

NFPA 214
Standard on Water-Cooling Towers
Pre-ROP Meeting
Web Teleconference

March 3, 2011 1:00-2:00PM ET

(12:00-1:00PM CT; 11:00AM-12:00P MT; 10:00-11:00AM PT)

- 1) Call to Order.
- 2) Greetings and Self-Introductions.
- 3) Approval of Minutes from May 25, 2010 meeting.
- 4) Discussion (See Notes Below).
- 5) Old Business.
- 6) New Business.
- 7) Adjourn.

Notes and comments from committee members

- Fire protection for towers constructed of fire retardant fiberglass reinforced plastic (FRP).
- A question has been raised indicating there appears to be conflicting information between Cooling Tower Manufacturers, Cooling Technology Institute (CTI), and NFPA 214.
- CTI Paper No TP92-05 (1992), Design Methodology and Recommended Maintenance for FRP Composite Structured Cooling Towers, states:
“...Today, modern resin systems and manufacturing techniques are available that will ensure than an FRP structure will be non-fire hazardous...”
CTI Paper No TP92-05 also makes reference to ASTM E-84 as the test to rate cooling tower materials of construction and discusses materials with a flame spread of less than 25 as being fire retardant.
- As a point of reference, NFPA 214 does not reference ASTM E-84 in the body of the Standard but does in Annex C. ASTM E-84, otherwise known as the Steiner Tunnel Fire Test Method, is typically used to test fire performance in a horizontal configuration of interior finish materials. Testing cooling tower materials to ASTM E-84 is inappropriate as they are not interior finish materials and are generally not installed in a horizontal configuration.
- Based on the above, many Cooling Tower Manufacturers market their fire retardant FRP materials as having a flame spread rating of below 25, therefore do not require fire suppression. When internal company design engineers learn this, it is a difficult and time consuming task to convince them otherwise.
- Many off shore design and build firms have difficulty properly using NFPA Standards mainly because of their ambiguity.
- Does NFPA 214 need to clearly and adequately address protection of fire retardant FRP? Using Section 4.2, Fire Risk Analysis provides little insight in this situation.
- Explore resolution through any of the following:
 - As a Committee, should we recommend protection of fire retardant FRP?
 - If not, should 214 provide additional clarification and guidance?
 - If yes, additional clarification and guidance should be provided?
 - Clarify which ASTM test is appropriate to determine the combustibility of material of construction. Throughout 214 and its Annexes, there are several references to various ASTM documents which can be confusing.

- The definitions of Combustible and Noncombustible may need to be updated again. Perhaps the following would work:
 - Combustible: Materials having flame spread ratings of greater than zero (0) when tested in accordance to ASTM E 136 – 09 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace.
 - Noncombustible: Materials having a flame spread of zero (0) when tested in accordance to ASTM E 136 – 09 Standard Test Method for Behavior of Materials in a Vertical Tube Furnace.
- CTI should define the term “non-fire hazardous”, otherwise this statement is meaningless.
- A flame spread rating of less than 25 does not equate to “fire retardant” by any stretch of the imagination. The applicability section of the ASTM E-84 test clearly states that the results of the test cannot even be used to consider a product non-combustible, let alone fire retardant.
- Briefly comparing NFPA 214 to NFPA 101. It might be appropriate to revise the NFPA 214 definitions for combustible and noncombustible (3.3.3 and 3.3.7, respectively) to mirror those contained in NFPA 101 §3.3.160. Limited combustible material as defined by NFPA 101 could also be included in 214. The NFPA 101 definitions (combustible, limited combustible, and noncombustible) are mirrored in NFPA 1 (Fire Code) and NFPA 5000 (Building Code), so NFPA 214 should certainly be consistent with those code definitions, which it currently is not.
- Cannot simply rely on test results from ASTM E-84. Another test standard to consider may be NFPA 255. NFPA 259 is already referenced in the definition of limited combustible.
- NFPA 255, Standard Method of Test of Surface Burning Characteristics of Building Materials, has been withdrawn and the final published edition was in 2006. The appropriate replacement documents are: ASTM E 84, Standard Test Method for Surface Burning Characteristics of Building Materials, and UL 723, Standard for Safety Test for Surface Burning Characteristics of Building Materials.
- There is currently a performance-based evaluative process that was intended to be used to analyze the situation you address. If this process requires clarification, a formal proposal to the committee would be appropriate.