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## Do Not Let the Perfect Be the Enemy of Good

William Nickas, *Editor-in-Chief*

**W**hen an engineer tries something new, there is a series of questions that will be asked by others involved (and sometimes those not involved) in the project.

- Is this change really going to simplify things?
- Will this change really save that much money?
- Is this procedural change going to add value to the final project?
- Why change if the current approach has worked for years?

In September 2011, as the retiring Tennessee state bridge engineer, Ed Wasserman presented a paper titled "Reflections or Fiction and Fact from Ed's Almanac." The main thrust of his reflection was the many opportunities he enjoyed through learning and sharing with others about changes in bridge technologies (see the *ASPIRE*<sup>TM</sup> website, under Resources/Papers, for a copy of Wasserman's paper). He goes on to say, bridge engineers should be brave but must also be smart. He reminds us all to never become just a number checker, and to always step back and evaluate the new concept for fundamental- and advanced-stage flaws.

My goal with this editorial is to keep his advice in the forefront. When evaluating new concepts and technologies, we all need to ask ourselves:

- Is this change an appropriate risk?
- What is the consequence of exceeding the limits?
- Does there need to be redundancy (multiple levels of protection) in the member's durability?
- If this change has a flaw, will it always meet the belt-and-suspenders strength limit state?
- Will the transient overloading from a superload cause an exceedance affecting the serviceability of this new detail?

- Is there adequate redundancy in the load path?
- Or, is there enough excess capacity above all factored loads?

Voltaire was the pen name of a French philosopher named François-Marie Arouet who lived from 1694 to 1778. According to Wikipedia, "the phrase *'The perfect is the enemy of good'* is an aphorism or proverb meaning that insisting on perfection often results in no improvement at all." The phrase is commonly attributed to Voltaire's moral poem, *La Béguéule*.

Judiciously taking design codes and applying these design principles is always an engineer's professional responsibility. But how the engineer sequences the construction and selects details is how the concrete bridge industry advances every day. New equipment and new materials are changing the tools available to engineers to deliver every infrastructure project.

During my career as a state bridge engineer, I had the chance to look at in-service bridge problems and major construction challenges. In every case, it took multiple issues to cause the problem. There was never a single root cause for the challenge.

Recently, I attended a meeting of the AASHTO T-10 committee on Concrete Design where committee members were working to ballot additions and changes to the 2014 (and beyond) *AASHTO LRFD Bridge Design Specifications*. These specification changes will certainly offer more high-performance concrete choices to industry suppliers, designers, contractors, and owners. Today, bridge engineers have dramatically more choices to address our nation's bridge inventory. Please, *do not let the perfect be the enemy of good.* 



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