



THE TEST REPORT

A Newsletter of the California Council of Testing and Inspection Agencies

PRESIDENT'S CORNER –

By Al McManus

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As I said in the first column this year, I expected that 2003 would hold great promise and many surprises. The year just past was indeed a very interesting year. Among the noteworthy events, the Building Standards Commission adopted an untested building code (NFPA 5000) as our next model code. (Completely ignoring the volumes of testimony submitted on behalf of adopting the ICB code.) In addition, the governor, Grayout Davis, was recalled in an historic example of government by popular initiative and replaced by the "Last Action Hero" Arnold Schwarzenegger! We went to war in Iraq and ousted the dictator Saddam. Whew, a lot has happened. Our economy has started to trend upward and work is picking up and we are all busy



or getting that way. Yet, with all the excitement and confusion in our world our organization has stayed the course. We continue to monitor events that affect our industry. We watchdog the changes in policy, and politics that influence our businesses. We inform our members of the changes and recommend action as necessary. We are still doing our stated purpose. This would not take place were it not for the diligent and selfless efforts of the board and the committees. I would like to take this opportunity to thank those individuals who volunteered for committee assignments this past year: Terry Eglund, Miki Craig, Don Rose, Dave Chippero, Tom Williams, Issam Makdissy and Tom Williams, Kurt Siggard, Dave Chippero, Jeff Patton, and James "Chip" Moore. Their participation is much appreciated and I hope they will continue to lend their time and talent to this organization. I'm also deeply grateful to my board

this year, and thanks to Cory Dare, Dave Chippero, Terry Eglund, Tom Williams, Greg Smith and Jim Backman. Your experience, dedication, service, and attention to the needs of this group made it possible for another successful year. I know I could not have done it without you.

As I write this, my final note to you as president we are preparing for the Annual Business Meeting in Las Vegas and the ballots for next year's leadership are in the mail. I hope you all took the time to mark your ballots and return them to David Chippero. I am looking forward to seeing many of you at the Bally's in Las Vegas for the ABM. We have a great program for you on a new method of communicating with your field personnel that is very interesting and on the cutting edge of technology. Hope to see you there.

Continuing Education Programs

By Michelle Craig, Dynamic Consultants, Inc.

With the advent of the ICC Certification Maintenance Program being the only renewal option commencing 2004, many special inspectors (and their employers!) have become concerned about how to obtain the requisite 2.5 continuing education units (CEU's). Help is on the way!

ICBO and ICC have recently formed an agreement with CCTIA concerning educational opportunities for the special inspection industry. Effective immediately, any educational offering endorsed by CCTIA will be accepted by these model code organizations towards the required CEU's. the program requirements, 0.1 CEU will be credited for each actual

hour of training. For a typical 8-hour program with two 30 minute breaks and an hour for lunch, this would interpret to 0.6 CEU's.

CCTIA is contacting various organizations offering existing programs they feel would be appropriate for this type of recognition. In addition, we are looking for new parties interested in developing programs in a variety of topics that would be of interest and educational for our industry. Look for programs addressing conflict management, effective verbal communication techniques, report preparation, legal responsibilities and liabilities of a special inspector, and much more. Offerings will be made available throughout the

State of California to accommodate the geographical needs of all the CCTIA member firms. Although classes will be open to the general public, CCTIA member firm employees will receive a substantial discount on the seminar fees.

Currently, CCTIA is working with the Wilrick Institute to provide a program in early November (tentatively scheduled for November 8th in the Bay Area) for those inspectors caught unawares by ICC's new maintenance program. Flyers announcing the date and location of this program should be available soon. Watch CCTIA's website (www.cctia.org) for more information as these programs are developed and become available.

We're on the Web!
<http://www.cctia.org>



Steel Deck Welding

By Art Dell, SOHA Engineers

A project involving a retrofit and expansion of an existing building included a new steel deck diaphragm supported on wide flange steel framing.

The Contractor submitted written welding procedure specifications (WPS) and supporting procedure qualification records (PQR) for the arc spot welding of the deck to the framing and for the deck-to-deck welding (top seam welds). The engineer was a little surprised at the thoroughness of the submittal, since deck welding is often qualified on the job by the simple twist-off tests described in AWS D1.3, *Structural Welding Code – Sheet Steel*. The WPS and PQR indicated the use of the shielded metal arc welding (SMAW – often called “stick”) process, with E7010 electrodes. The engineer returned the submittal with no exceptions noted.

When the deck welding began, the welding inspector took a look at the WPS and noticed something: E7010 is not a low-hydrogen electrode (SMAW electrodes with designations ending in 15, 16 or 18 are “low-hydrogen”). The engineer was brought into the discussion, and after a review of his rather outdated welding codes, had to agree with the welding inspector. D1.3, paragraph 1.1.1 states that “When sheet steel is welded to primary structural members, the provisions of the latest edition of ANSI/AWS D1.1, *Structural Welding Code – Steel*, shall also apply (e.g., adequate preheat, low hydrogen electrodes, etc.)” Table 3.1 in AWS D1.1 requires the use of low-hydrogen electrodes for ASTM A36 steel more than 3/4 inch thick, and for all thicknesses of the higher strength steels of Group II and III including ASTM A572 Grade 50.

The floor framing has both A36 and A572 steel. Project specifications said to weld the deck according to ASW D1.3. Accordingly, the contractor was directed to qualify procedures for the use low hydrogen electrodes at the higher strength steel (the flanges of the A36 beams were less than 3/4 inch thick). Then things got complicated. The contractor (actually the deck subcontractor) pointed

out that there are extra costs associated with the use of low-hydrogen electrodes, both in electrode storage and handling (you have to keep them dry in a portable rod oven so the coating does not absorb moisture) and in the welding itself (you need to take extra care to avoid leaving holes in the sheet steel around the weld). More importantly however, the contractor maintained that qualification of the procedure by testing can supercede the code requirement mandating the use of low-hydrogen electrodes. They pointed out that Table 3.1 is for “pre-qualified WPSs” only, not for WPSs qualified by testing (see AWS D1.1 Section 3.3) and that Annex IV in D1.1 specifically references the filler metal requirements of Section 3.3 in a table titled “Code Requirements That May Be Changed by WPS Qualification Tests”.

Regardless of the technicalities of the code language, if there was a good structural/public safety reason to use the low hydrogen electrodes, then the extra cost would have to be absorbed (by the owner of course). The engineer had a little knowledge: he knew that the concern with hydrogen in the weld metal had to do with the possibility of delayed or cold cracking. Could cracking occur after the qualification tests are made? Does this mean that a fabricator could successfully do qualification tests on welding high-strength steel to high-strength steel using E7010 electrodes and then proceed to fabricate a structure that may be subject to cracking in service?

The engineer now realized he was going to have to learn something. Calls were made to the metallurgy supervisor of the welding inspector’s testing lab, to a major steel deck manufacturer, to AWS technical services, and to a local welding engineer recommended by AWS. The testing lab said, “no, you can’t change the code requirements simply by doing qualification tests.” The deck manufacturer said, “heck, we do all our full scale testing for certification by ICBO using E6010 – it produces better welds and we have never had a problem with cracking during the testing.” AWS was careful and non-committal but did provide the reference to the local welding engineer. The welding engineer said that, regardless of whether or not the code allows these parameters to be changed by the qualification process, for hydrogen-induced cracking to occur

three elements need to be in place: a source of diffusible hydrogen (non-low hydrogen electrode); a high degree of restraint (like welding a continuity plate to a heavy section column); and a deep weld pool to make it difficult for the hydrogen to escape. In deck welding, only the first of the three elements is present.

The engineer, with his little knowledge augmented somewhat, now made an informed decision: go ahead and use the E7010.

The CQA Committee is looking for feedback here. The basic code interpretation question remains unanswered. Any ideas? And, what is the general practice in the area? At a different project that the engineer visited recently, he pickup up a rod off the deck –E7010. Is that typical? Are testing labs or engineers enforcing the low hydrogen requirement?

By the way, don’t let the low-hydrogen issue confuse you in the use of welding processes other than SMAW – see <http://www.lincolnelectric.com/knowledge/articles/content/fillermetals.asp> “Selecting Filler Metals” for an excellent article on the subject.

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Workers' Compensation—California

By John Dineen, Gingrich Insurance Brokers, INC.

An adult working person in California only needs to pick up his daily newspaper and will find an article that discusses the workers' compensation crisis.

The California Legislature last week was a verbal battleground between those "interest" groups who see the Workers' Compensation system as working for the California insured employee, and those "interest" groups who see the California system as dysfunctional and in need of reform.

As an Insurance Broker, I have experienced first hand how the cost of Workers' Compensation has impacted negatively companies' bottom line. As a result, I side with those who advocate reform, particularly in the area of benefits paid.

However, aside from my opinion, and the turmoil going on in the legislature, reform will take time. So what can you as an employer do to make the current system in California work better for you?

The first point I recommend is to understand that the price you pay in premium is really only that number you pay for the insurance policy. The cost you pay for Workers' Compensation is the impact the price has on your business decisions whether it is expansion or reduction, whether it be hiring or firing, and the list goes on. The price that you pay for Workers' Compensation is dictated by the California Workers' Compensation Insurance Rating Bureau (WCIRB).

California's plan is Intrastate, which means that only employers with California employees are taken into consideration when the WCIRB promulgates its rates from which the price is determined. The WCIRB promulgates these rates from carrier information on losses reported. This includes their underwriting costs, claims cost, insurance charge and profit. The carriers then file their rates, along with credits and debits allowable, with the insurance commissioner, who provides final approval.

The factor in the rating process, which then impacts on what your firm pays for Workers' Compensation, is the Experience Modification for your particular firm. The Modification Factor can either increase or decrease the amount of insurance payable. It is based on the size of your operation, annual payroll, and how your actual losses match up to those expected for each classification.

The Formula used in the Experience Modification rewards the firm that has the lower frequency of loss. A high frequency of several losses would be detrimental, but the formula provides some relief to a firm that has, for an example, one severe claim.

Using the knowledge of how Workers' Compensation is priced in combination with an active loss control program and an active claims handling and review program, can reduce a company's costs in the current California environment.

Certification Renewals – Avoid the Confusion

By Michelle Craig, Dynamic Consultants, Inc.

Legacy Certifications

"Legacy certifications" are those achieved through the original ICBO examination process (pre ICC). These certifications have previously been renewable by completing a 25 question "mail in" exam or, more recently, by attending ICBO's Special Inspector Update Seminar. If you hold this type of cert, and it expires no later than December 31, 2003, you may still renew under either of these options for the very last time. As a third option, Legacy Certs may also be renewed under the ICC Certification Maintenance Program. If the cert expires after December 31st, it must be renewed under the ICC Certification Maintenance Program.

ICC Certification Maintenance Program

Applicable to all certs expiring January 1, 2004 and later, this program requires the candidate to obtain a minimum of 2.5 continuing education units (CEU's) during each three year certification period. What constitutes CEU's? Any ICC/ICBO endorsed training program qualifies. At this time, that would include programs put on by ICC, ICBO, ACI, AWS, ASNT, PTI – basically any nationally recognized industry association. In practical terms, this would include ACI's Field Testing Technician – Grade 1 program, local ICBO and ICBO Chapter-sponsored training seminars, and the AWS exam preparatory program, to name a few. The good news for multiple-disciplined inspectors is that these programs may be counted towards every cert they hold – not just the subject one. This also applies to the maximum 1.0 CEU's credited for 3 years of continuous employment in the industry.

However, a note of caution on how many CEU's are credited for the various programs: The ACI program is generally viewed by participants to be two 8-hour classes. Only actual training/seminar hours are given credit (time for lunch, breaks, etc. is deducted). In this example, the actual training hours are valued by ICC/ICBO at 6 for each day, with each hour receiving 0.1 CEU's, for a total of 1.2 (not $0.8 \times 2 = 1.6$). So what does this all mean?

If you have been carrying your cert for years, and it currently expires before January 1st, you may take the written exam or attend ICBO's update seminar for the very last time. After that, you're in the same boat as everyone else!

If your cert expires January 1st or later, you need to gather up 2.5 CEU's. Here's how that works:

You have been continuously employed by a local lab -	1.0
You attended ICBO's update seminar -	.6
You renewed your ACI Grade 1 cert-	<u>1.2</u>
	2.8

Congratulations! Fill out the form, document your CEU's, pay your \$75.00 fee, and you will receive your new 3-year cert in the mail. And don't feel put upon about all this effort. Everyone else in the industry will have to catch up with you the next time around!



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NFPA 5000 Adopted as the New California Building Code – What Now?

By Dennis Dunston, HMC Architects C.A.S.H. Board Member

On July 29, 2003, the Building Standards Commission (BSC) adopted the National Fire Protection Association (NFPA) 5000 Building Code and the NFPA 1 Fire Code as the model codes for the next Title 24 California Building Code. This was over the objections of two thirds of those who testified at the meeting. Most of the testimony was in favor of adopting of the International Building Code (IBC). The current model code for California is the 1997 Uniform Building Code. This code was incorporated into the IBC after 1997. The current Title 24 follows closely the format of the IBC.

The question is: Now what? The normal process is for each enforcing agency, from the Division of the State Architect (DSA) and the Office of Statewide Health Planning and Development (OSHPD) to the local building departments, to review the new model code and propose amendments which would bring the model in line with State and local laws, ordinances and standards. Local agencies will most likely wait for the State agencies to complete their amendment processes prior to beginning their own. DSA will work with OSHPD to develop amendments, as their requirements are similar.

DSA will need to review the new code, chapter by chapter, in conjunction with the current California Building Code (CBC), existing laws, and regulations governing building design and construction in California. The structural elements of the NFPA 5000 will require the greatest effort. The IBC contains over 250 pages of detail on structural provisions. This is similar to the current CBC. The NFPA 5000 contains only 40 pages of text in similar font and page size. This indicates that there is considerably less detail in the NFPA code, which will need to be developed by the amendment process. Amendments for each chapter will need to be researched, written and reviewed by peer groups for comments. Public comments will be accepted and will need to be addressed.

Finally, the amendments will be presented to the BSC for adoption. DSA has indicated that the process will take 2 ½ to 3 years. In the interim, the current CBC will continue to be used and amended as necessary.

For previous major changes to the code there has been a three-to-six month period after the adoption to allow time for printing and distribution of the new code and training for the architects and engineers, as well as the DSA staff.

If the NFPA codes are adopted prior to the analysis and development of amendments, we can anticipate extended checking times at DSA and extended design schedules as the architects and engineers attempt to understand the new codes and attempt to anticipate DSA's interpretation of them.

DSA has already started this process with the preparation of the document, "Evaluation of the 2003 International Building Code and the 2003 NFPA 5000 Building Construction and Safety Code for Adoption as the 2004 California Building Code." This document was presented to the Building Standards Commission and details the changes and the manpower necessary to adopt the new code.

It is clear that the adoption of the NFPA 5000 code will take a considerable amount of time and, unless the DSA is allowed to hire additional staff, that is time that could be spent on project approvals.

The BSC is scheduled to meet again on September 17, 2003 to establish timeframes for the adoption, publication and enforcement dates of the codes.