PennDOT e-Notification

Bureau of Business Solutions and Services
Highway/Engineering Applications Division

pennsylvania
DEPARTMENT OF TRANSPORTATION

PSLRFD
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Release of Version 2.9.0.0

The Department's LRFD Prestressed Concrete Girder Design and Rating (PSLRFD) program has been revised as described in the attached "Summary of February 2015 Revisions – Version 2.9.0.0".

The new program has been placed on PennDOT servers for use by the Districts. Consultants and others, who have a current license agreement for **PSLRFD Version 2.8.0.0**, can obtain the updated version by submitting an Update Request form along with the **update fee of $500 for private organizations and $50 for governmental agencies**. Updates for **PSLRFD Version 2.7.0.0 or earlier** will require an **additional fee**. For PSLRFD update fee details, refer to the following link: http://penndot.engrprograms.com/home/Ordering/PSLRFD.htm. The update fee is waived for federal and state transportation agencies.

The Software Update Request form can be obtained on the PennDOT Engineering Software Support website at http://penndot.engrprograms.com by clicking on "Ordering/Updating" and, then on "Update Form".

NOTE: PSLRFD v2.9.0.0 is not compatible with Windows XP.

Please note that the software is no longer provided on a CD. Once payment is received, an e-mail will be sent with download instructions. The new installation will require a License Key that will be provided in the e-mail. A valid e-mail address must be provided on the Update Form in order to receive the download instructions.

Please direct any questions concerning the above to:

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Attachment

SUMMARY OF FEBRUARY 2015 REVISIONS - VERSION 2.9.0.0

Since the release of PSLRFD Version 2.8.0.0 several revision requests and user requested enhancements have been received. This release of PSLRFD Version 2.9.0.0 contains the following revisions and enhancements.

Specification Revisions

1. The stress limit for Splitting Resistance of End Zone Stirrups is now 20 ksi as specified in AASHTO Article 5.10.10.1. Previously, a limit of 24 ksi was being used. (Request 335)

2. The warning messages for exceeding the 25% and 50% limits on debonded strands as specified in Pub 408 Section 1107.01(b)1.b now references the debonding regions. (Request 437)

3. The minimum beam depth for exterior adjacent plank beams is no longer based on the deck overhang. Previously, DM-4 Section 9.7.1.5.1P, Overhang of Deck Slab on Concrete and Steel Girder Bridges, was being incorrectly applied to set the minimum beam depth for exterior adjacent plank beams. (Request 557)

Rating Revisions

4. The program can now rate an existing bridge for the Strength II Limit State with P-82 in one lane and PHL-93 in the other lanes in accordance with DM-4 Article 3.4.1. This is accomplished by using Live Load Code “G” for an Analysis Run. (Request 480)

5. A new rating table has been added to the program after the OVERALL RATING SUMMARY table that will report rating information in a table similar to DM-4 Part A Table 1.8.3-1. (Request 523)

6. Detailed rating output tables now include a column to identify rating values that are less than 1.0. Also, output tables with rating factors less than 1.0 are now added to the Spec Check Failure table. (Request 536)

7. For program runs that produce With FWS and Without FWS ratings in the same run, the program now uses the negative slab steel to determine rating factors when making a second pass to compute ratings without future wearing surface. Previously, the incorrect negative slab steel was being used for the second pass resulting in an incorrect rating for the Without FWS case. (Request 553)

8. For symmetrical bridges the program now considers the right critical shear located to the right of mid-span when determining the controlling shear rating of a symmetrical structure. Prior to this change the program would report an incorrect shear rating if the critical shear location to the right of mid-span controlled for a symmetrical structure. (Request 541)

Documentation Revisions

9. The User Manual and Engineering Assistant help now notes that the ORF Command parameter 5, Ratings without Future Wearing Surface, should not be used when the FWS load type includes utility loads. (Request 540)

10. The User Manual and Engineering Assistant help now explicitly refers to plank beams as adjacent plank beams to clarify that the program cannot design or analyze a spread plank beam. (Request 533)

11. The Tendon Longitudinal Location parameters of the TND Command now identifies that the tendon location distance is measured along the beam. (Request 559)

12. The User Manual and Engineering Assistant help now references the correct sections of DM-4 when describing the Ductility, Redundancy, and Operational Importance load modifiers on the CTL command. (Request 566)

Input Revisions

13. Invalid combinations of beam type and diaphragm type now result in an input error message. Previously, the program inconsistently treated invalid combinations as a warning for some combinations, aborts for some combinations, and no messages for other combinations. The program checks diaphragms specified by the DIA command or by the CDL or DLD load commands. (Request 556)

Output Revisions

14. The rating table output in the Summary output now uses roman numerals in the Limit State names to be consistent with other references to the Limit States within the program. (Request 548)

15. The Reaction Summary Tables for non-composite beams now labels the sidewalk dead load reactions as “S/W DL”. Previously, these reactions were incorrectly labeled as “Total DC2” reactions. The Factored Analysis Results-Reactions output table now includes Strength IP and Service IP Limit States when pedestrian loading is entered. (Request 555)

16. The page layout of the output file now allows for more characters per page width and more lines per page in the PDF output file. The new layout has 88 characters per page width and 74 lines per page. The Table of Contents now includes second level bookmarks. (Request 558)

Debonding Revisions

17. All failed debonding checks for analysis runs are now reported in the program output. Also, the criterion for computing the maximum cutoff location is now based on the strand development length. Previously, the criterion was based on the strand transfer length plus six feet. (Request 525)

18. The strand debonding design module has been verified to meet the restrictions for strands in webs. The restrictions are that box beam webs do not allow debonding in consecutive rows and I-Beam webs do not allow consecutive rows to have two strands debonded. (Request 524)

19. The program now requires strands to be fully developed at mid-span. An error is reported for design runs when the strands are not fully developed and a warning is reported for analysis runs. (Request 520)

Analysis Revisions

20. Analysis points that are off of the bridge are now ignored. Previously, when the beam projection was larger than the transfer length, resulting in the transfer location being before the first support, the program would crash. (Request 522)

21. The program now uses a consistent precision to compute analysis locations and load locations. Previously, the location of exterior diaphragms could sometimes result in unsymmetrical shear values. (Request 542)

Strand Pattern Revisions

22. The Beam table for PA I-Beams no longer includes strand patterns with both even and odd available number of strands in a row. This change was made as a short term fix to prevent unsymmetrical strand patterns from being designed. If a design run would produce an unsymmetrical strand pattern the program now provides a warning message. Previously, for PA I-Beams a design run occasionally would result in an unsymmetrical strand pattern without a warning message. (Request 570)

Programming Revisions

23. The program is now compiled with Intel Visual Fortran Composer XE 2013 Update 4 and Visual Studio 2012. (Request 543)

24. The program now stops execution on the rare occurrence of a floating point error. Previously, on the rare occurrence of a floating point error the program would continue execution, which would result in the program calculating incorrect results and sometimes stopping execution later in the program with a different error. (Request 563)