



What's New in ASPEN OneLiner/Power Flow V15.8

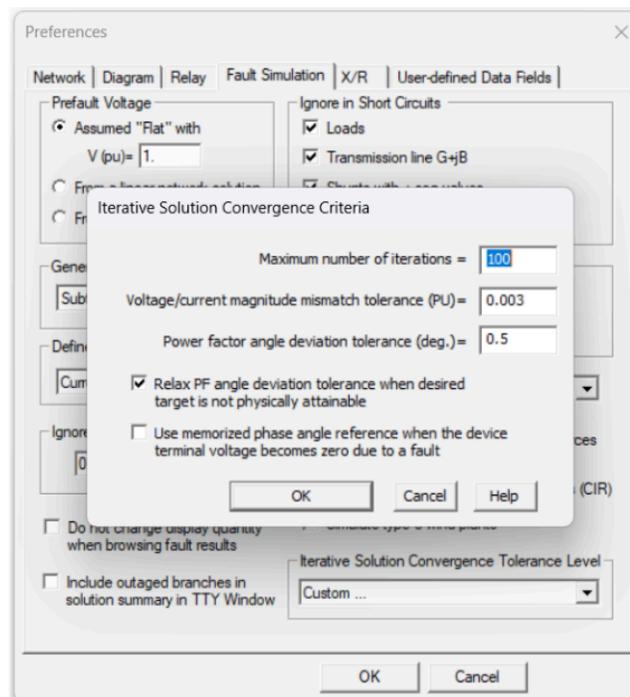
This maintenance release contains fixes for software bugs, plus some program improvements.

Please write to support@aspeninc.com in English (suporte@aspeninc.com in Spanish and Portuguese) or call us (650-347-3997) if you have questions.

Note: The data files generated by OneLiner V15.8 are compatible with earlier releases of OneLiner V15.3 through V15.7.

Program Improvements between Versions 15.7 and 15.8

1. **New Fault Simulation options for iterative solution of nonlinear network elements (VCCS, CIR, Type-3 wind turbine, current-limited generators):**



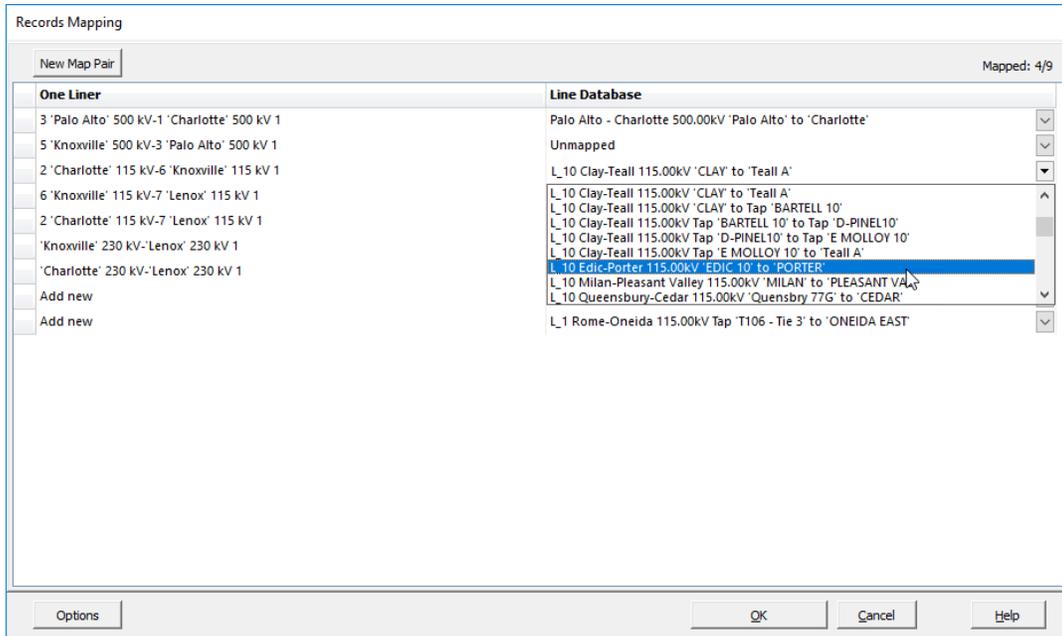
User-defined iterative solution convergence criteria: Users can specify the maximum number of iterations and desired tolerance levels for phasor magnitude and angle deviation between iterations.

Relax PF angle deviation tolerance when the desired target is not physically attainable: Users can select this option to allow the program to achieve convergence in the iterative solution for these non-linear device types. This option is enabled by default in OneLiner V15.8.

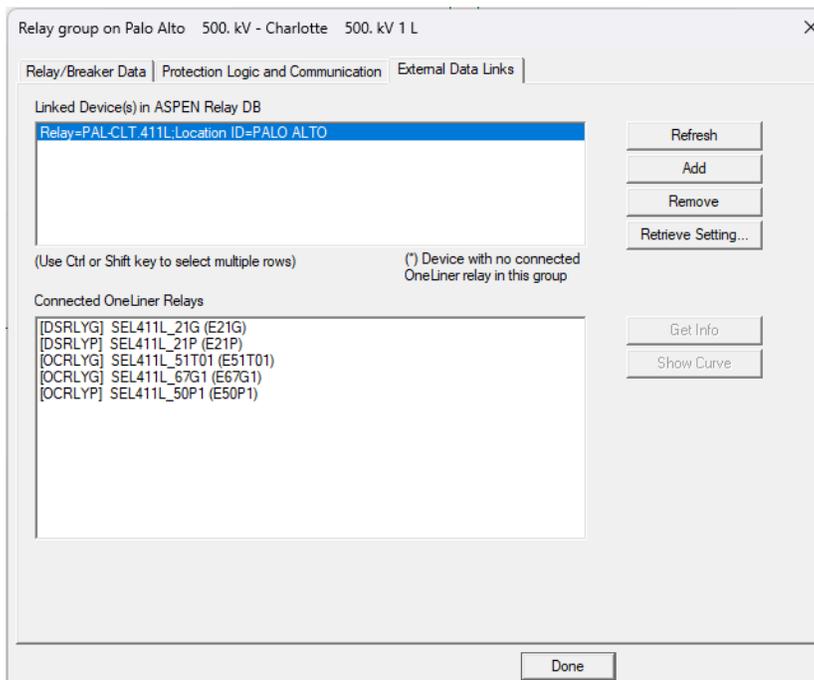
Use memorized phase angle reference when the device terminal voltage becomes zero due to a fault. To support requests from many users, this option is introduced to allow the simulation of bolted 3LG faults between a converter interfaced resource (CIR) model and its point of interconnection (POI) to the network. This option is not enabled by default. Users must turn it on when desired.

2. **Enhanced the iterative solution non-convergence report:** When the iterative solution of nonlinear network elements, such as CIR, VCCS..., does not converge in a fault, the program always prints a report with details that users can use to analyze the results and take corrective modeling actions.
3. **Increased the stepped-event simulation's number of steps limit from 40 to 80:** This will allow users to use the stepped-event simulation to study uncommon but still possible failure modes of the relay protection system in a substation that trigger the operation of many relays in adjacent substations.
4. **Enhanced support for 3-terminal lines outage in the logic of the Check relay settings and Check relay operation using stepped-event commands:** The program now correctly opens, and optionally grounds, three ends of 3-terminal lines, which users model with the middle bus having the "Tap bus of 3-terminal line" attribute.
5. **New CSVTool.exe utility:** Users can use this program to aggregate multiple Check Relay Coordination reports using stepped-event CSV reports into a single file to facilitate filtering and querying of the data.
6. **Support for default value logic in the SetData() API:** When using the API to update array type data fields, you can enter OneLiner's pre-defined values for the array elements that you wish to keep the original value unchanged. In Python OlxAPI applications, look for these constant variables in OlxAPIConst.py: OLXAPI_DFI, OLXAPI_DFF, and OLXAPI_DFS.
7. **Scripting engine support for additional OneLiner object data fields:** These include mutual lines, fault simulation convergence, Thevenin impedance in simultaneous faults, and some others.

- New data ASPEN Line Database data sync wizard:** The wizard allows users to map transmission line data records in the two programs and copy impedance data for the mapped pairs:

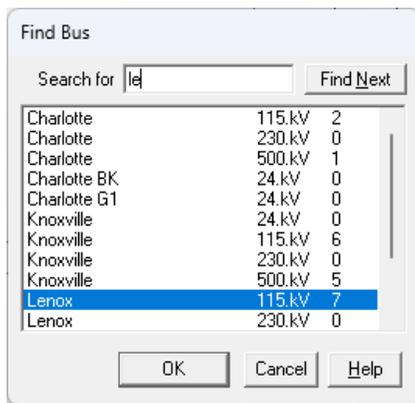


- New External Data Links tab in the Relay Group dialog box:**



This tab allows users to track linked relay data records in the ASPEN relay DB and import the settings when desired.

10. **Scripting engine support for adding/deleting network objects:** These new APIs are available for PowerScript programs and OIxAPl programs. For example, in Python you can use the `OlxObj.OLCase.addObj()` function to add new network elements and relays and the `delete()` function to remove existing elements. See the `SamplesOlxObj.py` script for examples of how to use these functions.
11. **Logic scheme support in GetRelayTime() API:** The logic scheme response during a simulated fault can be accessed using the API.
12. **Enhancements in the Find bus search logic:** The Find Next button in this dialog box will first display Items with the search substring as the bus name prefix, followed by items with the search substring found anywhere else in the bus name. In the example below, clicking on Find Next will highlight the matching entries in the following order: Lenox 115kV, Lenox 230 kV, Knoxville 24kV, Knoxville 115kV, Knoxville 230kV, Knoxville 500kV,



13. **Embedded Python engine support and Integrated Development Environment:** OneLiner V15.8 can invoke Python to execute user scripts, which can interact directly with the network currently open in the OneLiner GUI through the OIxAPl interface.

Python scripts can be developed, edited, and executed directly within OneLiner built-in integrated development environment, which is based on the standard Python IDLE package. User scripts used within Embedded mode can access the selected network element within the OneLiner GUI, as well as a dialog box for selecting buses within the active OneLiner network. 32-bit Python Version 3.11 must be installed to use this feature.
14. **Python macro recording:** Users can record network editing and fault simulation commands they execute in the GUI to a Python OIxAPl script. This is particularly useful for developing Python scripts because it provides the Python syntax required to duplicate OneLiner actions. To use this feature, 32-bit Python Version 3.11 must be installed. To start/stop the recording, use the command under the Tool section of the main menu or click on the corresponding toolbar button.
15. **New Default value logic in the SetData() API:** When using the API to update array type data fields, you can enter OneLiner's pre-defined values for array elements that you wish to

keep the original value unchanged. In Python OlxAPI application look for these defined constant variables in OlxAPIConst.py: OLXAPI_DFI, OLXAPI_DFF, and OLXAPI_DFS.

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18. **Logic scheme support in GetRelayTime() API:** The logic scheme response during a simulated fault can be accessed using the API.
19. **Support for COMTRADE's 2nd CT input in fault location calculations**

Channel Selection

Voltages

Va = Va

Vb = Vb

Vc = Vc

Currents

Ia = Ia + None

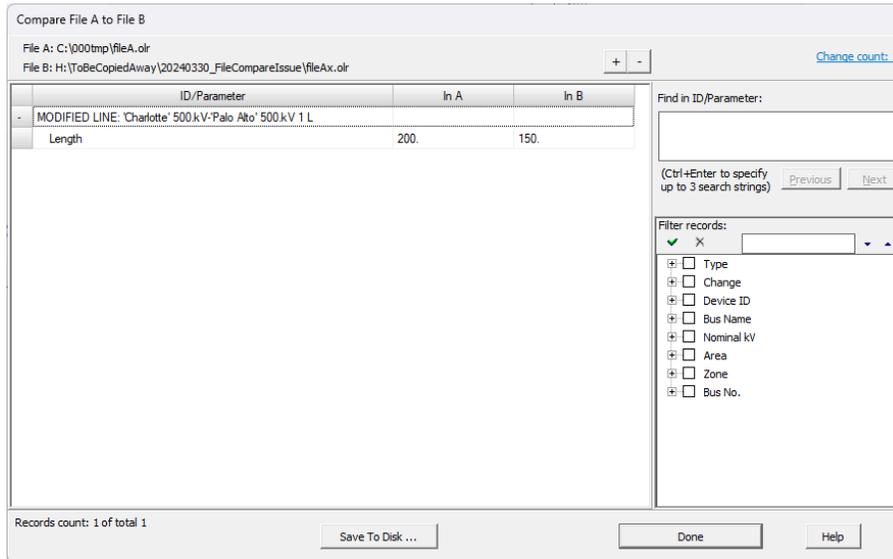
Ib = Ib + None

Ic = Ic + None

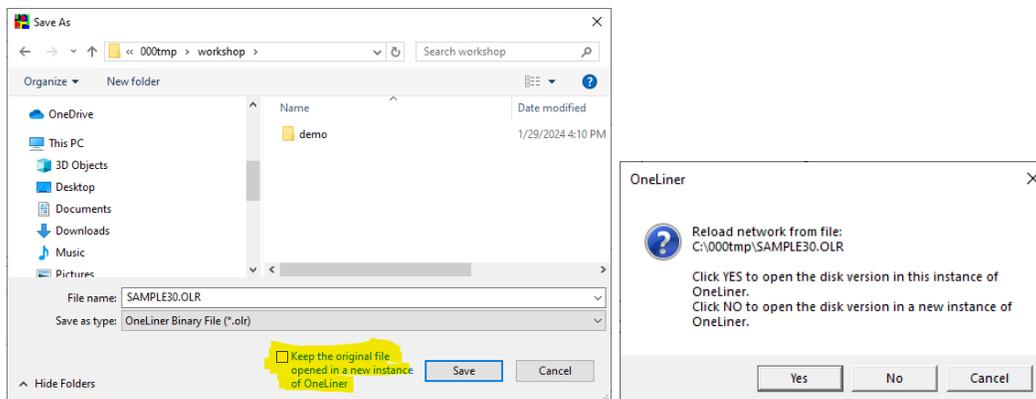
OK Cancel

The 2nd CT input is enabled if the Fault Locator function is initialized from the single relay group and the imported event file is a Comtrade, CEV, or EVE file. The program will use the sum of the 1st and 2nd CT inputs in computing fault location.

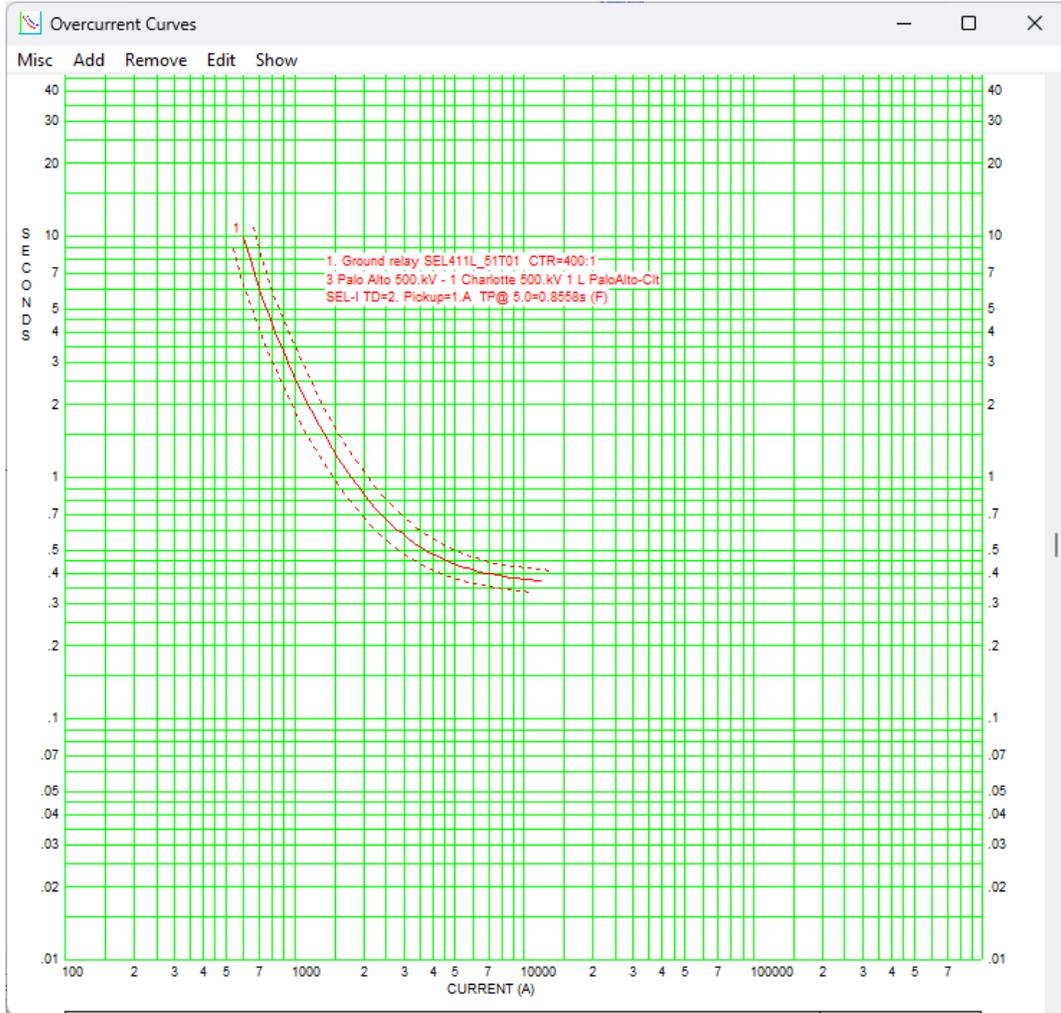
20. **New ADX viewer/editor in the Compare Files and Case Builder commands:** The new tool supports data filtering, searching, and data field value editing.



21. **Shortcuts to open networks in multiple instances of OneLiner:** The File | Save As and File | Reload file from disk commands in this version include shortcuts to launch a new instance of OneLiner and have the new and existing networks opened side-by-side to facilitate visual comparison.



22. **Accuracy band in Overcurrent Curves window:** Users can elect to show an accuracy band for device curves displayed in the window as shown in the following example:



Bug fixes between Versions 15.7 and 15.8

The full list of all bug fixes between versions v15.7 and v15.8 is available on the ASPEN website at this link:

<https://webapps.aspeninc.com/aspn-dist/software-update?u=1lpfv15.txt&e=28511>