PENNDOT e-Notification

Bureau of Business Solutions and Services
Highway/Engineering Application Division

pennsylvania
DEPARTMENT OF TRANSPORTATION

PSLRFD No. 008 June 29, 2009	**Release of Version 2.3.0.0**

The Department's LRFD Prestressed Concrete Girder Design and Rating (PSLRFD) program has been revised as described in the attached "Summary of May 2009 Revisions – Version 2.3.0.0".

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 2.2.0.0**, 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 2.1.0.0 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".

Please direct any questions concerning the above to:

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Attachment

SUMMARY OF MAY 2009 REVISIONS - VERSION 2.3.0.0

Since the release of PSLRFD Version 2.2.0.0 several revision requests and user requested enhancements have been received. This release of PSLRFD Version 2.3.0.0 contains the following revisions and enhancements.

<u>**Input Revisions**</u>

1. The DLD command has been enhanced to allow the application of distributed loads along a span or entire structure without having to specify the start and end ranges. (Request 166)

2. A series of input checks has been added to the program to ensure the required commands have been entered correctly for each span. Previously, the program would provide errors that were not very informative asking the user to modify the input to run to completion. (Request 279)

3. The upper limit on the Deck Overhang parameter on the OVH command has been removed. Previously, the program would incorrectly display a Chief Bridge Engineer Warning when the upper limit was exceeded in addition to a second message indicating the deck overhang to span ratio has been exceeded. (Request 310)

4. A new haunch thickness for Section Properties has been added to the SLB command. Previously, the program used a single haunch thickness parameter for dead load calculations and section properties. This made it difficult to compare an analysis and design run. The existing haunch thickness parameter has been renamed to reflect its use for dead load calculations only. (Request 361)

5. The program has been revised to include a new counterweight force load type on the CLD and DLD commands as well as a specification check to ensure that any counterweight load entered is adequate. Previously, the program would only provide the user with the required counterweight force if uplift was detected. (Request 355)

6. The program has been revised to include a new category for plank beam designations in the beam tables. Previously, the program would incorrectly include plank beam designations as a valid box beam designation. (Request 366)

7. New input checks have been added to ensure an STI command has been defined for each span for an analysis run. Previously the program would generate incorrect shear resistance values when the shear stirrup information was missing for the span. (Request 368)

Output Revisions

8. The program has been revised report the average stress in the prestressing strands at nominal flexural resistance in the new output table "Prestress Values at Nominal Flexural Resistance". (Request 208)

9. The "Prestress Loss Values" table has been modified to provide detailed prestress loss information. Previously, the program would only show the "Initial Loss" and "Final Loss" values. (Request 218)

10. The program has been modified to no longer print HS20 and H20 deflection output for live load codes C, D, E and F for analysis runs. Previously, the program would always show the HS20 and H20 deflection table which would cause an error message to print in the output. (Request 320)

11. The "Ultimate Moment and Serviceability Checks" table in the output has been modified to now include the Creep and Shrinkage Moment in the Factored Moment STRENGTH M(u) column. Also, an issue has been corrected where the program would sometimes indicate a failure occurred in the "Ultimate Moment and Serviceability Checks" table in the "Specification Check Failures" table when actually there was no failure. (Request 356)

12. The program has been revised to print out points in output tables where failures have occurred, even if they have not been selected for printing. Previously, the program would indicate a failure in the "Specification Check Failures" table even though there was no indication of failure in the referenced table, due to the failed point not having been selected for printing. (Request 362)

13. The Department's Beam Section Properties program, BSP Version 1.5.0.3 has been incorporated into the program. The deck concrete unit weight and the beam concrete unit weight are now considered for the calculation of the modular ratio passed to the BSP program when composite section properties are calculated. Previously, PSLRFD would assume the concrete unit weight for the beam and deck were always 150 pcf which resulted in unconservative composite moment of interia values. (Request 396)

Stirrup Revisions

14. The program has been revised so the stirrups for spans where the left support is on a pier and the right support is on an abutment will now symmetrically place stirrups with respect to the midpoint of the beam. Previously, the program would incorrectly locate the midpoint of the beam using the centerline of the pier instead of the centerline of the bearing. (Request 367)

Flexure Revisions

15. The Positive Moment Connection Flexural Resistance design iteration process has been modified to prevent the addition of extra reinforcement area once an acceptable resistance has been found. Previously, the program would add an extra increment of steel area so hand verified resistances values were larger than the program resistance values. (Request 375)

Shear Revisions

16. The program has been revised to calculate the positive and negative shear rating factors for each point of interest on the structure. This revision ensures that the rating factors shown in the output are the controlling factors. Previously, the program would only calculate one shear rating based On the sign of the controlling dead load moment. (Request 342)

17. An issue was corrected for debonded design runs producing acceptable P-82 ratings that once they are converted into analysis runs the P-82 ratings become unacceptable. The root cause of this problem was the calculation of the d(critical) location differed between design and analysis runs which lead to different values of the Shear Resistance of Concrete V(c). (Request 370)

User Manual Revisions

18. The User Manual has been modified to provide direction for incorporation of the beam notch depth criteria from the Standard Drawings BD-661M and BD-662 during the design process for draped strands. (Request 360)