

FUTURE NEW 15 kV CONSTRUCTION STANDARDS

The Rural Utilities Service (RUS) is updating and revising Bulletin 50-3 (Standard D 804, April 1983), “Specifications and Drawings for 12.5/7.2 kV Line Construction.” The update, based on the 2002 Edition of the National Electrical Safety Code (NESC), is being renumbered as Bulletin 1728F-804.

Tentative Schedule

To date, RUS personnel and the NRECA T&D Overhead Lines Subcommittee have reviewed and approved the assembly drawings and specifications in the new bulletin. Following is a tentative completion schedule for this bulletin update.

Final revisions and approval of bulletin;
 Preparation and approval of Proposed Rule;
Proposed Rule published in *Federal Register* – **Summer 2003**

60 day comment period and reconciliation of comments;
 Preparation and approval of Final Rule
Final Rule published in *Federal Register* – **Summer 2005**

Estimated Effective Date – **Summer 2007**

Significant Changes

- Assembly categories, like “anchors,” are groups of assemblies that fulfill the same function. In the new bulletin the “A” through “K” categories remain essentially unchanged. Nine new categories have been created from the “M” (miscellaneous) subcategories as follows:

Category Description	Old Designation	New Designation
Grounds	M2	H
Pole (and Line) Protection	M2	P
Reclosers	M3	R
Poles, Crossarms	M5, M19, M20	W
Sectionalizing	M3, M5	S
Voltage Regulation	M7	Y
Metering	M8	Q
Services	M8, M24	K
Tying Guides	M41-M43	L
Neutrals	- - -	N (new category)

Miscellaneous assemblies not shown in the above table have either been moved to another specific category or discontinued.

- New assemblies have been given numbers that conform to RUS’s updated standard assembly numbering format. For the 127 assemblies reused from Bulletin 50-3, borrowers may continue to use the existing numbers or may choose to use new numbers in the standard format. Bulletin 1728F-800 (Assembly Unit Numbers and Standard Format) explains the numbering system and assembly categories. This bulletin can be accessed on the RUS website at <http://www.usda.gov/rus>.
- The new pole-top, primary deadend assembly drawings show the use of 4 ¼ inch suspension insulators instead of 6-inch suspension insulators. This is only a drawing revision and does not require the borrower to make any changes in their present construction practices or material lists.
- RUS will require (now recommends) the installation of a 2 ¼ inch square washer under the shoulder of all 7.2 kV crossarm pins. Likewise, RUS will require (now recommends) the installation of a 3-inch (minimum), square, curved washer abutting the pole at all primary and neutral deadend and guy locations. These changes will allow larger line angles and greater longitudinal loading (tension) for conductors and guys. The larger surface area of the washers mitigate the crushing of wood fibers which is the limiting strength factor in these types of pole-top assembly units.
- The drawings have “design parameters” that show each assembly’s permitted loading and maximum line angles when applicable. New maximum line angle tables are in an appendix at the end of the bulletin.
- The new construction standards allow the conditional use of stirrups without further approval from RUS.
- The new bulletin has a coordinated set of new, standard, narrow profile assemblies.
- The number of assemblies and guide drawings have changed as shown below:

	<u>Bulletin 50-3</u>		<u>New 1728F-804</u>
Number of New Assemblies	0		43
New Guide Drawings (No Material)	0		50
Revised - No Material Changes	73	>	73
Revised - Minor Material Changes	54	>	54
<u>Discontinued Drawings, Assemblies</u>	<u>115</u>		<u>0</u>
TOTAL DRAWINGS and ASSEMBLIES	242		220

Possible Affects on Borrowers’ Operations

The addition of new assembly categories and the reorganization of the bulletin make it easier to find specific assemblies. The specifications for each category are conveniently

located in the same section as the drawings for the assembly category. Also, all of the pole-top primary assemblies are arranged in ascending order of permitted line angles. And all of the possible line angles are covered!

RUS has performed several line design and material strength coordination calculations for its borrowers and documented the results in the design parameters on the assembly drawings. New maximum line angle tables have been added at the end of the bulletin. The use of this information will save engineering time; it's use will also assure greater accuracy and conformance to the NESC.

On the other hand, construction personnel, engineers and others will eventually need to become familiar with some new assemblies, numbers and slight material changes (on 54 existing assemblies). However, there are only 43 new assemblies.

Moreover, most borrowers will need to modify computer software and databases for their engineering, accounting, and work order procedure programs to accommodate any assembly changes. Making these changes might be relatively easy and straightforward for some borrowers; the needed changes might be extensive and complicated for others.

Making needed software changes may cause serious problems to those borrowers who do not have enough flexibility in their software or do not reserve enough time to make changes. However, the needed changes are not as extensive as they first appear. 115 old assemblies and guide drawings will need to be discontinued. Very minor material changes (mostly washers) will need to be made to 54 assemblies. And finally, approximately 43 assemblies will need to be added to the borrower's computer files.

Start Preparing Now

Sometime after Bulletin 1728F-804 it is published in the *Federal Register*, RUS borrowers will be required to use its assemblies and specifications.

When the Proposed Rule is published in the *Federal Register* we recommend that you obtain a copy the proposed bulletin and scrutinize its drawings and specifications. Please send us your comments, suggestions, and error corrections. Our goal is to make the bulletin error free and as user friendly as possible.

We also recommend that you examine all existing (and potential new) engineering and accounting software linked to RUS standard construction assemblies to ascertain that it can easily add, delete and change construction assembly numbers and materials. Make modifications as may be necessary. Thus, you may be able to avoid extensive, time-consuming and expensive problems when Bulletin 1728F-804 becomes effective.



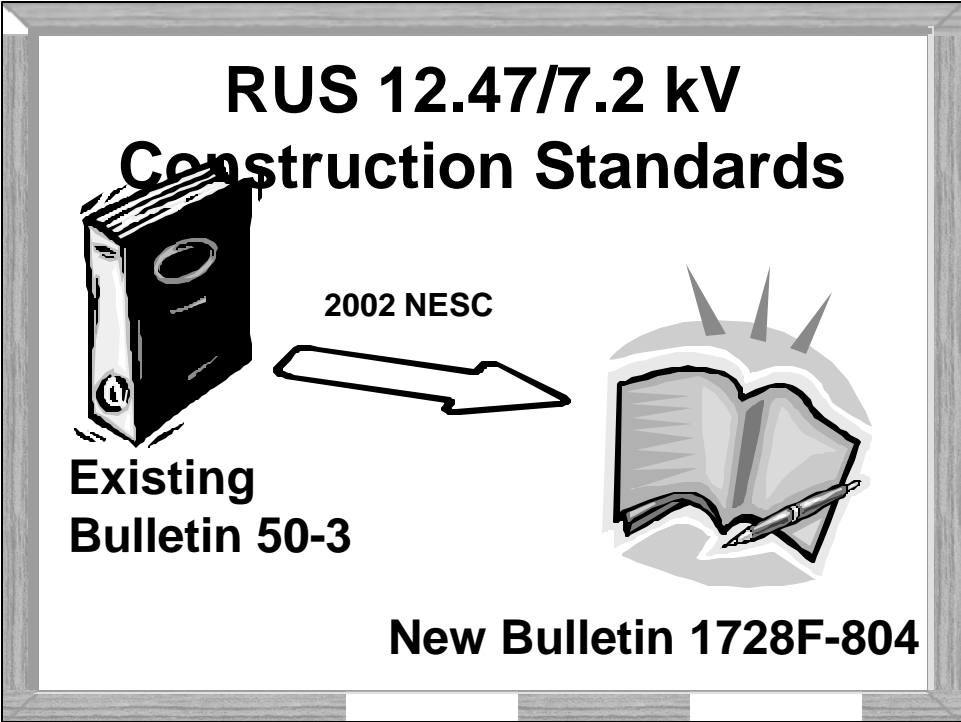
**FUTURE NEW RUS 15 kV
CONSTRUCTION STANDARDS**

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**RUS 12.47/7.2 kV
Construction Standards**



**Existing
Bulletin 50-3**

2002 NESC



New Bulletin 1728F-804

Tentative Completion Schedule




**Proposed Rule in
Federal Register:
Summer 2003**

**Final Rule in
Federal Register:
Summer 2005**

**Effective Date:
Summer 2007**

9 New Assembly Categories

- ➔ M2 (grounds) = H
- ➔ M2 (pole protection) = P
- ➔ M3 (reclosers) = R
- ➔ M3, M5 (sectionalizing) = S
- ➔ M7 (voltage regulation) = Y
- ➔ M8 (metering) = Q
- ➔ M5, M19, M20 (poles, crossarms) = W
- ➔ M41 - M43 (tying guides) = L


A through K
essentially
unchanged


New N
(neutrals)
category

More Significant Changes

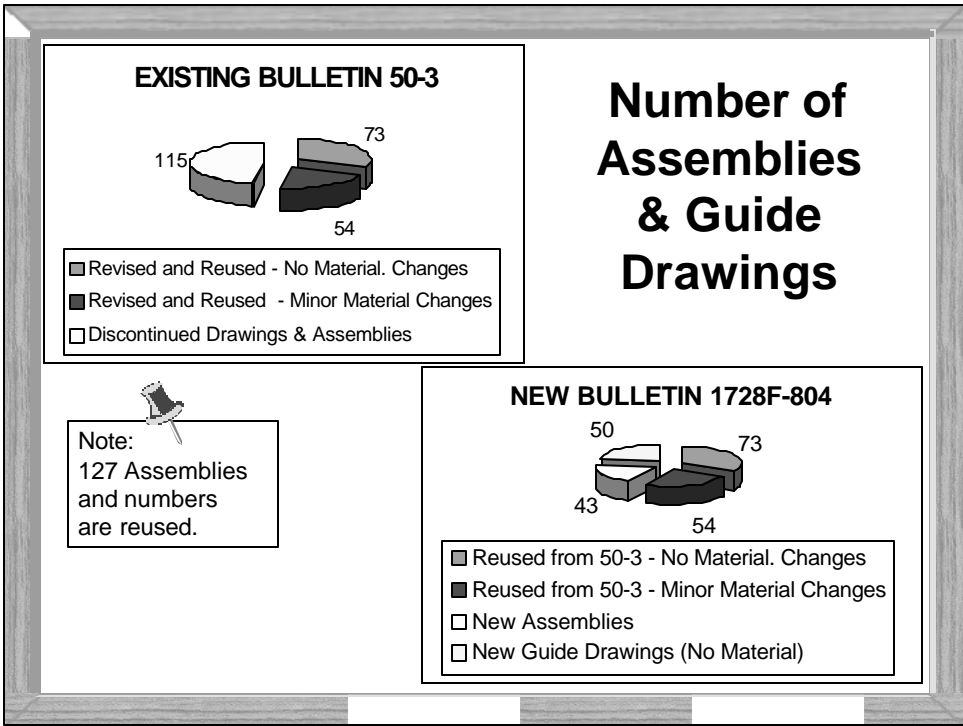
- New number format for new assemblies
- Drawings show 4-1/4" insulators
(Requires no changes by borrower)
- Design Parameters = Loading, Angles
- Allows conditional use of stirrups
- New standard narrow-profile assemblies

New Washer Applications



Under
crossarm
pins &
abutting
pole

Less wood
crushing =
1. Greater
tensions
2. Larger
angles



New Numbers (& format)

Assemblies are in order

All line angles covered

New numbers and assemblies to learn

Only 43 to learn

Easier to find assemblies

Possible extensive software changes

RUS Recommends:

Investigate all new and existing software.

Software needs to be able to easily add, delete and change construction assembly numbers and material.

Start now !