

Release Notes for RISATower Version 4.7

November 16, 2006

This document describes Version 4.7 update for RISATower. Please install this upgrade at your earliest convenience. *Stand Alone Installation Instructions.pdf* and *Network Installation Instructions.pdf* files are available from the program download webpages.

Documentation

RISATower manual will be installed in \Program Files\RISA\RISATower\Manuals directory. Hard copies will be made available to those who request them.

Program Enhancements and Bug Fixes

- Updated candelabra calculations to comply with TIA-222-G. Added candelabra loads input page.

Please note that this is a re-introduction of the candelabra functionality in the program, and it is currently intended for users of the old format candelabra input files only. These files are not supported by RISA Technologies.

New candelabra geometry import option will be added in a future release of the program.

- Corrected attribution of projected area of ice on flat structural components under TIA/EIA-222-F and TIA-222-G. Previously ice on flat elements areas were multiplied by the 2/3 shape factor and added to the total flat elements area.
- Corrected Ice Thickness Importance Factor calculation under TIA-222-G. Previously, the program did not apply the 1.25 factor to ice thickness on discrete loads for structures Class III.
- Added Minimum Bracing Resistance calculations in accordance with TIA-222-G for redundant and secondary horizontal members.
- Added condition that secondary horizontal members, under TIA/EIA-222-F and earlier, in addition to the redundant bracing, must have an axial compressive capacity of min. 1.5% of the supported member's calculated axial compressive load.
- Corrected monopole base plate design algorithm. Under certain conditions, the program produced erroneous steel stress values for square base plates.

- Fixed projected area calculations for Arbitrary shapes when they are used as monopoles.
- Added check box "Pole is ground mounted" for structures defined entirely in the upper spreadsheet on the "Geometry" page. When checked, the pole structure will be designed using the gust effect factor G_h applicable to monopoles for tubular structures. Otherwise, the G_h is calculated for the value in the "Height for User G_h " box, or arbitrary values of G_h are used if the "Enter pre-defined G_h values" option is selected.
- Fixed a bug that in some instances triggered re-definition of the structure with different bracing patterns and member sizes, when constant-width towers had their Tower Face Width parameter modified.
- Corrected calculations of shear strength of truss legs under TIA-222-G. The resistance is based on the compressive strength of diagonal members. Previously the program did not apply the compressive resistance factor in diagonals' strength calculations.
- When feed lines were entered as $A_r(CaAa)$ or $A_f(CaAa)$ under TIA-222-G and their Width/Dia. parameter was specified as 0.0, the program produced a "Division by 0!" error message in the analysis stage. Dismissing this message allowed the analysis to proceed. This input condition is now flagged when the Tower Input screen is being closed to allow users to make input changes. The error message has been eliminated as the condition it relates to is handled internally by replacing the 0.0 value with a very small positive non-zero number.
- Fixed a bug on the Feed Line input screen that required re-entry of the Database name after changing the Component Type to "Inside Pole" and back to "CaAa (Out Of Face)".
- Added "Tower Input buttons in top right corner" option in the File|Settings dialog box under Display and Printing category. When checked, the OK, Cancel, Apply and Help buttons are placed in the upper right corner of the input screen. This configuration is desirable for certain screen resolutions.
- Fixed display of reactions on the Guy-Anchor screen for the "Worst" guy anchor location. Previously, choosing the "Worst" condition did not guarantee that the extreme values of reactions would be displayed.

Release Notes for RISATower Version 4.7.1

December 14, 2006

This document describes Version 4.7.1 update for RISATower. Please install this upgrade at your earliest convenience. *Stand Alone Installation Instructions.pdf* and *Network Installation Instructions.pdf* files are available from the program download webpages.

Documentation

RISATower manual will be installed in \Program Files\RISA\RISATower\Manuals directory. Hard copies will be made available to those who request them.

Program Enhancements and Bug Fixes

Release 4.7.1

- Fixed load generation under TIA-222-G for tower sections for which force calculated using solidity ratio of 1.0 governs (as per 2.6.9) or sections that approach that condition.
- Corrected wind load application for round tapered monopoles under TIA-222-G. Previously some of the tower forces were generated incorrectly and reported as zero values in the Tower Forces and Mast Vectors tables of the output.
- Corrected calculation of torsion stresses for monopole base plate bolts design.
- Fixed output formatting for monopoles when "Print Pole Stresses At Increments" option is selected.
- Eliminated generation of superfluous loading patterns when guys with identical attachment heights were specified on separate lines on the Guy Data input page.
- Eliminated generation of loading patterns for guyed masts' spans shorter than 3 times the tower face width (as per TIA-222-G, 3.6.2, Note 3).
- Corrected the way candelabra structures are merged with towers. Previously the program assumed that the candelabra is always within the top-most section of the tower.

- Modified the way program imports new properties from model input files into local databases. The transfer (and database creation, if needed) occurs now sooner thereby eliminating the warning message "Section n NOT found in database N!" that was displayed when model used sections not present in the local database.
- Fixing a problem causing the "Position Error" message displayed during the design stage of towers defined entirely as an "Upper Structure".

Release 4.7

- Updated candelabra calculations to comply with TIA-222-G. Added candelabra loads input page.

Please note that this is a re-introduction of the candelabra functionality in the program, and it is currently intended for users of the old format candelabra input files only. These files are not supported by RISA Technologies.

New candelabra geometry import option will be added in a future release of the program.

- Corrected attribution of projected area of ice on flat structural components under TIA/EIA-222-F and TIA-222-G. Previously ice on flat elements areas were multiplied by the 2/3 shape factor and added to the total flat elements area.
- Corrected Ice Thickness Importance Factor calculation under TIA-222-G. Previously, the program did not apply the 1.25 factor to ice thickness on discrete loads for structures Class III.
- Added Minimum Bracing Resistance calculations in accordance with TIA-222-G for redundant and secondary horizontal members.
- Added condition that secondary horizontal members, under TIA/EIA-222-F and earlier, in addition to the redundant bracing, must have an axial compressive capacity of min. 1.5% of the supported member's calculated axial compressive load.
- Corrected monopole base plate design algorithm. Under certain conditions, the program produced erroneous steel stress values for square base plates.
- Fixed projected area calculations for Arbitrary shapes when they are used as monopoles.

- Added check box "Pole is ground mounted" for structures defined entirely in the upper spreadsheet on the "Geometry" page. When checked, the pole structure will be designed using the gust effect factor G_h applicable to monopoles for tubular structures. Otherwise, the G_h is calculated for the value in the "Height for User G_h " box, or arbitrary values of G_h are used if the "Enter pre-defined G_h values" option is selected.
- Fixed a bug that in some instances triggered re-definition of the structure with different bracing patterns and member sizes, when constant-width towers had their Tower Face Width parameter modified.
- Corrected calculations of shear strength of truss legs under TIA-222-G. The resistance is based on the compressive strength of diagonal members. Previously the program did not apply the compressive resistance factor in diagonals' strength calculations.
- When feed lines were entered as Ar(CaAa) or Af(CaAa) under TIA-222-G and their Width/Dia. parameter was specified as 0.0, the program produced a "Division by 0!" error message in the analysis stage. Dismissing this message allowed the analysis to proceed. This input condition is now flagged when the Tower Input screen is being closed to allow users to make input changes. The error message has been eliminated as the condition it relates to is handled internally by replacing the 0.0 value with a very small positive non-zero number.
- Fixed a bug on the Feed Line input screen that required re-entry of the Database name after changing the Component Type to "Inside Pole" and back to "CaAa (Out Of Face)".
- Added "Tower Input buttons in top right corner" option in the File|Settings dialog box under Display and Printing category. When checked, the OK, Cancel, Apply and Help buttons are placed in the upper right corner of the input screen. This configuration is desirable for certain screen resolutions.
- Fixed display of reactions on the Guy-Anchor screen for the "Worst" guy anchor location. Previously, choosing the "Worst" condition did not guarantee that the extreme values of reactions would be displayed.

Release Notes for RISATower Version 4.7.2

January 5, 2007

This document describes Version 4.7.2 update for RISATower. Please install this upgrade at your earliest convenience. *Stand Alone Installation Instructions.pdf* and *Network Installation Instructions.pdf* files are available from the program download webpages.

Documentation

RISATower manual will be installed in \Program Files\RISA\RISATower\Manuals directory. Hard copies will be made available to those who request them.

Program Enhancements and Bug Fixes

Release 4.7.2

- Calculation of Topographic Factor K_{zt} under TIA-222-G (2.6.6.4) has been corrected. Previously, the Crest Height parameter's value, if non-zero, was not properly applied in the calculation of K_{zt} for Discrete Appurtenances (including Antenna Poles and Torque Arms) and Dishes.
- Bolt minimum edge distance is now based on TIA/EIA-222-F 3.1.8 and TIA-222-G 4.9.4. The distance used in bolt bearing capacity calculations is the greater of 1.5 bolt diameter or min. value entered on the Code input page.
- Loading pattern generation for self-supporting towers now includes only apex points that are derived from leg slopes differing by more than 1 deg. between adjacent tower sections, as per TIA-222-G 3.6.1.
- Corrected calculation of critical stress for compression members under TIA-222-G. The AISC Specification's Chapter E F_{cr} equation for " $\lambda_c > 1.5$ " was used for λ_c values 1.225 and greater.
- Corrected ice thickness value reported in the Discrete Appurtenance Pressures table of the output for Antenna Poles and Antenna Beacons.

Release 4.7.1

- Fixed load generation under TIA-222-G for tower sections for which force calculated using solidity ratio of 1.0 governs (as per 2.6.9) or sections that approach that condition.
- Corrected wind load application for round tapered monopoles under TIA-222-G. Previously some of the tower forces were generated incorrectly and reported as zero values in the Tower Forces and Mast Vectors tables of the output.
- Corrected calculation of torsion stresses for monopole base plate bolts design.
- Fixed output formatting for monopoles when "Print Pole Stresses At Increments" option is selected.

- Eliminated generation of superfluous loading patterns when guys with identical attachment heights were specified on separate lines on the Guy Data input page.
- Eliminated generation of loading patterns for guyed masts' spans shorter than 3 times the tower face width (as per TIA-222-G, 3.6.2, Note 3).
- Corrected the way candelabra structures are merged with towers. Previously the program assumed that the candelabra is always within the top-most section of the tower.
- Modified the way program imports new properties from model input files into local databases. The transfer (and database creation, if needed) occurs now sooner thereby eliminating the warning message "Section n NOT found in database N!" that was displayed when model used sections not present in the local database.
- Fixing a problem causing the "Position Error" message displayed during the design stage of towers defined entirely as an "Upper Structure".

Release 4.7

- Updated candelabra calculations to comply with TIA-222-G. Added candelabra loads input page.
- Please note that this is a re-introduction of the candelabra functionality in the program, and it is currently intended for users of the old format candelabra input files only. These files are not supported by RISA Technologies. New candelabra geometry import option will be added in a future release of the program.
- Corrected attribution of projected area of ice on flat structural components under TIA/EIA-222-F and TIA-222-G. Previously ice on flat elements areas were multiplied by the 2/3 shape factor and added to the total flat elements area.
- Corrected Ice Thickness Importance Factor calculation under TIA-222-G. Previously, the program did not apply the 1.25 factor to ice thickness on discrete loads for structures Class III.
- Added Minimum Bracing Resistance calculations in accordance with TIA-222-G for redundant and secondary horizontal members.
- Added condition that secondary horizontal members, under TIA/EIA-222-F and earlier, in addition to the redundant bracing, must have an axial compressive capacity of min. 1.5% of the supported member's calculated axial compressive load.
- Corrected monopole base plate design algorithm. Under certain conditions, the program produced erroneous steel stress values for square base plates.
- Fixed projected area calculations for Arbitrary shapes when they are used as monopoles.

- Added check box "Pole is ground mounted" for structures defined entirely in the upper spreadsheet on the "Geometry" page. When checked, the pole structure will be designed using the gust effect factor G_h applicable to monopoles for tubular structures. Otherwise, the G_h is calculated for the value in the "Height for User G_h " box, or arbitrary values of G_h are used if the "Enter pre-defined G_h values" option is selected.
- Fixed a bug that in some instances triggered re-definition of the structure with different bracing patterns and member sizes, when constant-width towers had their Tower Face Width parameter modified.
- Corrected calculations of shear strength of truss legs under TIA-222-G. The resistance is based on the compressive strength of diagonal members. Previously the program did not apply the compressive resistance factor in diagonals' strength calculations.
- When feed lines were entered as $A_r(CaAa)$ or $A_f(CaAa)$ under TIA-222-G and their Width/Dia. parameter was specified as 0.0, the program produced a "Division by 0!" error message in the analysis stage. Dismissing this message allowed the analysis to proceed. This input condition is now flagged when the Tower Input screen is being closed to allow users to make input changes. The error message has been eliminated as the condition it relates to is handled internally by replacing the 0.0 value with a very small positive non-zero number.
- Fixed a bug on the Feed Line input screen that required re-entry of the Database name after changing the Component Type to "Inside Pole" and back to "CaAa (Out Of Face)".
- Added "Tower Input buttons in top right corner" option in the File|Settings dialog box under Display and Printing category. When checked, the OK, Cancel, Apply and Help buttons are placed in the upper right corner of the input screen. This configuration is desirable for certain screen resolutions.
- Fixed display of reactions on the Guy-Anchor screen for the "Worst" guy anchor location. Previously, choosing the "Worst" condition did not guarantee that the extreme values of reactions would be displayed.