

KEY FEATURES

Re-establishes National Electrical Safety Code (NESC)

Utility code compliant

Removes sections of conductor wire in any span (the "nip")

Shifts conductor clamps at any non-dead-end structure (the "tuck")

Adds weights to the swinging insulators on any structure

Determines loading effects of re-tensioning on adjacent structures

KEY BENEFITS

Optimizes your existing system

Increases capacity

Minimizes expenditure

Provides uninterrupted service to customers

Design using tools created by experienced engineering professionals

TRIMBLE NIP&TUCK SOFTWARE

Trimble[®] Nip&Tuck[®] software is a unique design tool that uses the "tension field method" of calculating conductor sag, instead of the simplified and more common "ruling span method". Trimble Nip&Tuck lets an engineer test various techniques to resolve clearance problems and re-rating issues on a span-by-span basis.

Trimble Nip&Tuck was written by experienced engineers, for engineers. It's the tool those same engineers use in their own projects. These engineers automated the standard necessary complex calculations and created a software tool that takes a very sophisticated approach to finding the best solution for your line retensioning project.

Time savings in rejuvenating your infrastructure

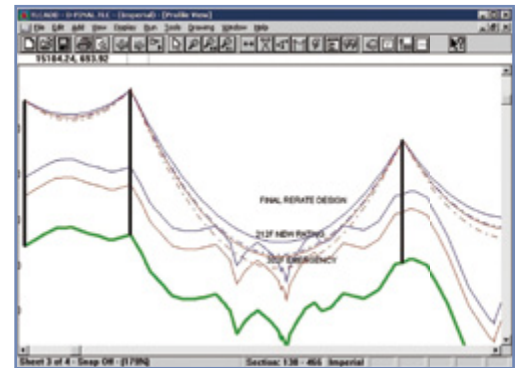
Trimble's innovative up-rating and re-rating solutions give you the power to choose. Our one-of-a-kind Nip&Tuck software allows you to strategically re-tension lines on a localized level, increasing your line capacity, or re-mediating a ground clearance problem.

Add our Trimble Nip&Tuck engineering services, and you have the complete package: an unbeatable system and the experienced minds to know exactly what to do with it. The result: you'll bring your lines back into code compliance in the most cost effective way possible. And at the same time, you could add as much as 15-percent to your system's capacity. All this can happen while the lines are energized, so there's no down-time. Your customers will suddenly have more of what they want, without any interruption in service.

Cost effective code adherence

The Trimble Nip&Tuck solution lets you up-rate or re-rate your lines using the

existing conductors and structures. That, together with just the right amount of re-sagging in just the right places, makes Trimble Nip&Tuck the most efficient and economical way to bring many of your lines back up to code on the market today.



Increased system capacity

In order to increase your throughput, Trimble Nip&Tuck performs its analysis without ruling span assumptions. This frees it up to calculate sags, tensions, and deflections on a span-by-span basis. And once you've implemented the minor conductor system modifications it comes up with, you will create a lot more capacity.

No downtime

Not only does Trimble Nip&Tuck increase your energy flow with minimum expense, it also makes sure you won't even break stride while you're making it happen. With your hot line crews hard at work, you'll be reliably serving your customers, and you'll be generating revenue—all at the same time!

Trimble Nip&Tuck software

HOW IT WORKS

The Nip&Tuck process is an uprating alternative that works with the existing conductor and structures to avoid or minimize the expensive modifications of raising or changing out structures, which are often required in traditional uprating projects. With Nip&Tuck, the clearance violations caused by high temperature conductor operations may be eliminated by cutting out small lengths of wire ("nips") and/or sliding conductor support clamps ("tucks").



The Nip&Tuck process then checks both the high temperature and normal temperature tensions to ensure that vibration limits are not exceeded, that inclined insulator strings do not impose excessive loads on

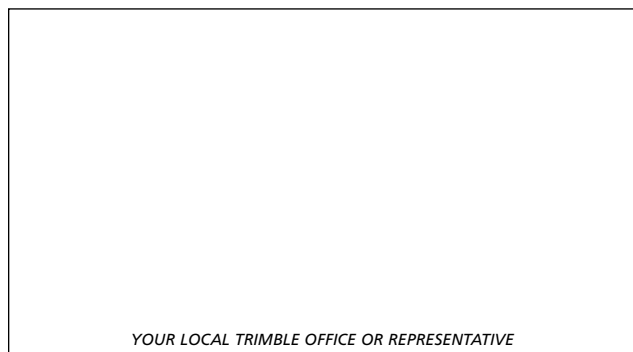
structures, and that ice-carrying capacities are not threatened for both conductors and structures.



Trimble Nip&Tuck software accounts for changes that occur due to the inherent elasticity of any structure by allowing an engineer to model and input tower flexibility.

With its interface to Trimble TL-Pro™ Design Studio, much of the data required for Trimble Nip&Tuck's calculations (such as common sag/tension data and stringing information, project elevation, span lengths, design temperature, line angles, and minimum catenary constant for each span) can be acquired from a Trimble TL-Pro project. Profile and catenary information can also be copied and pasted directly from TLCADD and other line design software packages by using Trimble Nip&Tuck's embedded Microsoft® Excel® interface.

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