



BUILDING GLOBAL COMMUNICATIONS

Approved by General Counsel

TR-14.7 Meeting Report

Date: 05/06-07/03

Location: St. Louis, Missouri

Approved: 05/23/03

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COMMITTEE CORRESPONDENCE

TELECOMMUNICATIONS INDUSTRIES ASSOCIATION (TIA)
Standards and Technology Department
Meeting Report
Subcommittee TR 14.7 - Steel Antenna Towers and Antenna Supporting Structures
May 6th & 7th, 2003
Airport Hilton – St. Louis, MO

May 6th Members Present

Individuals also attending May 7th are designated with a (5/7)

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Mike Hemmati	mhemmati@structel.com	Structel International Inc. (5/7)
Barry Bayless	barry@nsec.com	National Steel Erectors (5/7)

May 6th Members Absent

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Jacob Patriak		U.S. Coast Guard
Basil Tominna		U.S. Navy

May 6th Others Present

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Dan Ianello	dianello@nelloinc.com	Nello Corporation
Jason Lambert	jlambert@nelloinc.com	Nello Corporation

May 6th, 2003

8:00 – Meeting of TR14.7 Subcommittee – A quorum was present

8:00 – Roll Call & Introduction – Craig Snyder, Sioux Falls Tower, TR14.7 Chairman

- a. Plan for meetings – Tuesday, May 6th will be discussions regarding subcommittee comments to G.4.
- b. Meeting planned for Wednesday, May 7th will be balance of G.4 subcommittee comments as required and the proposed draft TIA/EIA PN-4860 Gin Pole Standard.
- c. 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), for the specific requirements.

8:05 – Old Business – none

8:10 – Subcommittee Housekeeping Discussion – Craig Snyder, Chairman

- a. TIA rules on sending subcommittee correspondence. All subcommittee documents are available on TIA's web site (www.tiaonline.org) and are only available to subcommittee members.
- b. Down loading subcommittee correspondence from TIA's web site. Reviewed process of downloading subcommittee correspondence and documents online. All correspondence and documents going forward will only be available on-line.
- c. Subcommittee structure including make-up of Task Groups. Reviewed TR14.7 working groups and editorial subcommittee structure.
- d. Chairman reviewed membership requirements and voting eligibility. Dues for 2003 should have been paid to TIA. Voting eligibility is maintained by being current with membership dues and attendance at two meetings.

8:25 – Review of Subcommittee Comments on G.4 – Craig Snyder, Chairman

In an effort to organize the discussion, the Chairman prioritized the major subcommittee comments regarding G.4.

- a. 4.0 Design Strength of Structural Steel - Load and Resistance Factor Design (LRFD) vs Allowable Stress Design (ASD). Discussed subcommittee comments regarding steel design approach. LRFD was previously ratified by the subcommittee for various reasons: international tower standards only utilize LRFD, LRFD applicability to flexible structures, AISC was not going to support ASD when work on revision G was started, and research and industry support is ongoing for LRFD. In addition, the goal of our subcommittee was to be internationally recognized. ASD's benefits are long term familiarity and use within the steel design community and familiarity of this approach by U.S. tower engineers. AISC is projecting a release of a new steel design specification in 2005 with both LRFD and ASD included as steel design alternatives. Consensus appeared to be LRFD will be utilized as the main design approach; ASD may be offered as a design alternative in revision H after AISC issues the new standard.
- b. 15.0 Existing Structures. Discussed impact of revision G on existing structures. Convergence issues for existing structures should be addressed in this section. Tom Hoenninger will draft language to address existing structures and convergence issues by June 1st. Section 15.2 Evaluations also requires further review and subcommittee discussion.
- c. 3.6 Mast Response for Guyed Towers. Are there simpler ways to maintain static equilibrium than utilizing modification factors? G.4's approach of guyed mast response modifier is a simpler compromise that represents the international approach to patch loading. Complexity of this approach was questioned. John Wahba will discuss with Joe Vellozi guyed mast response theory.
- d. 2.6.9 Design Wind Load - Appurtenances. Discussed use of appurtenances and structural components included in the solidity ratio when calculating the effective projected area. Dave Brinker proposed that all appurtenances are treated the same way - appurtenances would not be included in the solidity ratio calculations. The equation in 2.6.9.2.1 Effective Projected Area of Appurtenances - $(EPA)_A = K_a C_a A_A$ would be used for both linear and discrete appurtenances. For round appurtenances under supercritical flow, $K_a = 1.0$, and for other appurtenances, $K_a = (1 - \epsilon_m)$. The Editorial Committee will provide an example.

10:30 – Break

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

- a. Acceptance of last meeting's report from Portland. Motion by John Erichsen and seconded by Mark Malouf. Motion carries by unanimous vote.
- b. Group dinner at Kreis Steakhouse this evening at 7:15 pm.

10:45 – Review of Major Subcommittee Comments on G.4 (continued)

- a. 2.6.9 – Design Wind Load - Wind Load on Towers and Appurtenances. Discussed critical issues of global and local wind effects. G.4 addresses global effects and the local bending effects in horizontals and bracing members as a result of appurtenance loads. Local bending effects from lines and antennas should not be ignored, especially considering the increasing number of lines attached to structures in recent years. The Editorial Committee recommended consideration of local bending effects for members that effect structural stability such as horizontal members and compression/tension bracing configuration and K-bracing without plan bracing. Debate revolved around the balance of bracing configurations that exist. The Editorial Committee will provide proposed language.

11:10 – Review of Balance of Individual Subcommittee Written Comments on G.4

- a. Dan Horn – comments reviewed in entirety; group consensus reached after discussion and minor nomenclature and clarification changes to the draft.
- b. Craig Snyder – comments reviewed in entirety; group consensus reached after discussion. Minor comments incorporated into the draft.
14.2 - Maintenance intervals will be changed to 2 years for guyed towers and 3 years for self-supporting structures.
Annex H – Craig will research resistivity requirements of 5,000 Ohm-cm vs 10,000 Ohm-cm.

12:30 – Lunch

1:30 – Review of Subcommittee Comments on G.4 (continued)

- a. Madison Batt– comments reviewed in entirety; group consensus reached – comments noted.
- b. Mark Fantozzi – comments reviewed in entirety; group consensus reached - comments noted. Mark withdrew his comment on seismic pole frequency equation after further review.
- c. Jean-Alain LeCordier – comments reviewed in entirety; group consensus reached – comments noted. 7.6.4 - Modification and further discussion to the topic of articulation is required. Ernie Jones to provide suggested figures for articulation systems.
- d. Joseph Vellozi – comments reviewed in entirety; Joe will be contacted regarding his comments 7.6.2 & 8.2 – Use a capacity factor of 0.5 for both compression and tension insulators. John Wahba will follow-up with Joe and discuss guyed mast response
- e. Ernie Jones – comments reviewed in entirety; group consensus reached after comments incorporated
- f. Don Doty - comments reviewed in entirety; group consensus reached after comments incorporated
12.0 Climbing and Working Facilities - ANSI Z359 new definitions for climbers – change “skilled” to “competent” and “basic” to “authorized” climber - Gordon Lyman to provide ANSI definitions of competent and authorized.
15.0 Discussion regarding modifications to existing structures. Owner, contractor, and engineering involvement and responsibilities discussed. Tom Hoenninger to address structure modifications in new language in 15.0 Existing Structures.
12.5 Dimensional Requirements - Gordon Lyman to provide guidance diagrams for step bolt placement and orientation.
- g. Tom Hoenninger - comments reviewed in entirety; group consensus reached after comments incorporated.
4.9.7 Splices – discussion regarding developing minimum design tensile strength equal to the lower of 33% of the design compression force at the splice or 500 kips (was 650 kips).

- 4:10 – Conference Call with Stephanie Montgomery, TIA
- a. Discussion of TIA/ANSI balloting process
 - b. Review of TIA Engineering Manual commenting process
- 4:25 – Review of Subcommittee Comments on G.4 (continued)
- a. David Hawkins - comments reviewed in entirety; group consensus reached
Discussion of Table 4.4 – lower limit of 1.5t bend radius – justification and origination.
 - b. Brian Reese - comments reviewed in entirety; group consensus reached
13.3.5 Slip Splice – Tolerances should be +/-10%
4.9.7.1 Tubular Pole Structures – Design length slip type splice shall not be less than 1.5 times the inside width of the base of the upper section. +/-10% will be applied to the 1.5 design length.
- 5:25 – Committee Assignments – Brian Reese, Vice Chairman & Secretary
- a. Tom Hoenninger to provide proposed language for Section 15.0 Existing Structures by June 1st. This is also to include language to address modifications to existing structures.
 - b. Editorial Committee to provide appurtenances and solidity ratio calculations clarification.
 - c. John Wahba will discuss with Joe Vellozi guyed mast response theory.
 - d. Editorial Committee to provide global & local wind effects clarification regarding local effects in horizontals and bracing members.
 - e. Craig Snyder will research resistivity of 5,000 Ohm-cm vs 10,000 Ohm-cm in Annex H and create Table H-1.
 - f. Ernie Jones to provide suggested figures for articulation systems regarding 7.6.4.
 - g. Gordon Lyman to provide definitions of competent and authorized climbers and diagrams for step bolt placement.
- 5:30 – Continuation of Meeting – Thursday, May 7th, Airport Hilton, 8:00 AM.
- 5:35 – Conclude Meeting – Craig Snyder, Chairman
Motion to adjourn by Simon Weisman and seconded by V.G. Duvall. Motion carries by unanimous vote.

Adjournment

May 7th, 2003

- 8:00 – Meeting of TR14.7 Subcommittee – A quorum was present
- 8:05 – NATE Dallas 2003 Towerhand Video - Craig Snyder, Chairman
- 8:20 – Roll Call & Introduction – Craig Snyder, Chairman
- a. Review remaining G.4 subcommittee comments
 - b. Discussion of G timeline going forward
 - c. Proposed Ginpole Standard discussion
- 8:25 – Review of Subcommittee Comments on G.4 (continued from 5/6)
- a. Simon Weisman – comments reviewed in entirety; group consensus reached – comments noted.
Annex O – Units corrections and changes
Annex J – Alignment corrections
Annex M – Wind Speed conversion corrections
 - b. Chris Martin – comments reviewed in entirety; group consensus reached – comments noted
9.2 Site Investigation - Category 2 structures soils report not required. Discussion of rationale behind this.

Who will provide the structure designer the topographic profile? – Note to be added to Annex G: Geotechnical Investigations stressing the importance of this information.

- c. Mike Hemmati – comments reviewed in entirety; group consensus reached – comments noted 6.0 Other Structural Materials - wood and concrete pole usage has been increasing. G addresses steel poles; however requires other materials to conform to current limit states design. Subcommittee may address other structural material in revision H.
2.6.9.1.2 EPA of Cantilevered Pole Structures - discussion of point-to-point vs flat-to-flat for pole structures. Figure to be created in conjunction with Table 2-7.

Craig Snyder requested further subcommittee comments. No further received.

9:00 – Schedule for G Going Forward – Craig Snyder, Chairman

- a. Craig Snyder thanked the Editorial Committee (David Brinker, Rohn; Mark Malouf, Malouf Engineering International; John Erichsen, Valmont Communications; John Wahba, Radian Communications) for their continued work and commitment in preparing G.4
- b. Target goal for G.5 release is August
- c. One month for TR14.7 subcommittee comments
- d. Possible subcommittee meeting in September
- e. TR14.7 subcommittee vote on G at meeting or electronically
- f. Out for public ballot

Mark Fantozzi announced that he and the Editorial Committee will be presenting “Latest Developments in the Design of Communication Facilities” at ASCE’s Structures Congress & Exposition in Seattle on 5/30. The Congress is from 5/29 to 5/31 at the Westin Seattle. For more information see <http://www.asce.org/conferences/structures2003/>.

9:10 - Break

9:30 – Proposed Ginpole Standard Presentation – Gordon Lyman and Ernie Jones

- a. Review of draft TIA/EIA-PN-4860 Gin Poles.
- b. Subcommittee discussion and questions regarding Proposed Standard.
- c. Proposed Standard release for subcommittee vote is approximately one month.
- d. Gin Pole Task Group to meet during the afternoon to finalize the document.

11:00 – Conclude Meeting – Craig Snyder, Chairman

Motion to adjourn by Simon Weisman and seconded by Mike Hemmati. Motion carries by unanimous vote.

Adjournment

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

End of Report

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

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