditions. Motion by Mark Malouf and seconded by Dave Hawkins. Motion carries by unanimous vote. Motion by Dave Hawkins and seconded by Doug Pineo for 1% Section 13.3.3 plumb requirements. Vote of 11-4 – motion fails with abstentions. Motion by Dave Brinker to 0.5% and seconded by Mark Malouf. Motion passes by 19-0 vote with abstentions.
- b. Pg. 122 – 15.6 – removed steel material strength exemption
- c. Pg. 208 – changed resistivity from 150 to 50 ohm-m
- d. Pg. 227 – changed normative to informative

11:30 – Additional G Discussion - Craig Snyder, Chairman

- a. Ta Wen Lee – IBC 3108.4 question; to be addressed during IBC discussion later in the agenda
- b. Jean-Alain LeCordier - 4.9.2 – nut locking devices requested change – except as provided in 4.9.3 and lock washers shall not be used for structures > 1200 ft in height. Motion by Jean-Alain LeCordier and seconded by Ernie Jones. Motion carries unanimously.
- c. John Robinson – Section 10.5 – present requirement conductor be not smaller than 2/0 solid. The required area will also be added in brackets. Motion by John Robinson and seconded by John Erichsen. Motion carries unanimously.

11:55 – Lunch

1:40 – Errata Discussion (Continued) – Craig Snyder, Chairman

- a. Motion to accept revision G Errata as discussed in this meeting by the committee by Bill Rettig and seconded by Martin de LaRosa. Motion carries unanimously.
- b. Motion to accept Errata as the complete Errata document with all issues as discussed by the committee by John Erichsen and seconded by Dave Hawkins. Motion carries unanimously.
- c. Motion to accept an Addendum only if required for any portion of the Errata contents by John Wahba and seconded by Ernie Jones. Motion carries unanimously.

1:50 – IBC Acceptance Discussion – Tom Hoenninger, Stainless Inc.

- a. On March 24<sup>th</sup>, 2006 - two proposals were submitted to ICC by Tom Hoenninger on behalf of TR14.7:  
1) Acknowledge TIA-222 G; 2) Re-work Section 3108 with references to TIA with proposed language
- b. Upcoming ICCO dates: September 20th-30th, 2006 code development hearings, followed by public hearing process
- c. May 22<sup>nd</sup> – 25<sup>th</sup>, 2007 is the ICC final action hearings.
- d. The Chairman thanked Tom Hoenninger for his work in interfacing with the ICC on behalf of the TR14.7

2:00 – Potential Revision H Issues – Craig Snyder, Chairman

The listing below was excerpted by the Secretary from the meeting minutes from the last TR14.7 meeting in Denver of 2004:

- a. Broadcast antenna degradation issues – John Robinson of ERI & Adam Jones of Shively to review.
- b. Method for calculating section properties for 60 degree (Schifflerized) angles – John Robinson of ERI to bring data to next meeting for discussion.
- c. Maintenance and inspection: corrosion and fatigue on guyed cables – to be addressed in Structural Reliability Task Group
- d. Qualification of manufacturers/material testing/submittals – to be investigated by Peter Moskal of Bechtel. Peter will report back to the committee.
- e. Fatigue categories on welded joints – to be investigated by a Section 4 Task Group. John Wahba is to chair this task group.
- f. Base plate design methodologies/weld details of the base connection on monopole – to be addressed by the Monopole Task Group
- g. Member replacements/erection stresses – presently being addressed in TIA-1019 Standard

Additional items for potential H inclusion:

- a. Addition of appurtenances and mounts in the field – tabled for now
- b. Heavy icing events – to be addressed by Ernie Jones of ERI
- c. Design fall radius – to be addressed in Structural Reliability Task Group
- d. Structure modification and upgrades – Mark Malouf of MEI & Jean-Alan LeCordier of Tower Consultants to review
- e. Concealed monopole structures – Mike Morel of EEI & Marcello Posada of PST will research this topic.

3:00 - Break

3:10 – Standard TIA-1019 Construction/Ginpole Draft – Gordon Lyman of Westower and Ernie Jones of ERI

- a. Review status of existing draft revision
- b. New draft includes construction loads and structure modifications

3:30 – Structural Reliability Task Group – Craig Snyder, Chair and Bill Griswold, IETS, Chair of Structural Reliability Task Group

- a. Discussion of group scope
- b. Identify top six industry reliability issues and research solutions
- c. Research other industry practices & summary of issues with recommendations
  1. Monopole fatigue
  2. Corrosion
  3. Falling ice
  4. Fall Radius
  5. Materials
  6. Fabrication practices

- 4:00 – Review of Subcommittee Web Site – Craig Snyder, Chairman
- a. Reviewed postings of Q&A on TIA-G technical questions
  - b. Motion to adopt by Doug Pineo & seconded by Simon Weisman. Motion carries unanimously.
- 4:05 – New Business – Craig Snyder, Chairman
- a. None
- 4:10 – Conclude Meeting – Craig Snyder, Chairman
- Motion to adjourn by John Erichsen and seconded by Mark Malouf. Motion carries by unanimous vote.
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### **Adjournment**

The meeting was conducted in accordance with the TIA Legal Guides and the Engineering Manual.

End of Report

By: Brian Reese, P.E. – TR14.7 Vice Chairman & Secretary

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