State of California — Business, Transportation and Housing Agency

DEPARTMENT OF TRANSPORTATION

Bolt Manufacturing and Delivery Documentation Released

June 21, 2013

Caltrans has gathered volumes of manufacturing and delivery records for all ASTM A354 Grade BD bolts on the San Francisco-Oakland Bay Bridge as part of the ongoing investigation into 32 steel rods that broke during construction of the bridge.

The 17 volumes – one for each type of rod, anchor or fastener – indicate the location of that item on the bridge, along with details such as quantity, dimensions and formula for the raw steel from which they were fashioned. There are photographs and descriptions of facilities used by the two steel fabricators, Dyson Corp and Vulcan Threaded Products, that provided the material to American Bridge / Flour and Kiewit Offshore Services, contractors building the bridge. These documents detail the process by which pieces were either accepted as complying with all standards, rejected as substandard, or approved for use despite some imperfections.

Although the documents chronicle manufacturing, testing and inspection of the hard-steel rods, they provide only some of the data that will be used to answer the central question of the bolt investigation: Should the bridge open to traffic while these pieces remain in place? That determination, which will be made by the Toll Bridge Program Oversight Committee (TBPOC), will be aided by the results of additional testing and inspecting that is underway right now. Engineers are conducting additional tests to check and confirm chemistry, tensile strength, and hardness, while also assessing toughness, a measure of the material’s resistance to future cracking. The assessment of toughness is new information neither available nor required by standard testing. It will help assess the susceptibility of material to hydrogen –related issues. Assessment of the potential for long-term corrosion is also part of the additional testing to be done.

The documents were given to the TBPOC, the state Legislature and the Federal Highway Administration, which has agreed to review the TBPOC’s conclusions.

During the investigation, Caltrans has continued to release thousands of pages of records pertaining to the Bay Bridge bolts. In April 2013, Caltrans released manufacturing and delivery records for the Dyson bolts located on Pier E2, including the 2008 bolts that broke and are being replaced with a giant steel saddle. In May 2013 Caltrans provided the Legislature with records documenting the decision made in 2003 to follow national ASTM standards for bolts in selecting ASTM 354 grade BD bolts. In May 2013, Caltrans also released a metallurgical analysis of the bolts that broke.

On July 10, 2013, the TBPOC is scheduled to announce the findings of its investigation, which will include the results of current testing, the disposition of A354 grade BD fasteners, a timeline for completion of the saddle retrofit, and a recommendation on the opening date for the bridge.

Throughout this investigation, the latest information on Bay Bridge construction — including videos, fact sheets and public records regarding the ongoing investigation into the broken bolts—will continue to be made available on our website, http://baybridgeinfo.org/rods.