Table of Contents

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Overview

This information bulletin is a guide for the selection and application of S&C Type SMD-20 Power Fuses for installation on the primary side of overhead-type distribution transformers rated 5 kVA through 500 kVA single-phase or 15 kVA through 1500 kVA three-phase, and applied on systems having voltage ratings from 4.16 kV through 34.5 kV. The function of the primary fuse in such applications is to provide protection for the transformer against the broadest possible range of secondary-side faults, to provide protection for the system against damaging fault currents, and to coordinate with source-side and load-side overcurrent protective devices.

S&C Type SMD-20 Power Fuses, with their SMU-20 Fuse Units, provide construction features and performance characteristics particularly advantageous for transformer-protection applications. They are designed expressly for today's distribution systems, where higher fault currents, higher voltages, and higher loads commonly push cutouts beyond their capabilities.

SMD-20 Power Fuses provide full-fault-spectrum protection. They detect and interrupt all large, medium, and small (even down to minimum melting current) faults with line-to-line or line-to-ground voltage across the fuse, regardless of whether the fault is on the primary or secondary side of the transformer and regardless of the transformer winding connection. Their unique solid-material low-arc-energy technique of fault interruption produces a mild exhaust, with only one-fifth the arc energy of a cutout. Clearances can be keyed to fuse-handling requirements, not to fuse-exhaust behavior.

SMU-20 Fuse Units have silver or pretensioned nickel-chrome elements drawn through precision dies to very accurate diameters and are of solderless construction, brazed into their terminals. Their melting time-current characteristic (TCC) curves are precise, with only 10% total tolerance in melting current compared to the 20% tolerance of many fuses.

Helical coiling of the fusible elements and the absence of constraining filler materials result in elements free from mechanical and thermal stresses. SMU-20 Fuse Units conform to their TCC curves not only initially but on a sustained basis.

Neither age, corrosion, vibration, nor surges that heat the element nearly to the severing point will affect the characteristics of these fuse units. With non-damageable construction, there is no need for adjustments to the minimum melting curves such as the "safety zones" or "setback allowances" required by other fuses.

SMU-20 Fuse Units are designed to accommodate, not interrupt, all anticipated loading levels, including daily and repetitive peak loads as well as emergency peak loads. Unlike current-limiting fuses, they have peak-load capabilities in excess of their normal ampere rating. The exceptional peak-load capability of SMU-20 Fuse Units permits handling the high loading required of distribution transformers.

They also provide exceptional hot-load and cold-load pickup capabilities, even at low fusing ratios. Furthermore, these fuse units are available in a wide variety of ampere ratings and speed characteristics. This broad selection, combined with generous loading capability, precision, and non-damageability, permits the ultimate in close-fusing for maximum protection and optimal coordination.

This publication provides easy-to-use tables for simplified selection of S&C Type SMD-20 Power Fuses for distribution transformer protection. Refer to these tables to make the optimum SMU-20 Fuse Unit selection. Application factors reflected in Fuse Unit recommendations provided in the tables are discussed in detail in the next section, "The Fuse-Selection Tables."

Introduction to the Fuse-Selection Tables

A fuse unit selected to protect an overhead distribution transformer should accommodate the anticipated normal transformer loading schedule, including daily or repetitive peak loads and emergency peak loads, which has been established for a specific system.

The fuse unit selected should also withstand transformer inrush currents, including the combined effects of transformer magnetizing-inrush current and the energizing-inrush currents associated with connected loads, particularly following either a momentary or prolonged loss of source voltage. Finally, the fuse unit selected should provide protection to the transformer against the broadest possible range of secondary-side faults.

The fuse-selection tables presented in this publication are based on consideration of all of the aforementioned factors and permit the direct selection of transformer-primary fuse units that will provide maximum protection to overhead distribution transformers.

The tables list, for each transformer, the Fuse Unit ampere ratings and speeds that will accommodate the full range of loading levels normally encountered, including those that can be picked up under hot-load and cold-load conditions and that will withstand the energizing-inrush currents associated with each transformer shown.

In addition, for each such fuse unit, the degree of transformer protection provided by the primary-side fuse unit is quantified using S&C's unique "Transformer Protection Index,' which indicates the level of secondary-fault current down to which the fuse unit will protect the transformer in accordance with the transformer short-time characteristic curve. Refer to these tables to select the optimal Fuse Unit ampere rating and speed to protect a transformer.

Selection of a fuse unit ampere rating and speed characteristic for protection of overhead distribution transformers, as outlined in this publication, is but one aspect of the total protection program for a distribution system. It is necessary to consider not only the degree of protection afforded the distribution transformer, but also the degree of coordination between the transformer-primary fuse and other source-side and load-side overcurrent protective devices.

Therefore, after the transformer-primary fuse unit ampere rating and speed characteristic have been selected as outlined in "How to Use the Fuse-Selection Tables" on page 28, compliance of the selection with coordination requirements should be verified. Then, it is only necessary to determine the appropriate power fuse voltage rating and verify the short-circuit interrupting rating is sufficient for the application (considering the maximum anticipated available fault current at the power fuse location). Refer to Table 21 on page 27.

The short-circuit interrupting ratings listed in Table 21 have been determined in accordance with the procedures described in ANSI Standard C37.41-1981. Moreover, with respect to the requirement in this standard for testing with circuits having an X/R ratio of at least 15 (corresponding to an asymmetry factor of 1.55), S&C's tests were performed under the more severe condition of X/R = 20, corresponding to an asymmetry factor of 1.6.

Based on the recognition that there are many applications where the X/R ratio is less severe than the value of 15 specified by the standard, higher symmetrical interrupting ratings are also listed in Table 21 for X/R = 10 and X/R = 5.

Basis for Listings in the Fuse-Selection Tables

The fuse-selection tables presented in this publication were developed in accordance with the application principles previously mentioned. In applying these principles, it is necessary to make certain decisions and assumptions, all of which are outlined in the following sections through page 6. For easy access to this information, it is arranged in the following sections in the same order as the subjects appear in the fuse-selection tables.

Transformer Self-Cooled Ratings

Table 22 on page 28 serves as an index to the fuse-selection tables applicable to overhead-type distribution transformers rated 5 kVA through 500 kVA single-phase or 15 kVA through 1500 kVA three-phase and applied on systems having voltage ratings from 4.16 kV through 34.5 kV. The fuse-selection tables are also applicable to pad-mounted, compartmented-type distribution transformers in ratings through 167 kVA single-phase or 500 kVA three-phase.

Loading Capability

Peak-load capability values are listed in the fuse-selection tables for each fuse unit ampere rating based on three separate conditions: continuous peak load, hot-load pickup, and cold-load pickup. These three capabilities are described below.

1. **Continuous peak-load capability.** The ability of a transformer-primary fuse to carry continuous peak-load current, applicable also to repetitive daily peak loads regardless of duration. The peak-load capability values listed in the selection tables are derived from the continuous peak-load capabilities of the fuse units, adjusted to reflect a 40°C (104°F) ambient temperature.

   A 40°C ambient temperature was used recognizing the need for reliable, uninterrupted service provided by distribution transformers is most crucial on days when the load is highest, a condition usually coincident with summer peak loads and/or heat storms. Accordingly, even under such severe conditions of loading, an unnecessary fuse operation caused by the high ambient temperature will be avoided.

   The fuse units listed can also accommodate emergency peak-load currents on a nonrepetitive basis. For information on continuous and emergency peak-load capabilities of S&C Type SMD-20 Power Fuses, refer to S&C Information Bulletin 240-190.

2. **Hot-load pickup capability.** The ability of a fully preloaded transformer-primary fuse to withstand the multiple inrush currents that occur when a source-side recloser operates in response to a fault. The inrush current associated with each recloser closing operation is assumed to be a combination of the transformer magnetizing-inrush current plus the inrush currents associated with start-up of motor and lighting equipment (up to six times the pre-interruption load current).

   Two recloser operating sequences were evaluated: A two-fast, one-slow operating sequence and a two-fast, two-slow operating sequence. For each sequence, there was no intentional time delay between the two instantaneous operations and a two-second time delay between the second and third operations.

   For the two-fast, two-slow operating sequence, a five-second time delay between the third and fourth operations was assumed. The hot-load pickup capability values listed in the tables represent the minimum value possible considering these two recloser operating sequences.

   In addition, the hot-load pickup capability values listed in the tables are based on the emergency peak-load capabilities of the fuse units because the shorter durations associated with these capabilities are more appropriate for this calculation than are continuous capabilities.

3. **Cold-load pickup capability.** The ability of a transformer-primary fuse to withstand the overcurrents that occur because of the loss of load diversity following an extended outage (30 minutes or more). The "cold" fuse unit will withstand the transformer magnetizing-inrush current, superimposed on the transient overcurrent associated with picking up cold, the maximum pre-outage load indicated by the values listed in the tables under this heading.

   The assumed cold-load current profile● is based on typical loading practices of residential-service distribution transformers, where most peak loads these transformers experience are associated with central or large room-type air conditioners or electric heating equipment having cycling characteristics. The time-integrated heating effect of the cold-load current profile on the fuse unit is assumed to be equivalent to the following multiples of pre-outage load current:

   - 6X for one second
   - 3X for up to 10 seconds
   - 2X for up to 15 minutes

● Oliver Ramsaur, "A New Approach to Cold-Load Restoration," *Electrical World*, October 6, 1952.

The Transformer Protection Index

The Transformer Protection Index is provided in the fuse-selection tables to allow evaluation of the degree of transformer protection provided by the transformer-primary fuse unit ampere rating selected. Two objectives must be achieved to obtain a comprehensive level of protection for the transformer.

First, the total clearing TCC curve of the fuse unit should pass below and to the left of the ANSI Point of the appropriate transformer short-time characteristic curve. Second, the point at which the two curves intersect should be at as low a multiple of the transformer-primary full-load current as possible.

The Transformer Protection Index indicates how well these two objectives are achieved. The presence of an index indicates the first objective was achieved. The absence of an index signifies the fuse unit does not provide protection for the transformer, because the total clearing TCC curve of the fuse unit passes above and to the right of the ANSI Point.

Accordingly, a smaller fuse unit ampere rating should be selected. The indexes indicate the magnitude of fault current, expressed as a percentage of the transformer full-load current, down to which the fuse unit will operate to protect the transformer in accordance with the transformer short-time characteristic curve. Refer to Figure 1.

The indexes are listed in the fuse-selection tables for commonly used transformer connections. For delta grounded-wye connected transformers, the indexes are based on a phase-to-ground secondary fault, which is the most demanding type of fault for this transformer connection from a protection standpoint.

For delta-delta connected transformers, the indexes are based on a phase-to-phase secondary fault, which is the most demanding type of fault for this transformer connection from a protection standpoint.

For single-phase transformers and three-phase grounded-wye grounded-wye connected transformers, the indexes should be based on a three-phase secondary fault. However, because the indexes for single-phase transformers and three-phase grounded-wye grounded-wye transformer connections (based on a three-phase secondary fault) are only slightly smaller (better) than the indexes determined for delta-delta connected transformers, for simplicity only indexes for the delta-delta connected transformers have been listed in the

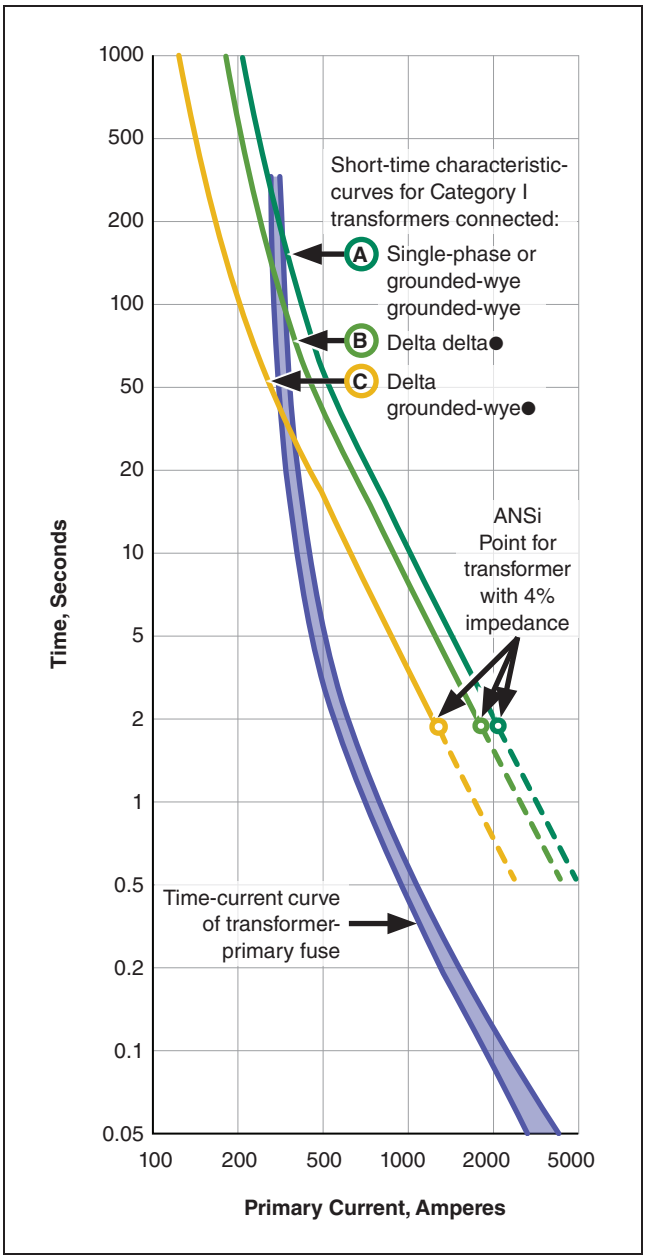

Figure 1. The Transformer Protection Index (TPI) indicates the magnitude of fault current down to which the primary fuse will protect the transformer in accordance with short-time characteristic curves. For example, the total clearing curve of the primary fuse intersects the curve for the delta grounded-wye connected transformer at 385% of the full load current, representing a TPI of 385%.

● Curves B and C represent curve A adjusted to reflect reduced level of current seen by two primary fuses during a phase-to-phase secondary fault (0.87 per-unit) or a phase-to-ground secondary fault (0.58 per-unit), respectively.

fuse-selection tables. For purposes of determining transformer protection indexes, it is assumed transformers listed in the fuse-selection tables larger than 500 kVA three-phase are made up of three single-phase transformers, designated Category I in ANSI Standards.●

Ampere Rating

For each transformer kVA rating, the fuse-selection tables list a choice of fuse unit ampere ratings in each of four speed characteristics: S&C "K" Speed, TCC No. 165; S&C Standard Speed, TCC No. 153; S&C Slow Speed, TCC No. 119; and S&C Very Slow Speed, TCC No. 176. The lowest ampere rating listed for each transformer kVA rating and for each speed characteristic provides a minimum loading capability for any of the three conditions evaluated of at least 90% of the full-load current of the transformer.

● Category I transformers, as designated in ANSI Standard C57.12.00-1980, "General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers," are those rated 5 kVA through 500 kVA single-phase, 15 kVA through 500 kVA three-phase.

Table 1. Transformers Rated 2.4 kV Single-Phase① or 4.16 kV Three-Phase

SMU-20 Fuse Unit Speed →			S&C "K" Speed—TCC No. 165-2						S&C Standard Speed—TCC No. 153-2						S&C Slow Speed—TCC No. 119-2						S&C Very Slow Speed—TCC No. 176-2					
Transformer Rating, kVA ↓		Trans-former Full-Load Current, Amperes ↓	Fuse Unit Peak-Load Capa-bility②, Percent of Transformer kVA Rating			Transformer Protec-tion Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capa-bility②, Percent of Transformer kVA Rating			Transformer Protec-tion Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capa-bility②, Percent of Transformer kVA Rating			Transformer Protec-tion Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capa-bility②, Percent of Transformer kVA Rating			Transformer Protec-tion Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes
Single-Phase	Three-Phase		Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△ Y–Y	△–Y		Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△ Y–Y	△–Y		Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△ Y–Y	△–Y		Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△ Y–Y	△–Y	
5	15	2.08	190	190	110	370	395	3K																		
			440	430	185	700	780	6K	320	320	160	580	610	5E												
			585	590	250	1000	1370	8K	510	515	230	850	1320	7E												
			730	740	320	1370	—	10K	730	740	350	1420	—	10E												
10	30	4.16	295	260	125	445	465	8K	255	255	115	405	410	7E												
			365	370	160	560	600	10K	365	370	175	560	620	10E												
			440	440	215	800	940	12K	475	480	210	710	850	13E												
			550	555	270	1020	1650	15K	550	555	255	920	-	15E	550	555	295	1140	—	15E						
15	45	6.25	245	195	105	355	370	10K	245	235	115	355	365	10E												
			290	295	145	495	520	12K	315	320	140	460	470	13E												
			365	370	180	610	680	15K	365	370	170	550	600	15E	365	370	195	600	740	15E						
			485	495	230	850	1010	20K	485	495	220	730	880	20E	485	495	250	850	—	20E						
25	75	10.4	220	190	110	350	365	15K	220	190	100	320	325	15E	220	200	120	330	355	15E						
			290	295	135	475	500	20K	290	295	130	425	440	20E	290	295	150	435	485	20E						
			365	370	170	600	690	25K	365	370	175	550	610	25E	365	370	185	560	660	25E						
			440	445	215	820	1000	30K	440	445	215	690	850	30E	440	445	225	740	1220	30E						
37½	112½	15.6	195	130	90	300	315	20K	195	135	90	285	285	20E	195	145	100	280	290	20E						
			245	225	115	385	405	25K	245	235	115	355	365	25E	245	220	125	355	375	25E						
			290	295	145	510	550	30K	290	295	140	430	460	30E	290	295	150	450	500	30E						
			365	370	190	670	770	40K	365	370	180	580	640	40E	365	370	215	670	1130	40E	475	495	290	1350	—	50E
50	150	20.8	220	200	110	365	385	30K	220	190	105	315	325	30E	185	110	95	260	265	25E						
			275	280	145	470	510	40K	275	280	135	425	445	40E	220	200	115	320	340	30E						
			355	370	180	640	720	50K	355	370	175	560	630	50E	275	280	165	440	530	40E	355	370	220	620	—	50E
			455	480	225	870	1050	65K	455	480	230	790	960	65E	355	370	205	580	860	50E	455	480	285	1070	—	65E
75	225	31.2	185	135	95	295	315	40K	185	120	90	280	285	40E	185	175	110	285	300	40E	240	245	145	370	420	50E
			240	235	120	395	425	50K	240	230	115	355	375	50E	240	245	135	360	400	50E	305	320	190	520	740	65E
			305	320	150	530	570	65K	305	320	155	475	520	65E	305	320	165	475	560	65E	340	350	235	740	—	80E
			340	350	190	690	780	80K	340	350	190	630	710	80E	340	350	215	640	1050	80E	425	435	290	1650	—	100E
100	300	41.6	180	110	90	275	300	50K	180	95	90	265	275	50E	180	155	100	265	275	50E	180	180	110	270	285	50E
			230	220	110	385	405	65K	230	235	115	350	365	65E	230	230	125	345	370	65E	230	240	140	360	405	65E
			255	260	140	495	530	80K	255	260	145	460	490	80E	255	260	160	445	520	80E	255	260	175	470	620	80E
			320	325	185	630	720	100K	320	325	180	570	630	100E	320	325	200	580	820	100E	320	325	220	670	—	100E
167	500	69.4							190	195	105	320	335	100E	155	135	95	260	260	80E	155	155	105	260	275	80E
			190	195	110	345	375	100K	195	205	140	445	465	125E	190	195	120	325	340	100E	190	195	130	335	375	100E
			210	225	165	630	760	140K	255	270	170	570	620	150E	195	205	165	475	540	125E	225	230	180	495	630	125E
			275	290	270	1320	—	200K	260	270	195	650	720	175E	255	270	195	590	780	150E	255	270	215	650	—	150E
250	750	104							130	135	95	290	295	125E	130	135	110	295	315	125E	150	155	120	295	325	125E
									170	180	115	365	380	150E	170	180	130	365	400	150E	170	180	145	370	425	150E
			140	150	125	375	410	140K	175	180	130	415	430	175E	175	180	150	425	475	175E	175	180	170	450	550	175E
			185	195	210	730	860	200K	185	185	145	480	500	200E	185	185	170	510	580	200E	185	185	190	530	760	200E
333	1000	139																			115	105	90	215	225	125E
															125	135	100	265	280	150E	125	135	110	265	285	150E
									130	135	95	300	315	175E	130	135	110	310	325	175E	130	135	125	315	355	175E
			135	145	155	500	520	200K	135	140	105	350	360	200E	135	140	130	365	390	200E	135	140	145	375	425	200E

① Phase-to-neutral or phase-to-phase.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 2. Transformers Rated 4.8 kV Three-Phase

SMU-20® Fuse Unit Speed →		S&C "K" Speed—TCC No. 165-2						S&C Standard Speed—TCC No. 153-2						S&C Slow Speed—TCC No. 119-2						S&C Very Slow Speed—TCC No. 176-2					
Transformer Rating, kVA, Three-Phase ↓	Transformer Full-Load Current, Amperes ↓	Fuse Unit Peak-Load Capability, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability①, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability①, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability①, Percent of TransformerkVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes
		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	△–△	△–⫞		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	△–△	△–⫞		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	△–△	△–⫞		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	△–△	△–⫞	
15	1.80	220	220	125	435	465	3K																		
		505	510	210	830	990	6K	370	370	185	670	760	5E												
		680	680	290	1230	—	8K	590	595	265	1030	—	7E												
		845	855	370	1850	—	10K																		
30	3.61	250	170	105	400	400	6K	185	175	95	335	335	5E												
		340	330	145	525	560	8K	295	295	135	460	475	7E												
		420	425	185	660	730	10K	420	425	200	650	740	10E												
		505	510	250	960	1320	12K	550	555	245	830	1150	13E												
45	5.41	225	135	95	335	350	8K	195	165	90	310	310	7E												
		280	260	125	425	445	10K	280	285	135	420	445	10E												
		335	340	165	580	640	12K	365	370	160	530	570	13E												
		420	430	205	740	860	15K	420	430	195	650	750	15E	420	430	225	740	1200	15E						
75	9.02	200	145	100	330	345	12K	220	185	95	320	320	13E												
		255	245	125	415	435	15K	255	250	120	375	385	15E	255	250	135	395	430	15E						
		335	345	160	560	600	20K	335	345	155	495	520	20E	335	345	175	520	610	20E						
		420	430	195	720	830	25K	420	430	200	650	750	25E	420	430	215	670	970	25E						
112½	13.5	225	195	105	350	365	20K	225	195	100	330	335	20E	170	100	90	250	260	15E						
		280	280	130	450	475	25K	280	285	135	415	435	25E	225	200	115	325	350	20E						
		340	340	165	590	650	30K	340	340	165	510	560	30E	280	270	145	415	445	25E						
		420	430	220	800	970	40K	420	430	210	690	790	40E	340	340	175	530	620	30E						
150	18.0	210	165	100	325	340	25K	210	180	100	305	315	25E	210	165	105	310	315	25E						
		255	250	125	425	455	30K	255	250	125	370	390	30E	255	250	130	380	410	30E						
		315	320	165	550	610	40K	315	320	155	500	530	40E	315	320	190	540	700	40E						
		410	425	210	750	890	50K	410	425	205	670	780	50E	410	425	235	740	—	50E	410	425	250	840	-	50E
225	27.1	210	205	110	345	370	40K	210	185	105	325	335	40E	210	215	125	330	365	40E						
		275	285	140	465	505	50K	275	280	135	415	445	50E	275	285	155	430	495	50E	275	285	170	440	560	50E
		350	370	170	620	700	65K	350	370	180	560	630	65E	350	370	195	570	750	65E	350	370	220	630	-	65E
		390	405	220	820	980	80K	390	405	220	760	890	80E	390	405	245	810	—	80E	390	405	270	1020	-	80E
300	36.1	205	180	105	330	355	50K	205	170	100	305	315	80E	160	125	95	250	255	40E	205	215	125	315	340	50E
		265	270	130	450	480	65K	265	275	135	410	440	65E	205	205	120	310	330	50E	265	275	165	425	520	65E
		295	300	165	580	640	80K	295	300	165	540	590	80E	265	275	145	410	450	65E	295	300	200	580	1080	80E
		370	375	215	760	910	100K	370	375	205	680	780	100E	295	300	185	530	690	80E	370	375	250	910	-	100E
500	60.1	175	160	100	325	340	80K	175	170	100	300	315	50E	175	180	110	295	310	80E	160	145	100	240	250	65E
		220	225	130	405	445	100K	220	225	125	375	400	100E	220	225	140	380	410	100E	175	180	120	300	330	80E
		245	260	220	760	950	140K	230	240	160	520	550	125E	230	240	190	560	720	125E	220	225	150	400	475	100E
		315	335	360	1750	—	200K	295	310	200	670	760	150E	295	310	225	730	1300	150E	260	270	205	600	1030	125E
750	90.2							150	160	105	335	345	125E	145	125	90	250	255	100E	145	150	100	250	270	100E
								195	205	135	425	445	150E	150	160	125	350	380	125E	175	180	140	355	400	125E
		160	175	145	450	510	140K	200	205	150	485	510	175E	195	205	150	435	490	150E	195	205	165	445	580	150E
		210	225	240	900	1150	200K	210	215	165	560	600	200E	200	205	175	510	600	175E	200	205	195	550	870	175E
1000	120													115	110	95	255	265	125E	130	135	105	255	275	125E
								145	155	100	305	320	150E	145	155	115	310	335	150E	145	155	125	315	350	150E
		120	130	110	310	345	140K	150	155	110	350	365	175E	150	155	130	365	390	175E	150	155	145	380	440	175E
		160	165	180	610	700	200K	160	160	125	410	425	200E	160	160	150	430	475	200E	160	160	165	450	560	200E

① These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 3. Transformers Rated 4.16 kV Single-Phase① or 7.2 kV Three-Phase

SMU-20 Fuse Unit Speed →			S&C "K" Speed—TCC No. 165-2						S&C Standard Speed—TCC No. 153-2						S&C Slow Speed—TCC No. 119-2						S&C Very Slow Speed—TCC No. 176-2					
Transformer Rating, kVA		Transformer Full-Load Current, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes
Single-Phase	Three-Phase		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ–Δ Y–Y	Δ–Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ–Δ Y–Y	Δ–Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ–Δ Y–Y	Δ–Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ–Δ Y–Y	Δ–Y	
5	15	1.20	335	335	190	690	800	3K																		
			760	765	315	1450	—	6K	560	555	280	1180	—	5E												
10	30	2.41	165	165	95	320	335	3K	280	280	140	500	510	5E												
			380	360	160	600	640	6K	440	445	200	710	830	7E												
			505	510	215	840	1000	8K	630	640	300	1130	—	10E												
			630	640	275	1110	—	10K	820	830	365	1850	—	13E												
15	45	3.61	250	170	105	400	400	6K	185	175	95	335	335	5E												
			340	320	145	525	560	8K	295	295	135	460	475	7E												
			420	425	185	660	730	10K	420	425	200	650	740	10E												
			505	510	250	960	1320	12K	550	555	245	830	1150	13E												
25	75	6.01	255	215	110	380	395	10K	255	250	120	375	390	10E												
			305	305	150	520	560	12K	330	335	145	480	495	13E												
			380	385	185	650	730	15K	380	385	175	580	640	15E	380	385	205	640	820	15E						
			505	515	235	910	1100	20K	505	515	230	780	960	20E	505	515	260	920	—	20E						
37½	112½	9.02	200	145	100	330	345	12K	220	185	95	320	320	13E												
			255	245	125	415	435	15K	255	250	120	375	385	15E	255	250	135	395	430	15E						
			335	345	160	560	600	20K	335	345	155	495	520	20E	335	345	175	520	610	20E						
			420	430	195	720	830	25K	420	430	200	650	750	25E	420	430	215	670	970	25E						
50	150	12.0	190	120	95	300	310	15K	190	130	90	275	280	15E	190	145	100	285	300	15E						
			255	240	120	400	420	20K	255	245	115	370	375	20E	255	245	130	375	405	20E						
			315	320	145	510	550	25K	315	320	150	470	500	25E	315	320	160	475	530	25E						
			380	385	190	680	780	30K	380	385	185	580	660	30E	380	385	195	620	770	30E						
75	225	18.0	210	165	100	325	340	25K	210	180	100	305	315	25E	210	165	105	310	315	25E						
			255	250	125	425	455	30K	255	250	125	370	390	30E	255	250	130	380	410	30E						
			315	320	165	550	610	40K	315	320	155	500	530	40E	315	320	190	540	700	40E						
			410	425	210	750	890	50K	410	425	205	670	780	50E	410	425	235	740	—	50E	410	425	250	840	—	50E
100	300	24.1	190	135	95	310	325	30K	190	130	90	275	280	30E	190	150	100	280	290	30E						
			235	240	125	400	425	40K	235	235	115	365	375	40E	235	240	140	375	430	40E						
			305	320	155	540	590	50K	305	320	150	475	510	50E	305	320	175	495	600	50E	305	320	190	510	770	50E
			395	415	195	720	830	65K	395	415	200	650	740	65E	395	415	215	670	1070	65E	395	415	245	770	—	65E
167	500	40.1	185	130	95	290	315	50K	185	120	90	275	280	50E	185	170	105	275	290	50E	185	190	115	280	295	50E
			235	230	115	400	420	65K	235	245	120	365	385	65E	235	245	130	360	380	65E	235	250	145	375	425	65E
			265	270	145	510	550	80K	265	270	150	475	520	80E	265	270	165	465	550	80E	265	270	180	495	680	80E
			330	340	195	660	770	100K	330	340	185	600	660	100E	330	340	205	610	920	100E	330	340	225	710	—	100E
250	750	60.1	175	160	100	325	340	80K	175	170	100	300	315	80E	175	180	110	295	310	80E	160	145	100	240	250	65E
			220	225	130	405	445	100K	220	225	125	375	400	100E	220	225	140	380	410	100E	175	180	120	300	330	80E
			245	260	220	760	950	140K	230	240	160	520	550	125E	230	240	190	560	720	125E	220	225	150	400	475	100E
			315	335	360	1750	—	200K	295	310	200	670	760	150E	295	310	225	730	1300	150E	260	270	205	600	1030	125E
333	1000	80.2							165	145	95	275	285	100E	165	165	105	275	290	100E	130	120	90	225	230	80E
			165	140	95	290	310	100K	170	180	120	380	390	125E	170	180	140	400	440	125E	165	170	115	285	310	100E
			180	195	165	520	600	140K	220	230	150	480	510	150E	220	230	170	500	590	150E	195	200	155	410	480	125E
			235	250	270	1080	1650	200K	225	230	165	550	590	175E	225	230	195	590	770	175E	220	230	185	520	820	150E
500	1500	120													115	110	95	255	265	125E	130	135	105	255	275	125E
									145	155	100	305	320	150E	145	155	115	310	335	150E	145	155	125	315	350	150E
			120	130	110	310	345	140K	150	155	110	350	365	175E	150	155	130	365	390	175E	150	155	145	380	440	175E
			160	165	180	610	700	200K	160	160	125	410	425	200E	160	160	150	430	475	200E	160	160	165	450	560	200E

① Phase-to-neutral or phase-to-phase.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 4. Transformers Rated 4.8 kV Single-Phase① or 8.32 kV Three-Phase

SMU-20 Fuse Unit Speed →			S&C "K" Speed—TCC No. 165-2						S&C Standard Speed—TCC No. 153-2						S&C Slow Speed—TCC No. 119-2						S&C Very Slow Speed—TCC No. 176-2					
Transformer Rating, kVA		Transformer Full-Load Current, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes
Single-Phase	Three-Phase		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ–Δ Y–Y	Δ–Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ–Δ Y–Y	Δ–Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ–Δ Y–Y	Δ–Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ–Δ Y–Y	Δ–Y	
5	15	1.04	385	385	220	820	1110	3K																		
			875	885	365	1950	—	6K	645	645	325	1600	—	5E												
10	30	2.08	190	190	110	370	395	3K																		
			440	430	185	700	780	6K	320	320	160	580	610	5E												
			585	590	250	1000	1370	8K	510	515	230	850	1320	7E												
			730	740	320	1370	—	10K	730	740	350	1420	—	10E												
15	45	3.12	290	240	120	460	470	6K	215	215	110	390	390	5E												
			390	385	165	610	670	8K	340	345	155	530	570	7E												
			485	495	215	790	910	10K	485	495	235	790	970	10E												
			585	590	285	1190	—	12K	635	640	280	1050	—	13E												
25	75	5.2	235	155	100	355	365	8K	205	180	90	325	325	7E												
			290	275	130	445	470	10K	290	295	140	440	470	10E												
			350	355	170	620	690	12K	380	385	170	560	600	13E												
			440	445	215	790	940	15K	440	445	205	690	800	15E	440	445	235	770	1500	15E						
37½	112½	7.81	235	210	115	390	405	12K	195	140	95	285	290	10E												
			290	295	145	480	510	15K	255	245	115	370	375	13E												
			390	395	180	660	740	20K	290	295	135	435	460	15E	290	295	155	465	520	15E						
			485	495	225	870	1080	25K	390	395	175	580	630	20E	390	395	200	620	830	20E						
50	150	10.4	220	190	110	350	365	15K	220	190	100	320	325	15E	220	200	120	330	355	15E						
			290	295	135	475	500	20K	290	295	130	425	440	20E	290	295	150	435	485	20E						
			365	370	170	600	690	25K	365	370	175	550	610	25E	365	370	185	560	660	25E						
			440	445	215	820	1000	30K	440	445	215	690	850	30E	440	445	225	740	1220	30E						
75	225	15.6	195	130	90	300	315	20K	195	135	90	285	285	20E	195	145	100	280	290	20E						
			245	225	115	385	405	25K	245	235	115	355	365	25E	245	220	125	355	375	25E						
			290	295	145	510	550	30K	290	295	140	430	460	30E	290	295	150	450	500	30E						
			365	370	190	670	770	40K	365	370	180	580	640	40E	365	370	215	670	1130	40E						
100	300	20.8	220	200	110	365	385	30K	220	190	105	315	325	30E	185	110	95	260	265	25E						
			275	280	145	470	510	40K	275	280	135	425	445	40E	220	200	115	320	340	30E						
			355	370	180	640	720	50K	355	370	175	560	630	50E	275	280	165	440	530	40E	355	370	220	620	—	50E
			455	480	225	870	1050	65K	455	480	230	790	960	65E	355	370	205	580	860	50E	455	480	285	1070	—	65E
167	500	34.7	215	200	110	350	375	50K	215	190	105	315	330	50E	165	135	100	255	260	40E	215	220	130	325	355	50E
			275	285	135	475	500	65K	275	290	140	425	455	65E	215	220	120	320	345	50E	275	290	170	445	550	65E
			305	315	170	605	670	80K	305	315	170	560	620	80E	275	290	150	425	470	65E	305	315	210	600	1350	80E
			385	390	225	800	990	100K	385	390	215	710	820	100E	305	315	190	560	740	80E	385	390	260	1000	—	100E
250	750	52	185	115	90	300	315	65K	185	145	95	275	285	65E	185	150	100	280	280	65E	185	185	115	280	295	65E
			205	210	115	385	404	80K	205	210	115	355	375	80E	205	210	130	345	370	80E	205	210	140	355	405	80E
			255	260	150	485	540	100K	255	260	145	445	475	100E	255	260	160	445	510	100E	255	260	175	480	650	100E
			280	300	250	920	1240	140K	265	275	185	610	670	125E	265	275	220	680	1100	125E	300	310	240	750	—	125E
333	1000	69.4							190	195	105	320	335	100E	155	135	95	260	260	80E	155	155	105	260	275	80E
			190	195	110	345	375	100K	195	205	140	445	465	125E	190	195	120	325	340	100E	190	195	130	335	375	100E
			210	225	190	630	760	140K	255	270	170	570	620	150E	195	205	165	475	540	125E	225	230	180	495	630	125E
			275	290	310	1320	-	200K	260	270	195	650	720	175E	255	270	195	590	780	150E	255	270	215	650	—	150E
500	1500	104							130	135	95	290	295	125E	130	135	110	295	315	125E	150	155	120	295	325	125E
									170	180	115	365	380	150E	170	180	130	365	400	150E	170	180	145	370	425	150E
			140	150	125	375	410	140K	175	180	130	415	430	175E	175	180	150	425	475	175E	175	180	170	450	550	175E
			185	195	210	730	860	200K	185	185	145	480	500	200E	185	185	170	510	580	200E	185	185	190	530	760	200E

① Phase-to-neutral or phase-to-phase.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 5. Transformers Rated 6.9 kV Single-Phase① or 12.0 kV Three-Phase

SMU-20 Fuse Unit Speed →			S&C "K" Speed—TCC No. 165-2						S&C Standard Speed—TCC No. 153-2						S&C Slow Speed—TCC No. 119-2						S&C Very Slow Speed—TCC No. 176-2					
Transformer Rating, kVA ↓		Transformer Full-Load Current, Amperes ↓	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes
Single-Phase	Three-Phase		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ–Δ Yg–Yg	Δ–Yg		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ–Δ Yg–Yg	Δ–Yg		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ–Δ Yg–Yg	Δ–Yg		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ–Δ Yg–Yg	Δ–Yg	
5	15	0.72	555	555	315	1500		3K																		
10	30	1.44	280	275	155	550	610	3K																		
			630	635	265	1100	1650	6K	465	465	235	870	—	5E												
			845	850	360	1800	—	8K	735	740	330	1800	—	7E												
15	45	2.17	185	185	105	345	365	3K																		
			420	410	175	660	730	6K	310	310	155	560	590	5E												
			560	570	240	940	1200	8K	490	495	220	810	1130	7E												
			700	710	310	1270		10K	700	710	335	1350	—	10E												
25	75	3.61	250	170	105	400	400	6K	185	175	95	335	335	5E												
			340	330	145	525	560	8K	295	295	135	460	475	7E												
			420	425	185	660	730	10K	420	425	200	650	740	10E												
			505	510	250	960	1320	12K	550	555	245	830	1150	13E												
37½	112½	5.41	225	135	95	335	350	8K	195	165	90	310	310	7E												
			280	260	125	425	445	10K	280	285	135	420	445	10E												
			335	340	165	580	640	12K	365	370	160	530	570	13E												
			420	430	205	740	850	15K	420	430	195	650	750	15E	420	430	225	740	1200	15E						
50	150	7.22	210	125	90	310	315	10K	210	175	100	310	320	10E												
			250	240	125	425	445	12K	275	275	120	405	405	13E												
			315	320	155	530	570	15K	315	320	145	475	510	15E	315	320	170	510	580	15E						
			420	430	195	720	810	20K	420	430	190	630	710	20E	420	430	220	690	1030	20E						
75	225	10.8	210	175	105	340	350	15K	210	175	100	310	315	15E	210	185	115	320	340	15E						
			280	280	130	455	480	20K	280	285	125	415	425	20E	280	285	145	415	460	20E						
			350	355	165	580	640	25K	350	355	165	530	580	25E	350	355	180	530	620	25E						
			420	430	210	790	940	30K	420	430	205	660	790	30E	420	430	220	710	1030	30E						
100	300	14.4	210	165	100	325	345	20K	210	170	95	305	305	20E	210	175	110	305	320	20E						
			265	255	125	420	445	25K	265	265	125	385	400	25E	265	250	135	385	410	25E						
			315	320	155	550	610	30K	315	320	155	465	510	30E	315	320	165	490	560	30E						
			395	400	205	730	860	40K	395	400	195	630	710	40E	395	400	235	750	2000	40E						
167	500	24.1	190	135	95	310	325	30K	190	130	90	275	280	30E	190	150	100	280	290	30E						
			235	240	125	400	425	40K	235	235	115	365	375	40E	235	240	140	375	430	40E						
			305	320	155	530	580	50K	305	320	150	475	510	50E	305	320	175	495	600	50E	305	320	190	510	770	50E
			395	415	195	720	820	65K	395	415	200	650	740	65E	395	415	215	670	1070	65E	395	415	245	770	—	65E
250	750	36.1	205	180	105	330	355	50K	205	170	100	305	315	50E	160	125	95	250	255	40E	205	215	125	315	340	50E
			265	270	130	450	480	65K	265	275	135	410	440	65E	205	205	120	310	330	50E	265	275	165	425	520	65E
			295	300	165	580	640	80K	295	300	165	540	590	80E	265	275	145	410	450	65E	295	300	200	580	1080	80E
			370	375	215	760	910	100K	370	375	205	680	780	100E	295	300	185	530	690	80E	370	375	250	910	—	100E
333	1000	48.1	200	155	95	325	345	65K	200	180	100	300	310	65E	200	180	110	300	310	65E	155	140	95	235	240	50E
			220	225	125	415	440	80K	220	225	125	390	415	80E	220	225	140	380	415	80E	200	210	125	305	330	65E
			275	285	160	530	590	100K	275	285	155	485	520	100E	275	285	170	490	590	100E	220	225	150	390	465	80E
			305	325	270	1030	1500	140K	285	295	200	670	750	125E	285	295	235	780	1900	125E	275	285	190	540	900	100E
500	1500	72.2							185	190	105	310	325	100E	145	125	90	250	250	80E	145	150	100	250	260	80E
			185	185	105	330	355	100K	190	200	135	425	445	125E	185	190	115	310	325	100E	185	190	125	320	360	100E
			200	220	180	590	690	140K	245	260	165	540	590	150E	190	200	155	450	520	125E	215	225	170	470	580	125E
			265	280	300	1250	2900	200K	250	260	185	620	680	175E	245	260	190	570	730	150E	245	260	210	610	—	150E

① Phase-to-neutral or phase-to-phase.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 6. Transformers Rated 7.2 kV Single-Phase① or 12.47 kV Three-Phase

Transformer Rating, kVA — Single-Phase	Transformer Rating, kVA — Three-Phase	Transformer Full-Load Current, Amperes	S&C "K" Speed—TCC No. 165-2: Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating — Continuous Load	Hot-Load Pickup	Cold-Load Pickup	Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5) — 1 Phase and Δ–Δ, Y–Y	Δ–Y	Fuse Unit Rating, Amperes	S&C Standard Speed—TCC No. 153-2: Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating — Continuous Load	Hot-Load Pickup	Cold-Load Pickup	Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5) — 1 Phase and Δ–Δ, Y–Y	Δ–Y	Fuse Unit Rating, Amperes	S&C Slow Speed—TCC No. 119-2: Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating — Continuous Load	Hot-Load Pickup	Cold-Load Pickup	Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5) — 1 Phase and Δ–Δ, Y–Y	Δ–Y	Fuse Unit Rating, Amperes	S&C Very Slow Speed—TCC No. 176-2: Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating — Continuous Load	Hot-Load Pickup	Cold-Load Pickup	Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5) — 1 Phase and Δ–Δ, Y–Y	Δ–Y	Fuse Unit Rating, Amperes
5	15	0.69	580	575	325	1720	—	3K																		
10	30	1.39	290	290	165	570	630	3K																		
			655	660	275	1130	1800	6K	480	480	240	920	—	5E												
			880	885	375	1950	—	8K																		
15	45	2.08	190	190	110	370	395	3K																		
			440	430	185	700	780	6K	320	320	160	580	610	5E												
			585	590	250	1000	1370	8K	510	515	230	850	1320	7E												
			730	730	320	1370	—	10K	730	740	350	1420	—	10E												
25	75	3.47	260	190	110	410	415	6K	195	190	95	345	345	5E												
			350	340	150	540	580	8K	305	310	140	475	495	7E												
			440	445	190	690	780	10K	440	445	210	690	790	10E												
			525	530	255	1020	1450	12K	570	575	255	880	—	13E												
37½	112½	5.21	235	155	100	355	365	8K	205	180	90	325	325	7E												
			290	275	130	445	470	10K	290	295	140	440	470	10E												
			350	355	170	620	690	12K	380	385	170	560	600	13E												
			440	445	215	790	940	15K	440	445	205	690	800	15E	440	445	235	770	1500	15E						
50	150	6.94	220	145	95	325	335	10K	220	190	105	320	335	10E												
			260	255	130	445	470	12K	285	290	125	415	420	13E												
			330	335	160	555	600	15K	330	335	155	495	530	15E	330	335	175	530	620	15E						
			440	445	205	760	880	20K	440	445	200	650	740	20E	440	445	225	730	1150	20E						
75	225	10.4	220	190	110	350	365	15K	220	190	100	320	325	15E	220	200	120	330	355	15E						
			290	295	135	475	500	20K	290	295	130	425	440	20E	290	295	150	435	485	20E						
			365	370	170	600	690	25K	365	370	175	550	610	25E	365	370	185	560	660	25E						
			440	445	215	820	1000	30K	440	445	210	690	850	30E	440	445	225	740	1220	30E						
100	300	13.9	220	185	105	340	360	20K	220	185	100	320	320	20E	220	190	115	320	335	20E						
			275	270	130	435	465	25K	275	280	130	400	415	25E	275	265	140	405	430	25E						
			330	335	165	580	640	30K	330	335	160	490	540	30E	330	335	170	520	590	30E						
			410	420	215	770	920	40K	410	420	205	670	760	40E	410	420	245	800	—	40E						
167	500	23.1	195	155	100	320	340	30K	195	145	95	285	290	30E	195	160	100	290	305	30E						
			245	250	130	415	445	40K	245	250	120	385	395	40E	245	250	145	395	455	40E						
			320	335	160	560	620	50K	320	335	160	495	540	50E	320	335	185	520	650	50E	320	335	195	540	900	50E
			410	430	200	750	880	65K	410	430	210	680	790	65E	410	430	225	700	1330	65E	410	430	255	830	—	65E
250	750	34.7	215	195	110	350	375	50K	215	185	105	315	330	50E	165	135	100	255	260	40E	215	220	130	325	355	50E
			275	285	135	475	500	65K	275	290	140	425	455	65E	215	215	120	320	345	50E	275	290	170	445	550	65E
			305	315	170	605	670	80K	305	315	175	560	620	80E	275	290	150	425	470	65E	305	315	210	600	1350	80E
			385	390	225	800	990	100K	385	390	215	710	820	100E	305	315	190	560	740	80E	385	390	260	1000	—	100E
333	1000	46.3	205	170	100	340	355	65K	205	195	105	315	325	65E	160	120	90	240	245	50E	160	150	100	240	250	50E
			230	235	130	440	465	80K	230	235	130	405	430	80E	205	195	115	310	325	65E	205	215	130	315	345	65E
			285	295	165	560	620	100K	285	295	160	510	550	100E	230	235	145	395	435	80E	230	235	155	405	490	80E
			315	340	285	1140	1900	140K	295	310	210	690	780	125E	285	295	180	510	630	100E	285	295	195	560	1130	100E
500	1500	69.4							190	195	105	320	335	100E	155	135	95	260	260	80E	155	155	105	260	275	80E
			190	195	110	345	375	100K	195	205	140	445	465	125E	190	195	120	325	340	100E	190	195	130	335	375	100E
			210	225	190	630	760	140K	255	270	170	570	620	150E	195	205	165	475	540	125E	225	230	180	495	630	125E
			275	290	310	1320	—	200K	260	270	195	650	720	175E	255	270	195	590	780	150E	255	270	215	650	—	150E

① Phase-to-neutral or phase-to-phase.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 7. Transformers Rated 7.62 kV Single-Phase① or 13.2 kV Three-Phase

SMU-20 Fuse Unit Speed →			S&C "K" Speed—TCC No. 165-2						S&C Standard Speed—TCC No. 153-2						S&C Slow Speed—TCC No. 119-2						S&C Very Slow Speed—TCC No. 176-2					
Transformer Rating, kVA		Transformer Full-Load Current, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes
Single-Phase	Three-Phase		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△ ⏚Y–⏚Y	△–⏚Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△ ⏚Y–⏚Y	△–⏚Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△ ⏚Y–⏚Y	△–⏚Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△ ⏚Y–⏚Y	△–⏚Y	
5	15	0.66	605	610	345	2000	—	3K																		
10	30	1.31	305	305	175	630	700	3K																		
			695	700	290	1280	—	6K	510	510	755	1020	—	5E												
			930	935	400	2500	—	8K																		
15	45	1.97	205	205	115	395	420	3K																		
			460	460	195	750	860	6K	340	340	170	610	670	5E												
			620	625	265	1100	1750	8K	540	545	245	920	—	7E												
			770	780	340	1570	—	10K	770	780	370	1650	—	10E												
25	75	3.28	275	215	115	440	445	6K	205	205	105	360	360	5E												
			370	365	160	570	620	8K	325	325	145	495	520	7E												
			465	470	205	730	830	10K	465	470	220	740	890	10E												
			555	560	275	1080	—	12K	605	610	270	970	—	13E												
37½	112½	4.92	250	180	105	375	385	8K	215	200	95	340	340	7E												
			310	295	135	470	500	10K	310	315	150	465	495	10E												
			370	375	180	660	740	12K	400	405	180	590	640	13E												
			465	470	230	840	1020	15K	465	470	215	730	880	15E	465	470	250	840	—	15E						
50	150	6.56	230	175	100	345	355	10K	230	215	110	335	345	10E												
			275	275	135	470	500	12K	300	305	135	440	455	13E												
			350	355	170	590	640	15K	350	350	160	520	560	15E	350	355	185	570	670	15E						
			465	470	215	800	930	20K	465	470	210	690	810	20E	465	470	240	780	1450	20E						
75	225	9.84	185	100	90	305	320	12K	200	150	90	295	300	13E												
			230	215	115	375	390	15K	230	210	110	340	345	15E	230	220	125	355	380	15E						
			310	315	145	500	540	20K	310	315	140	455	465	20E	310	315	160	465	530	20E						
			385	390	180	650	730	25K	385	390	185	580	650	25E	385	390	195	600	750	25E						
100	300	13.1	230	210	110	365	385	20K	230	210	105	340	340	20E	175	115	95	260	270	15E						
			290	290	135	465	500	25K	290	295	135	425	445	25E	230	210	120	340	360	20E						
			350	355	170	620	700	30K	350	355	170	520	580	30E	290	290	150	430	465	25E						
			435	440	225	830	1020	40K	435	440	215	710	820	40E	350	355	180	560	650	30E						
167	500	21.9	210	180	105	335	355	30K	210	170	100	310	315	30E	210	180	110	305	320	30E						
			260	265	135	430	465	40K	260	265	130	410	425	40E	260	265	155	420	485	40E						
			340	350	170	590	660	50K	340	350	170	530	590	50E	340	355	195	560	770	50E	340	350	210	580	1300	50E
			435	455	215	790	930	65K	435	455	220	730	890	65E	435	455	240	760	2000	65E	435	455	270	940	—	65E
250	750	32.8	175	110	90	275	290	40K	225	210	110	340	355	50E	175	155	105	270	280	40E	225	235	140	350	390	50E
			225	220	115	360	390	50K	290	305	145	455	490	65E	225	235	130	340	375	50E	290	305	180	485	620	65E
			290	305	140	485	530	65K	325	330	180	610	680	80E	290	305	160	440	510	65E	325	330	220	660	—	80E
			325	330	180	630	710	80K	405	415	225	770	910	100E	325	330	205	590	860	80E	405	415	275	1220	—	100E
333	1000	43.7	215	200	105	360	380	65K	215	215	110	330	345	65E	170	140	95	250	260	50E	170	165	105	255	270	50E
			245	250	135	465	500	80K	245	250	135	430	455	80E	215	215	120	330	345	65E	215	230	135	340	380	65E
			305	310	175	600	680	100K	305	310	170	530	580	100E	245	250	150	420	475	80E	245	250	165	440	560	80E
			335	360	300	1200	2800	140K	315	325	220	740	850	125E	305	310	190	540	720	100E	305	310	210	620	—	100E
500	1500	65.6	160	120	90	295	310	80K	160	130	90	270	285	80E	160	155	100	270	280	80E	145	115	90	220	225	65E
			205	205	120	375	400	100K	205	205	115	340	355	100E	205	205	125	345	365	100E	160	165	110	270	290	80E
			225	240	200	670	800	140K	210	220	150	465	495	125E	210	220	175	510	600	125E	205	205	140	355	410	100E
			290	305	330	1470	-	200K	270	285	180	600	660	150E	270	285	210	640	920	150E	240	245	190	530	730	125E

① Phase-to-neutral only.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 8. Transformers Rated 7.97 kV Single-Phase① or 13.8 kV Three-Phase

SMU-20 Fuse Unit Speed →			S&C "K" Speed—TCC No. 165-2						S&C Standard Speed—TCC No. 153-2						S&C Slow Speed—TCC No. 119-2						S&C Very Slow Speed—TCC No. 176-2					
Transformer Rating, kVA ↓		Transformer Full-Load Current, Amperes ↓	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes
Single-Phase	Three-Phase		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△	△–Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△	△–Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△	△–Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△	△–Y	
5	15	0.63	635	635	360	2500	—	3K																		
10	30	1.26	315	320	180	670	760	3K																		
			720	735	305	1400	—	6K	530	535	270	1080	—	5E												
15	45	1.88	215	210	120	420	445	3K																		
			485	485	205	790	930	6K	355	355	180	640	710	5E												
			650	655	280	1120	1800	8K	565	570	255	970	—	7E												
			810	820	355	1600	—	10K	810	820	385	1900	—	10E												
25	75	3.14	290	235	120	460	470	6K	215	215	105	385	385	5E												
			390	385	165	610	670	8K	340	340	155	530	560	7E												
			485	490	210	790	910	10K	485	490	230	770	930	10E												
			580	585	285	1190	—	12K	630	635	280	1020	—	13E												
37½	112½	4.71	260	205	110	395	405	8K	225	220	100	355	355	7E												
			325	315	140	500	530	10K	325	325	155	485	530	10E												
			385	390	190	700	800	12K	420	425	185	620	690	13E												
			485	495	240	900	1150	15K	485	495	225	770	960	15E	485	495	260	910	-	15E						
50	150	6.28	240	195	105	355	370	10K	240	230	115	355	365	10E												
			290	290	140	495	520	12K	315	320	140	460	470	13E												
			365	370	180	610	680	15K	365	370	170	550	600	15E	365	370	195	600	740	15E						
			485	490	225	850	1010	20K	485	490	220	730	880	20E	485	490	250	850	—	20E						
75	225	9.41	195	125	95	315	330	12K	210	165	95	305	305	13E												
			240	230	120	395	415	15K	240	230	115	355	365	15E	240	235	130	375	405	15E						
			325	330	150	530	570	20K	325	330	145	475	490	20E	325	330	165	495	560	20E						
			405	410	190	680	780	25K	405	410	190	610	690	25E	405	410	205	630	840	25E						
100	300	12.6	180	100	90	285	295	15K	240	110	110	355	355	20E	180	130	100	270	285	15E						
			240	225	115	385	405	20K	300	225	145	445	470	25E	240	225	125	355	380	20E						
			300	310	140	495	530	25K	360	310	175	550	610	30E	300	305	155	450	500	25E						
			360	370	180	650	740	30K	450	370	225	750	890	40E	360	370	190	580	710	30E						
167	500	20.9	220	200	110	365	385	30K	220	185	105	315	325	30E	180	105	95	260	265	25E						
			275	275	145	470	510	40K	275	275	135	425	445	40E	220	200	115	320	340	30E						
			355	370	180	640	720	50K	355	370	175	560	630	50E	275	275	160	440	530	40E	355	370	215	620	—	50E
			455	480	225	860	1050	65K	455	480	230	790	960	65E	355	370	205	580	860	50E	455	480	280	1070	—	65E
250	750	31.4	180	135	95	295	315	40K	180	120	90	280	285	40E	180	170	110	280	300	40E						
			235	235	120	395	425	50K	235	225	115	355	370	50E	235	245	135	360	395	50E	235	245	145	365	415	50E
			305	320	150	530	570	65K	305	320	155	475	520	65E	305	320	165	465	550	65E	305	320	190	510	690	65E
			340	345	190	680	770	80K	340	345	190	630	710	80E	340	345	210	620	1000	80E	340	345	230	700	—	80E
333	1000	41.8	175	110	90	280	300	50K	175	95	90	265	270	50E	175	155	100	265	275	50E	175	180	110	265	280	50E
			225	215	110	385	405	65K	225	230	115	345	365	65E	225	230	125	345	365	65E	225	240	140	355	395	65E
			255	260	140	495	530	80K	255	260	145	450	485	80E	255	260	160	445	510	80E	255	260	175	465	610	80E
			320	325	185	630	720	100K	320	325	175	570	620	100E	320	325	200	580	800	100E	320	325	215	660	—	100E
500	1500	62.8	170	140	95	310	325	80K	170	150	95	280	300	80E	170	170	105	280	295	80E	150	130	95	230	235	65E
			210	215	125	385	415	100K	210	215	120	355	375	100E	210	215	130	355	380	100E	170	175	115	285	310	80E
			230	250	210	720	880	140K	220	230	155	490	520	125E	220	230	180	530	640	125E	210	215	145	380	440	100E
			305	320	345	1600	—	200K	280	295	190	630	700	150E	280	295	215	680	1050	150E	250	255	200	570	850	125E

① Phase-to-neutral only.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 9. Transformers Rated 8.32 kV Single-Phase① or 14.4 kV Three-Phase

SMU-20 Fuse Unit Speed →			S&C "K" Speed—TCC No. 165-2						S&C Standard Speed—TCC No. 153-2						S&C Slow Speed—TCC No. 119-2						S&C Very Slow Speed—TCC No. 176-2					
Transformer Rating, kVA ↓		Transformer Full-Load Current, Amperes ↓	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability,② Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes
Single-Phase	Three-Phase		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△	△–Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△	△–Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△	△–Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△	△–Y	
5	15	0.6	665	665	380	3750	—	3K																		
10	30	1.2	335	335	190	690	800	3K																		
			760	765	315	1450	—	6K	560	555	280	1180		5E												
15	45	1.8	220	220	125	435	465	3K																		
			505	510	210	830	990	6K	370	370	185	670	760	5E												
			680	680	290	1230	—	8K	590	595	265	1030	—	7E												
			845	855	370	1850	—	10K																		
25	75	3.01	300	255	125	475	485	6K	225	225	110	405	405	5E												
			405	405	175	630	710	8K	350	355	160	560	600	7E												
			505	510	220	810	960	10K	505	510	240	840	1050	10E												
			605	610	295	1230	—	12K	660	665	290	1120	—	13E												
37½	112½	4.51	270	225	115	405	420	8K	235	235	105	370	370	7E												
			335	335	150	510	550	10K	335	340	160	510	550	10E												
			405	410	200	720	830	12K	440	445	195	640	730	13E												
			505	515	250	930	1220	15K	505	515	235	810	1080	15E	505	515	270	970	-	15E						
50	150	6.01	255	215	110	380	395	10K	255	250	120	375	390	10E												
			305	305	150	520	560	12K	330	335	145	480	495	13E												
			380	385	185	650	730	15K	380	285	175	580	640	15E	380	385	205	640	820	15E						
			505	515	235	910	1100	20K	505	515	230	780	960	20E	505	515	260	920	-	20E						
75	225	9.02	200	145	100	330	345	12K	220	185	95	320	320	13E												
			255	245	125	415	435	15K	255	250	120	375	385	15E	255	250	135	395	430	15E						
			335	345	160	560	600	20K	335	345	155	495	520	20E	335	345	175	520	610	20E						
			420	430	195	720	830	25K	420	430	200	650	750	25E	420	430	215	670	970	25E						
100	300	12	190	120	95	300	310	15K	190	130	90	275	280	15E	190	145	100	285	300	15E						
			255	240	120	400	420	20K	255	245	115	370	375	20E	255	245	130	375	405	20E						
			315	320	145	510	550	25K	315	320	150	470	500	25E	315	320	160	475	530	25E						
			380	385	190	680	780	30K	380	385	185	580	660	30E	380	385	195	620	770	30E						
167	500	20	190	110	90	290	305	25K	190	135	90	275	275	25E	190	125	95	275	280	25E						
			230	215	115	380	405	30K	230	205	110	330	345	30E	230	215	120	340	360	30E						
			285	290	150	495	540	40K	285	290	140	445	465	40E	285	290	170	465	570	40E						
			370	385	185	670	770	50K	370	385	185	580	660	50E	370	385	210	630	980	50E	370	385	225	680	-	50E
250	750	30.1	190	155	100	310	330	40K	190	140	95	295	295	40E	190	185	115	295	310	40E						
			245	250	125	410	445	50K	245	250	120	370	390	50E	245	255	140	375	415	50E	245	255	150	390	455	50E
			315	335	155	560	610	65K	315	335	160	495	550	65E	315	335	175	500	590	65E	315	335	195	540	830	65E
			350	360	195	720	820	80K	350	360	200	660	760	80E	350	360	220	670	1200	80E	350	360	240	800	—	80E
333	1000	40.1	185	130	95	290	315	50K	185	120	90	275	280	50E	185	170	105	275	290	50E	185	190	115	280	295	50E
			235	230	115	400	420	65K	235	245	120	365	385	65E	235	245	130	360	380	65E	235	250	145	375	425	65E
			265	270	145	510	550	80K	265	270	150	475	520	80E	265	270	165	465	550	80E	265	270	180	495	680	80E
			330	340	195	660	770	100K	330	340	185	600	660	100E	330	340	205	610	920	100E	330	340	225	710	—	100E
500	1500	60.1	175	160	100	325	340	80K	175	170	100	300	315	80E	175	180	110	295	310	50E	160	145	100	240	250	65E
			220	225	130	405	445	100K	220	225	125	375	400	100E	220	225	140	380	410	100E	175	180	120	300	330	80E
			245	260	220	760	950	140K	230	240	160	520	550	125E	230	240	190	560	720	125E	220	225	150	400	475	100E
			315	335	360	1750	—	200K	295	310	200	670	760	150E	295	310	225	730	1300	150E	260	270	205	600	1030	125E

① Phase-to-neutral or phase-to-phase.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 10. Transformers rated 12.0 kV Single-Phase① or 20.8 kV Three Phase

SMU-20 Fuse Unit Speed →			S&C "K" Speed—TCC No. 165-2						S&C Standard Speed—TCC No. 153-2						S&C Slow Speed—TCC No. 119-2						S&C Very Slow Speed—TCC No. 176-2					
Transformer Rating, kVA		Transformer Full-Load Current, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes
Single-Phase	Three-Phase		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △-△ ⏚Y-⏚Y	△-⏚Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △-△ ⏚Y-⏚Y	△-⏚Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △-△ ⏚Y-⏚Y	△-⏚Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △-△ ⏚Y-⏚Y	△-⏚Y	
10	30	0.83	480	480	275	1110	—	3K																		
15	45	1.25	320	320	180	650	740	3K																		
			730	735	305	1370	—	6K	535	535	270	1050		5E												
			975	985	420	3000	—	8K																		
25	75	2.08	190	190	110	365	385	3K																		
			440	430	185	690	760	6K	320	320	160	560	600	5E												
			585	590	250	990	1300	8K	510	515	230	830	—	7E												
			730	740	320	1320	—	10K	730	740	350	1500	—	10E												
37½	112½	3.12	290	240	120	455	460	6K	215	215	110	375	375	5E												
			390	385	165	590	660	8K	340	345	155	520	550	7E												
			485	495	215	770	880	10K	485	495	235	790	990	10E												
			585	590	285	1150	—	12K	635	640	280	1050	—	13E												
50	150	4.16	295	260	125	430	455	8K	255	255	115	390	400	7E												
			365	370	160	550	590	10K	365	370	175	560	610	10E												
			440	440	215	780	910	12K	475	480	210	720	850	13E												
			550	555	270	1020	1650	15K	550	555	255	890	—	15E	550	555	295	1100		15E						
75	225	6.25	245	195	105	365	370	10K	245	235	115	355	365	10E												
			290	295	145	495	530	12K	315	320	140	465	475	13E												
			365	370	180	620	680	15K	365	370	170	540	590	15E	365	370	195	600	740	15E						
			485	495	230	850	1000	20K	485	495	220	750	870	20E	485	495	250	840		20E						
100	300	8.33	220	180	105	360	375	12K	240	220	105	345	345	13E												
			275	275	135	445	475	15K	275	280	125	400	415	15E	275	280	145	425	470	15E						
			365	370	170	600	660	20K	365	370	165	540	580	20E	365	370	190	570	680	20E						
			455	465	215	780	930	25K	455	465	215	720	850	25E	455	465	235	750	1150	25E						
167	500	13.9	220	185	105	340	355	20K	220	185	100	325	325	20E	220	190	115	320	335	20E						
			275	270	130	425	455	25K	275	280	130	410	425	25E	275	265	140	405	435	25E						
			330	335	165	560	630	30K	330	335	160	500	560	30E	330	335	170	510	580	30E						
			410	420	215	750	890	40K	410	420	205	670	770	40E	410	420	245	790		40E						
250	750	20.8	220	200	110	355	375	30K	220	190	105	320	330	30E	185	110	95	265	270	25E						
			275	280	145	450	495	40K	275	280	135	425	445	40E	220	200	115	320	340	30E						
			355	370	180	620	710	50K	355	370	175	560	620	50E	275	280	165	450	520	40E	355	370	220	630	—	50E
			455	480	225	830	1000	65K	455	480	230	780	970	65E	355	370	205	600	900	50E	455	480	285	1080	—	65E
333	1000	27 8	205	190	110	325	345	40K	205	175	100	320	325	40E	205	210	120	320	350	40E						
			265	275	135	445	485	50K	265	270	130	410	435	50E	265	275	155	415	480	50E	265	275	165	430	530	50E
			340	360	170	590	660	65K	340	360	175	550	610	65E	340	360	190	540	690	65E	340	360	215	610	1300	65E
			380	395	215	780	900	80K	380	395	215	750	870	80E	380	395	240	740		80E	380	395	260	920		80E
500	1500	41.6	180	110	90	275	295	50K	180	95	90	265	275	50E	180	155	100	270	280	50E	180	180	110	270	285	50E
			230	220	110	375	400	65K	230	235	115	355	365	65E	230	230	125	350	360	65E	230	240	140	355	405	65E
			255	260	140	485	520	80K	255	260	145	470	510	80E	255	260	160	440	500	80E	255	260	175	475	610	80E
			320	325	185	630	720	100K	320	325	180	580	650	100E	320	325	200	570	790	100E	320	325	220	660		100E

① Phase-to-neutral or phase-to-phase.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 11. Transformers Rated 13.2 kV Single-Phase① or 22.9 kV Three-Phase

SMU-20 Fuse Unit Speed →			S&C "K" Speed—TCC No. 165-2						S&C Standard Speed—TCC No. 153-2						S&C Slow Speed—TCC No. 119-2						S&C Very Slow Speed—TCC No. 176-2					
Transformer Rating, kVA ↓		Transformer Full-Load Current, Amperes ↓	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer Kva Rating			Transformer Protection Index, Percent of Transformer Kva Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes
Single-Phase	Three-Phase		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△ ✓–✓	△–✓		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△ ✓–✓	△–✓		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△ ✓–✓	△–✓		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △–△ ✓–✓	△–✓	
10	30	0.76	525	530	300	1330	—	3K																		
15	45	1.13	355	355	200	730	880	3K																		
			805	810	335	1600	—	6K	595	590	295	1230	—	5E												
25	75	1.89	210	210	120	410	435	3K																		
			480	480	200	770	900	6K	355	355	180	630	690	5E												
			645	650	275	1150	1850	8K	560	565	255	940	—	7E												
			805	815	355	1600	—	10K	805	815	385	2050	—	10E												
37½	112½	2.84	320	285	135	500	520	6K	235	235	120	415	415	5E												
			430	435	185	670	760	8K	375	375	170	580	620	7E												
			535	545	235	870	1080	10K	535	545	255	890	1380	10E												
			640	650	315	1330	—	12K	695	705	310	1220	—	13E												
50	150	3.78	240	145	100	375	375	6K	175	155	90	310	310	5E												
			325	300	140	485	520	8K	280	285	125	430	445	7E												
			400	405	175	620	680	10K	400	405	190	620	700	10E												
			480	485	235	890	1150	12K	525	530	230	810	1080	13E												
75	225	5.67	215	105	90	320	325	8K	270	270	130	390	410	10E												
			270	240	120	395	405	10K	350	355	155	510	530	13E												
			320	325	160	540	590	12K	400	410	185	600	670	15E	400	410	215	680	940	15E						
			400	410	200	680	770	15K	535	545	245	820	1150	20E	535	545	280	1010	—	20E						
100	300	7.56	200	95	90	290	300	10K	200	155	95	290	300	10E												
			240	225	120	395	415	12K	260	260	115	380	385	13E												
			300	305	150	495	530	15K	300	305	140	440	465	15E	300	305	160	475	540	15E						
			400	410	190	670	750	20K	400	410	180	600	650	20E	400	410	210	640	850	20E						
167	500	12.6	180	95	90	285	295	15K	240	225	110	350	355	20E	180	130	95	270	280	15E						
			240	225	115	375	395	20K	300	305	145	445	475	25E	240	225	125	355	380	20E						
			300	305	140	475	510	25K	360	365	175	550	630	30E	300	305	155	455	500	25E						
			360	365	180	630	730	30K	450	460	225	750	890	40E	360	365	190	580	700	30E						
250	750	18.9	200	140	95	300	315	25K	200	160	95	295	300	25E	200	145	105	290	300	25E						
			240	235	120	395	425	30K	240	230	115	355	375	30E	240	235	125	355	380	30E						
			300	305	160	510	570	40K	300	305	150	475	510	40E	300	305	180	510	610	40E						
			390	405	200	710	820	50K	390	405	195	630	720	50E	390	405	225	680	1330	50E	390	405	240	760	—	50E
333	1000	25.2	180	110	90	290	305	30K	180	105	90	265	270	30E	180	130	95	265	270	30E						
			225	230	120	370	395	40K	225	215	110	355	365	40E	225	230	135	360	390	40E						
			295	305	150	500	560	50K	295	305	145	455	490	50E	295	310	170	465	560	50E	295	305	180	485	670	50E
			375	395	185	670	760	65K	375	395	190	610	700	65E	375	395	205	610	900	65E	375	395	235	720	—	65E
500	1500	37.8	195	160	100	300	330	50K	195	150	95	295	305	50E	150	105	90	235	240	40E	195	205	120	295	320	50E
			250	255	125	415	445	65K	250	265	125	390	410	65E	195	190	110	290	310	50E	250	265	155	400	475	65E
			280	290	155	540	590	80K	280	290	160	520	570	80E	250	265	140	375	400	65E	280	290	190	540	810	80E
			350	360	205	700	830	100K	350	360	195	650	740	100E	280	290	175	485	580	80E	350	360	240	800	—	100E

① Phase-to-neutral or phase-to-phase.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 12. Transformers Rated 13.8 kV Single-Phase① or 23.9 kV Three-Phase

SMU-20 Fuse Unit Speed →			S&C "K" Speed—TCC No. 165-2						S&C Standard Speed—TCC No. 153-2						S&C Slow Speed—TCC No. 119-2						S&C Very Slow Speed—TCC No. 176-2					
Transformer Rating, kVA ↓		Transformer Full-Load Current, Amperes ↓	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes
Single-Phase	Three-Phase		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ-Δ Y-Y	Δ-Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ-Δ Y-Y	Δ-Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ-Δ Y-Y	Δ-Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ-Δ Y-Y	Δ-Y	
10	30	0.72	555	550	315	1450	—	3K																		
15	45	1.09	365	370	210	790	1000	3K																		
			835	845	350	1800	—	6K	615	615	310	1380	—	5E												
25	75	1.81	220	220	125	430	455	3K																		
			505	505	210	810	970	6K	370	370	185	660	740	5E												
			675	680	290	1200	—	8K	585	590	265	1020	—	7E												
			840	850	370	1800	—	10K																		
37½	112½	2.72	335	305	140	520	540	6K	245	245	125	435	435	5E												
			450	455	190	700	810	8K	390	395	175	610	660	7E												
			560	565	245	920	1200	10K	560	565	270	950	—	10E												
			670	675	330	1480	—	12K	730	735	325	1320	—	13E												
50	150	3.62	250	165	105	395	395	6K	185	170	95	330	330	5E												
			335	320	145	510	550	8K	295	295	130	455	465	7E												
			420	425	185	650	720	10K	420	425	200	660	760	10E												
			505	510	245	950	1330	12K	545	550	245	860	1350	13E												
75	225	5.44	225	130	95	325	335	8K	195	160	90	295	300	7E												
			280	260	125	415	430	10K	280	285	135	410	435	10E												
			335	340	165	570	620	12K	365	370	160	530	570	13E												
			420	425	205	710	820	15K	420	425	195	640	730	15E	420	425	225	720	1080	15E						
100	300	7.25	210	120	90	310	315	10K	210	170	100	305	310	10E												
			250	240	125	415	440	12K	275	275	120	395	405	13E												
			315	320	155	520	560	15K	315	320	145	465	495	15E	315	320	170	500	570	15E						
			420	425	195	710	790	20K	420	425	190	640	700	20E	420	425	215	680	940	20E						
167	500	12.1	190	120	95	295	305	15K	190	125	90	275	275	15E	190	145	100	280	295	15E						
			250	240	120	395	415	20K	250	240	115	370	375	20E	250	240	130	375	400	20E						
			315	320	145	495	540	25K	315	320	150	470	510	25E	315	320	160	475	530	25E						
			375	385	185	670	770	30K	375	385	185	590	670	30E	375	385	195	610	750	30E						
250	750	18.1	210	165	100	320	335	25K	210	175	100	310	315	25E	210	165	105	305	320	25E						
			250	250	125	420	450	30K	250	245	120	375	395	30E	250	250	130	375	405	30E						
			315	320	165	540	610	40K	315	320	155	500	540	40E	315	320	185	540	680	40E						
			410	425	205	750	880	50K	410	425	200	670	770	50E	410	425	235	750	—	50E	410	425	250	840	—	50E
333	1000	24.2	190	135	95	305	325	30K	190	125	90	275	280	30E	190	145	100	280	290	30E						
			235	240	125	390	420	40K	235	230	115	375	385	40E	235	240	140	380	420	40E						
			305	320	155	530	590	50K	305	320	150	485	520	50E	305	320	175	—500	620	50E	305	320	190	510	770	50E
			395	415	195	710	810	65K	395	415	200	650	760	65E	395	415	215	660	1120	65E	395	415	245	770	—	65E
500	1500	36.2	205	130	105	325	355	50K	205	170	100	310	320	50E	155	120	95	250	255	40E	205	210	125	310	340	50E
			260	270	130	440	475	65K	260	275	135	410	435	65E	205	200	115	310	330	50E	260	275	165	425	510	65E
			295	300	165	580	630	80K	295	300	165	550	600	80E	260	275	145	400	440	65E	295	300	200	580	1000	80E
			365	375	215	750	910	100K	365	375	205	690	790	100E	295	300	185	520	660	80E	365	375	250	900	—	100E

① Phase-to-neutral or phase-to-phase.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 13. Transformers Rated 14.4 kV Single-Phase① or 24.9 kV Three-Phase

SMU-20 Fuse Unit Speed →			S&C "K" Speed—TCC No. 165-2						S&C Standard Speed—TCC No. 153-2						S&C Slow Speed—TCC No. 119-2						S&C Very Slow Speed—TCC No. 176-2					
Transformer Rating, kVA ↓		Transformer Full-Load Current, Amperes ↓	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes
Single-Phase	Three-Phase		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ–Δ Y–Y	Δ–Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ–Δ Y–Y	Δ–Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ–Δ Y–Y	Δ–Y		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ–Δ Y–Y	Δ–Y	
10	30	0.7	570	575	325	1750	—	3K																		
15	45	1.04	385	385	220	810	1080	3K																		
			875	880	365	1900	—	6K	645	640	320	1570	—	5E												
25	75	1.74	230	230	130	450	480	3K																		
			525	530	220	860	1030	6K	385	385	195	680	780	5E												
			700	705	300	1300	—	8K	610	615	275	1050	—	7E												
			875	885	385	2000	—	10K																		
37½	112½	2.61	350	325	145	550	580	6K	255	255	130	455	460	5E												
			465	470	200	750	870	8K	405	410	185	640	710	7E												
			580	590	255	980	1400	10K	580	590	280	1020	—	10E												
			695	705	345	1600	—	12K	760	765	335	1470	—	13E												
50	150	3.48	260	185	110	410	415	6K	195	190	95	335	335	SE												
			350	335	150	530	580	8K	305	310	140	465	485	7E												
			435	445	190	680	760	10K	435	445	210	680	800	10E												
			525	530	255	1000	1450	12K	570	575	255	900	—	13E												
75	225	5.22	235	155	100	345	365	8K	205	180	90	310	315	7E												
			290	280	130	440	460	10K	290	295	140	435	460	10E												
			350	355	170	610	660	12K	380	385	170	560	600	13E												
			435	445	215	770	900	15K	435	445	205	670	780	15E	435	445	235	770	1400	15E						
100	300	6.96	220	145	95	325	335	10K	220	190	105	320	325	10E												
			260	260	130	445	470	12K	285	290	125	415	425	13E												
			330	335	160	550	600	15K	330	335	150	485	520	15E	330	335	175	530	620	15E						
			435	445	205	750	850	20K	435	445	200	670	750	20E	435	445	225	720	1120	20E						
167	500	11.6	195	140	95	310	325	15K	195	145	90	290	290	15E	195	160	105	295	310	15E						
			260	265	125	415	445	20K	260	260	120	390	400	20E	260	255	135	390	420	20E						
			330	335	155	520	580	25K	330	335	155	495	540	25E	330	335	165	500	560	25E						
			395	400	195	710	840	30K	395	400	190	630	730	30E	395	400	205	640	850	30E						
250	750	17.4	220	180	100	330	345	25K	220	195	105	320	325	25E	175	105	90	260	260	20E						
			260	265	130	435	470	30K	260	265	125	385	415	30E	220	180	110	320	335	25E						
			330	335	170	560	630	40K	330	335	160	520	560	40E	260	265	135	395	430	30E						
			425	445	215	780	930	50K	425	445	210	700	820	50E	330	335	195	570	750	40E	425	445	260	920		50E
333	1000	23.1	195	155	95	320	335	30K	195	145	95	290	295	30E	195	160	100	290	300	30E						
			245	250	130	405	435	40K	245	250	120	390	400	40E	245	250	145	400	450	40E						
			320	330	160	550	620	50K	320	330	160	510	550	50E	320	330	185	520	680	50E	320	330	195	540	930	50E
			410	430	200	750	870	65K	410	430	210	690	810	65E	410	430	225	690	1300	65E	410	430	255	840	—	65E
500	1500	34.8	215	195	110	335	365	50K	215	185	105	320	335	50E	165	135	100	260	265	40E	215	220	130	330	360	50E
			275	290	135	455	495	65K	275	290	140	425	455	65E	215	215	120	320	350	50E	275	290	170	450	560	65E
			305	315	170	590	650	80K	305	315	170	580	640	80E	275	290	150	415	465	65E	305	315	210	600	—	80E
			380	390	220	780	950	100K	380	390	215	720	850	100E	305	315	190	550	730	80E	380	390	260	1020	—	100E

① Phase-to-neutral or phase-to-phase.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 14. Transformers Rated 15.24 kV Single-Phase① or 26.4 kV Three-Phase

SMU-20 Fuse Unit Speed →			S&C "K" Speed—TCC No. 165-2						S&C Standard Speed—TCC No. 153-2						S&C Slow Speed—TCC No. 119-2						S&C Very Slow Speed—TCC No. 176-2					
Transformer Rating, kVA ↓		Transformer Full-Load Current, Amperes ↓	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes
Single-Phase	Three-Phase		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △-△ / Y-Y (grounded)	△-Y (grounded)		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △-△ / Y-Y (grounded)	△-Y (grounded)		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △-△ / Y-Y (grounded)	△-Y (grounded)		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △-△ / Y-Y (grounded)	△-Y (grounded)	
10	30	0.66	605	610	345	2000	—	3K																		
15	45	0.98	410	405	230	900	1400	3K																		
			930	935	390	2300	—	6K	685	680	340	2100	—	5E												
25	75	1.64	245	245	140	485	520	3K																		
			555	560	235	930	1180	6K	410	410	205	730	880	5E												
			745	750	320	1450	—	8K	645	650	290	1160	—	7E												
			925	940	405	2700	—	10K																		
37½	112½	2.46	165	155	90	305	325	3K	270	270	135	480	490	5E												
			370	350	155	580	620	6K	430	435	195	680	780	7E												
			495	500	210	810	970	8K	620	625	295	1100	—	10E												
			620	625	270	1070	1750	10K	805	815	355	2000	—	13E												
50	150	3.28	275	215	115	435	445	6K	205	205	105	360	360	5E												
			370	365	160	570	620	8K	325	325	145	495	520	7E												
			465	470	205	730	830	10K	465	470	220	740	890	10E												
			555	560	275	1080	1750	12K	605	610	270	970	—	13E												
75	225	4.92	250	180	105	370	380	8K	215	200	95	330	335	7E												
			310	295	135	470	490	10K	310	315	150	460	495	10E												
			370	375	180	650	720	12K	400	405	180	600	650	13E												
			465	470	230	820	1000	15K	465	470	215	730	880	15E	465	470	250	850	—	15E						
100	300	6.56	230	175	100	345	355	10K	230	215	110	335	345	10E												
			275	275	135	470	500	12K	300	305	135	440	455	13E												
			350	355	170	590	640	15K	350	350	160	520	560	15E	350	355	185	570	670	15E						
			465	470	215	800	930	20K	465	470	210	690	810	20E	465	470	240	780	1450	20E						
167	500	11.0	205	170	105	330	345	15K	205	170	95	305	305	15E	205	180	110	310	330	15E						
			275	275	130	445	475	20K	275	285	125	405	420	20E	275	280	145	415	450	20E						
			345	355	160	560	630	25K	345	355	165	530	570	25E	345	355	175	540	610	25E						
			415	425	205	770	910	30K	415	425	200	670	790	30E	415	425	215	690	1010	30E						
250	750	16.4	230	210	110	350	370	25K	230	215	110	340	350	25E	185	130	95	270	275	20E						
			280	280	140	460	500	30K	280	280	135	415	445	30E	230	200	120	340	355	25E						
			350	355	180	600	690	40K	350	355	170	560	610	40E	280	280	145	420	460	30E						
			450	470	230	840	1030	50K	450	470	225	750	910	50E	350	355	205	610	850	40E	450	470	275	1080	—	50E
333	1000	21.8	210	180	105	335	355	30K	210	170	100	310	315	30E	210	180	110	305	320	30E						
			260	265	135	430	465	40K	260	265	130	410	425	40E	260	265	155	420	485	40E						
			340	350	170	590	660	50K	340	350	170	530	590	50E	340	350	195	560	770	50E	340	350	210	580	—	50E
			435	455	215	790	930	65K	435	455	220	730	890	65E	435	455	240	760	2000	65E	435	455	270	940	—	65E
500	1500	32.8	175	110	90	275	290	40K	225	210	110	340	355	50E	175	155	105	270	280	40E	225	235	140	350	390	50E
			225	220	115	360	390	50K	290	305	145	455	490	65E	225	235	130	340	375	50E	290	305	180	485	620	65E
			290	305	140	485	530	65K	325	330	180	610	680	80E	290	305	160	440	510	65E	325	330	220	660	—	80E
			325	330	180	630	710	80K	405	415	225	770	910	100E	325	330	205	590	860	80E	405	415	275	1220	—	100E

① Phase-to-neutral only.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 15. Transformers Rated 15.93 kV Single-Phase① or 27.6 kV Three-Phase

SMU-20 Fuse Unit Speed →			S&C "K" Speed—TCC No. 165-2						S&C Standard Speed—TCC No. 153-2						S&C Slow Speed—TCC No. 119-2						S&C Very Slow Speed—TCC No. 176-2					
Transformer Rating, kVA ↓		Transformer Full-Load Current, Amperes ↓	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer Kva Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes
Single-Phase	Three-Phase		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △-△ ⅄-⅄	△-⅄		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △-△ ⅄-⅄	△-⅄		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △-△ ⅄-⅄	△-⅄		Continuous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and △-△ ⅄-⅄	△-⅄	
10	30	0.63	635	635	360	2500	—	3K																		
15	45	0.94	425	425	240	940	1700	3K																		
			970	975	405	2700	—	6K																		
25	75	1.57	255	255	145	510	540	3K																		
			580	585	245	980	1280	6K	425	425	215	780	1050	5E												
			775	785	335	1550	—	8K	675	680	305	1300	—	7E												
37½	112½	2.35	170	170	95	325	340	3K																		
			385	370	160	610	650	6K	285	285	145	510	520	5E												
			520	525	220	860	1030	8K	450	455	205	720	850	7E												
			645	655	285	1120	—	10K	645	655	310	1200	—	10E												
50	150	3.14	290	235	120	460	470	6K	215	215	105	385	385	5E												
			390	385	165	610	670	8K	340	340	155	530	560	7E												
			485	490	210	790	910	10K	485	490	230	770	930	10E												
			580	585	285	1190	—	12K	630	635	280	1020	—	13E												
75	225	4.71	260	205	110	390	405	8K	225	220	100	345	350	7E												
			325	315	140	495	520	10K	325	325	155	485	530	10E												
			385	390	190	690	770	12K	420	425	185	630	690	13E												
			485	495	240	880	1130	15K	485	495	225	770	970	15E	485	495	260	890	—	15E						
100	300	6.28	240	195	105	355	370	10K	240	230	115	355	365	10E												
			290	290	140	495	520	12K	315	320	140	460	475	13E												
			365	370	180	610	680	15K	365	370	170	550	600	15E	365	370	195	600	740	15E						
			485	490	225	850	1010	20K	485	490	220	730	880	20E	485	490	250	850	—	20E						
167	500	10.5	215	190	105	345	360	15K	215	185	100	315	320	15E	215	195	115	325	350	15E						
			290	295	135	465	495	20K	290	295	130	425	450	20E	290	295	150	435	480	20E						
			360	370	170	590	660	25K	360	370	170	550	600	25E	360	370	185	560	660	25E						
			435	445	215	810	970	30K	435	445	210	700	850	30E	435	445	225	730	1200	30E						
250	750	15.7	195	125	90	300	315	20K	195	130	90	285	285	20E	195	145	100	280	290	20E						
			240	225	115	375	390	25K	240	235	115	355	365	25E	240	215	125	360	375	25E						
			290	295	145	495	540	30K	290	295	140	435	470	30E	290	295	150	440	490	30E						
			365	370	190	640	740	40K	365	370	180	590	650	40E	365	370	215	650	1050	40E	470	490	290	1300	—	50E
333	1000	20.9	220	200	110	365	385	30K	220	185	105	315	325	30E	180	105	95	260	265	25E						
			275	275	145	470	510	40K	275	275	135	425	445	40E	220	200	115	320	340	30E						
			355	370	180	640	720	50K	355	370	175	560	630	50E	275	275	160	440	530	40E	355	370	215	620	—	50E
			455	480	225	860	1050	65K	455	480	230	790	960	65E	355	370	205	580	860	50E	455	480	280	1070	—	65E
500	1500	31.4	180	135	95	295	315	40K	180	120	90	280	285	40E	180	170	110	280	300	40E						
			235	235	120	395	425	50K	235	225	115	355	370	50E	235	245	135	360	395	50E	235	245	145	365	415	50E
			305	320	150	530	570	65K	305	320	155	475	520	65E	305	320	165	465	550	65E	305	320	190	510	690	65E
			340	345	190	680	770	80K	340	345	190	630	710	80E	340	345	210	620	1000	80E	340	345	230	700	—	80E

① Phase-to-neutral or phase-to-phase.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 16. Transformers Rated 19.92 kV Single-Phase① or 34 5 kV Three-Phase

SMU-20 Fuse Unit Speed →			S&C "K" Speed—TCC No. 165-2						S&C Standard Speed—TCC No. 153-2						S&C Slow Speed—TCC No. 119-2						S&C Very Slow Speed—TCC No. 176-2					
Transformer Rating, kVA ↓		Trans-former Full-Load Current, Amperes ↓	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)		Fuse Unit Rating, Amperes
Single-Phase	Three-Phase		Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ-Δ Yg-Yg	Δ-Yg		Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ-Δ Yg-Yg	Δ-Yg		Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ-Δ Yg-Yg	Δ-Yg		Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup	1 Phase and Δ-Δ Yg-Yg	Δ-Yg	
15	45	0.75	535	530	300	1400	—	3K																		
25	75	1.26	315	320	180	650	740	3K																		
			720	735	305	1370	—	6K	530	535	270	1050		5E												
			970	980	415	3000	—	8K																		
37½	112½	1.88	215	210	120	410	435	3K																		
			485	485	205	770	900	6K	355	355	180	630	690	5E												
			650	655	280	1150	1850	8K	565	570	255	940	—	7E												
			810	820	355	1600	—	10K	810	820	385	2050	—	10E												
50	150	2.51	160	145	90	300	315	3K	265	265	135	475	480	5E												
			365	340	150	570	600	6K	420	425	190	670	750	7E												
			485	490	210	790	940	8K	605	615	290	1070	—	10E												
			605	615	265	1030	1650	10K	790	795	350	1500	—	13E												
75	225	3.77	240	145	100	375	375	6K	180	155	90	315	315	5E												
			325	305	140	485	520	8K	280	285	125	435	445	7E												
			405	410	175	620	680	10K	405	410	195	630	720	10E												
			485	490	235	890	1150	12K	525	530	235	820	1150	13E												
100	300	5.02	245	170	105	360	375	8K	210	195	95	325	325	7E												
			305	290	135	460	480	10K	305	305	145	455	485	10E												
			365	365	180	640	700	12K	395	400	175	590	630	13E												
			455	460	225	810	980	15K	455	460	210	710	840	15E	455	460	245	820	2300	15E						
167	500	8.38	215	180	105	360	375	12K	235	215	105	345	345	13E												
			270	270	135	445	475	15K	270	275	125	400	415	15E	270	275	145	420	465	15E						
			365	370	170	600	660	20K	365	370	165	540	580	20E	365	370	190	560	670	20E						
			455	460	210	780	930	25K	455	460	215	720	850	25E	455	460	230	740	1130	25E						
250	750	12.6	180	100	90	285	295	15K	240	225	110	355	365	20E	180	130	100	270	285	15E						
			240	225	115	375	395	20K	300	310	145	455	480	25E	240	225	125	360	380	20E						
			300	310	140	475	515	25K	360	370	175	570	650	30E	300	305	155	460	510	25E						
			360	370	180	640	730	30K	450	460	225	770	920	40E	360	370	190	580	710	30E						
333	1000	16.7	230	200	105	345	365	25K	230	210	110	335	345	25E	180	120	95	265	270	20E						
			275	275	135	460	500	30K	275	275	130	410	440	30E	230	195	115	335	350	25E						
			340	345	180	590	680	40K	340	345	170	550	600	40E	275	275	140	415	450	30E						
			445	460	225	840	1000	50K	445	460	220	740	880	50E	340	345	205	600	840	40E	445	460	270	1050	—	50E
500	1500	25.1	180	115	90	290	305	30K	180	110	90	265	270	30E	180	130	95	265	270	30E						
			225	230	120	370	395	40K	225	215	110	355	365	40E	225	230	135	360	390	40E						
			295	305	150	500	560	50K	295	305	145	455	490	50E	295	305	170	465	560	50E	295	305	180	485	670	50E
			380	400	185	670	760	65K	380	400	190	610	700	65E	380	400	210	610	900	65E	380	400	235	720	—	65E

① Phase-to-neutral only.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 17. Transformers Rated 22.9 kV Single-Phase①

SMU-20® Fuse Unit Speed →		S&C "K" Speed—TCC No. 165-2					S&C Standard Speed—TCC No. 153-2					S&C Slow Speed—TCC No. 119-2					S&C Very Slow Speed—TCC No. 176-2				
Transformer Rating, kVA, Single-Phase ↓	Transformer Full-Load Current, Amperes ↓	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)	Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)	Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)	Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)	Fuse Unit Rating, Amperes
		Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup			Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup			Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup			Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup		
15	0.66	605	610	345	2000	3K															
25	1.09	365	365	210	760	3K															
		835	845	350	1600	6K	615	615	310	1220	5E										
37½	1.64	245	245	140	475	3K	410	410	205	710	5E										
		555	560	235	890	6K	645	655	290	1070	7E										
		745	750	320	1320	8K	925	940	445	2350	10E										
		925	940	405	1900	10K															
50	2.18	185	185	105	345	3K	305	305	155	540	5E										
		415	405	175	650	6K	485	490	220	770	7E										
		560	565	240	910	8K	695	705	335	1230	10E										
		695	705	305	1200	10K	910	915	400	1850	13E										
75	3.28	275	215	115	435	6K	205	205	105	360	5E										
		370	365	160	560	8K	325	325	145	495	7E										
		465	470	205	710	10K	465	470	220	710	10E										
		555	560	275	1020	12K	605	610	270	930	13E										
100	4.37	280	240	115	410	8K	245	245	110	375	7E										
		350	345	160	520	10K	350	355	165	520	10E										
		415	420	205	720	12K	455	460	200	670	13E										
		520	530	255	950	15K	520	530	245	810	15E	520	530	280	940	15E					
167	7.29	210	120	90	305	10K	210	170	100	305	10E										
		250	235	125	415	12K	270	275	120	395	13E										
		315	320	155	510	15K	315	320	145	460	15E	315	320	170	485	15E					
		415	425	195	690	20K	415	425	190	630	20E	415	425	215	650	20E					
250	10.9	210	170	105	325	15K	210	170	95	300	15E	210	180	110	310	15E					
		280	275	130	435	20K	280	285	125	405	20E	280	280	145	410	20E					
		350	355	160	550	25K	350	355	165	520	25E	350	355	180	520	25E					
		420	425	205	725	30K	420	425	205	650	30E	420	425	215	660	30E					
333	14.5	210	165	100	320	20K	210	165	95	310	20E	210	170	110	310	20E					
		260	250	120	400	25K	260	265	125	385	25E	260	245	135	385	25E					
		315	320	155	530	30K	315	320	150	465	30E	315	320	160	475	30E					
		395	400	205	680	40K	395	400	195	630	40E	395	400	235	680	40E					
500	21.8	210	180	105	330	30K	210	170	100	305	30E	210	180	110	305	30E					
		260	265	135	420	40K	260	265	130	405	40E	260	265	155	410	40E					
		340	350	170	570	50K	340	350	170	520	50E	340	355	195	540	60E	340	350	210	550	50E
		435	455	215	790	65K	435	455	220	710	65E	435	455	240	760	65E	435	455	270	940	65E

① Phase-to-phase only.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 18. Transformers Rated 23.9 kV Single-Phase①

SMU-20® Fuse Unit Speed →		S&C "K" Speed—TCC No. 165-2					S&C Standard Speed—TCC No. 153-2					S&C Slow Speed—TCC No. 119-2					S&C Very Slow Speed—TCC No. 176-2				
Transformer Rating, kVA, Single-Phase ↓	Transformer Full-Load Current, Amperes ↓	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)	Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)	Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)	Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)	Fuse Unit Rating, Amperes
		Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup			Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup			Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup			Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup		
15	0.63	635	635	360	1700	3K															
25	1.05	380	380	215	790	3K															
		865	880	365	1650	6K	640	640	320	1300	5E										
37½	1.57	255	255	145	495	3K															
		580	585	245	940	6K	425	425	215	760	5E										
		775	785	335	1400	8K	675	680	305	1150	7E										
		970	980	425	2100	10K															
50	2.09	190	190	110	360	3K	320	320	160	560	5E										
		435	430	185	680	6K	505	510	230	810	7E										
		585	590	250	940	8K	725	735	350	1320	10E										
		725	735	320	1220	10K	945	955	420	2100	13E										
75	3.14	290	235	120	455	6K	215	215	105	375	5E										
		390	385	165	580	8K	340	340	155	520	7E										
		435	490	210	750	10K	485	490	230	760	10E										
		580	585	285	1080	12K	630	635	280	990	13E										
100	4.18	290	260	125	425	8K	255	255	115	385	7E										
		365	370	160	540	10K	365	370	175	540	10E										
		435	440	215	760	12K	475	480	210	690	13E										
		545	555	265	960	15K	545	555	255	840	15E	545	555	295	990	15E					
167	6.99	215	145	95	320	10K	215	190	105	315	10E										
		260	250	130	430	12K	285	285	125	415	13E										
		325	335	160	530	15K	325	335	150	475	15E	325	335	175	510	15E					
		435	445	205	730	20K	435	445	200	650	20E	435	445	225	680	20E					
250	250	215	190	105	340	15K	215	185	100	315	15E	215	195	115	320	15E					
		290	295	135	455	20K	290	295	130	425	20E	290	295	150	425	20E					
		360	370	170	570	25K	360	370	170	540	25E	360	370	185	550	25E					
		435	445	215	770	30K	435	445	210	670	30E	435	445	225	700	30E					
333	13.9	220	185	100	355	20K	220	185	100	325	20E	220	190	115	320	20E					
		275	270	125	415	25K	275	275	130	405	25E	275	265	140	400	25E					
		330	330	160	550	30K	330	330	160	490	30E	330	330	170	495	30E					
		410	415	215	720	40K	410	415	200	660	40E	410	415	245	730	40E					
500	20.9	220	200	110	345	30K	220	185	105	315	30E	180	105	95	265	25E					
		275	275	145	440	40K	275	275	135	420	40E	220	200	115	320	30E					
		355	370	180	600	50K	355	370	175	540	50E	275	275	160	435	40E					
		455	480	225	810	65K	455	480	230	740	65E	355	370	205	560	50E	355	370	215	580	50E

① Phase-to-phase only.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 19. Transformers Rated 24.9 kV Single-Phase①

SMU-20® Fuse Unit Speed →		S&C "K" Speed—TCC No. 165-2					S&C Standard Speed—TCC No. 153-2					S&C Slow Speed—TCC No. 119-2					S&C Very Slow Speed—TCC No. 176-2				
Transformer Rating, kVA, Single-Phase ↓	Transformer Full-Load Current, Amperes ↓	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)	Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)	Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)	Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)	Fuse Unit Rating, Amperes
		Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup			Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup			Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup			Contin-uous Load	Hot-Load Pickup	Cold-Load Pickup		
15	0.60	665	665	375	1980	3K															
25	1.00	400	400	225	830	3K															
		910	915	380	1800	6K	670	665	335	1390	5E										
37½	1.51	265	265	150	520	3K															
		605	610	255	980	6K	445	445	225	790	5E										
		810	815	345	1500	8K	700	710	320	1220	7E										
		1005	1025	445	2400	10K															
50	2.01	200	200	115	375	3K															
		455	450	190	710	6K	335	335	165	590	5E										
		605	615	260	1000	8K	525	535	240	850	7E										
		755	765	330	1320	10K	755	765	360	1400	10E										
75	3.01	300	255	125	465	6K	225	220	110	395	5E										
		405	405	175	600	8K	350	355	160	550	7E										
		505	510	220	780	10K	505	510	240	790	10E										
		605	610	295	1130	12K	660	665	290	1040	13E										
100	4.02	225	110	95	355	6K	265	265	120	405	7E										
		305	275	130	450	8K	380	385	180	570	10E										
		380	385	165	570	10K	495	500	220	740	13E										
		455	460	225	800	12K	565	580	265	910	15E	565	580	305	1070	15E					
167	6.71	225	165	100	330	10K	225	205	110	330	10E										
		270	265	135	450	12K	295	300	130	435	13E										
		340	345	165	560	15K	340	345	160	500	15E	340	345	185	530	15E					
		455	460	215	770	20K	455	460	205	690	20E	455	460	235	720	20E					
250	10.0	230	205	110	355	15K	230	205	105	330	15E	230	210	120	340	15E					
		305	310	140	475	20K	305	310	135	450	20E	305	310	155	450	20E					
		380	385	175	600	25K	380	385	180	570	25E	380	385	195	580	25E					
		455	460	225	840	30K	455	460	220	700	30E	455	460	235	740	30E					
333	13.4	225	200	105	345	20K	225	200	105	335	20E	170	105	90	250	15E					
		285	285	130	430	25K	285	290	135	415	25E	225	205	120	330	20E					
		340	345	170	570	30K	340	345	165	510	30E	285	280	145	415	25E					
		425	435	225	775	40K	425	435	210	680	40E	340	345	175	520	30E					
500	20.1	225	215	110	365	30K	190	130	90	280	25E	190	125	95	280	25E					
		285	290	150	465	40K	225	205	110	335	30E	225	215	120	335	30E					
		370	385	185	640	50K	285	290	140	450	40E	285	290	170	460	40E					
		475	500	230	960	65K	370	385	185	580	50E	370	385	210	600	50E	370	385	225	620	50E

① Phase-to-phase only.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 20. Transformers Rated 34.5 kV Single-Phase①

SMU-20® Fuse Unit Speed →		S&C "K" Speed—TCC No. 165-2					S&C Standard Speed—TCC No. 153-2					S&C Slow Speed—TCC No. 119-2					S&C Very Slow Speed—TCC No. 176-2				
Transformer Rating, kVA, Single-Phase ↓	Transformer Full-Load Current, Amperes ↓	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)	Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)	Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)	Fuse Unit Rating, Amperes	Fuse Unit Peak-Load Capability②, Percent of Transformer kVA Rating			Transformer Protection Index, Percent of Transformer kVA Rating (see text, page 5)	Fuse Unit Rating, Amperes
		Continuous Load	Hot-Load Pickup	Cold-Load Pickup			Continuous Load	Hot-Load Pickup	Cold-Load Pickup			Continuous Load	Hot-Load Pickup	Cold-Load Pickup			Continuous Load	Hot-Load Pickup	Cold-Load Pickup		
25	0.72	555	550	315	1160	3K															
371/2	1.09	365	370	210	690	3K															
		835	845	350	1520	6K	610	615	310	1240	5E										
50	1.45	275	275	155	500	3K															
		630	635	265	1020	6K	460	460	230	840	5E										
		840	850	360	1500	8K	730	740	330	1330	7E										
		1050	1065	460	2900	10K															
75	2.17	185	185	105	340	3K	305	310	155	560	5E										
		420	420	175	670	6K	490	490	220	790	7E										
		560	565	240	870	8K	700	710	335	1290	10E										
		700	710	305	1150	10K	910	920	405	2500	13E										
100	2.90	315	275	130	500	6K	230	230	115	415	5E										
		420	425	180	630	8K	365	370	165	570	7E										
		525	530	230	800	10K	525	530	250	850	10E										
		630	635	305	1110	12K	685	690	305	1120	13E										
167	4.84	250	190	110	380	8K	220	210	100	335	7E	470	480	255	820	15E					
		315	315	140	475	10K	315	320	150	475	10E	630	640	325	1220	20E					
		375	380	185	620	12K	410	415	180	610	13E	785	800	400	2200	25E					
		470	480	230	780	15K	470	480	220	740	15E										
250	7.25	210	120	90	305	10K	210	170	100	310	10E	315	320	170	485	15E					
		250	245	125	405	12K	275	275	120	410	13E	420	425	215	660	20E					
		315	320	155	500	15K	315	320	145	475	15E	525	535	270	870	25E					
		420	425	195	670	20K	420	425	190	640	20E	630	640	325	1250	30E					
333	9.65	190	110	95	305	12K	205	155	90	305	13E	235	225	125	345	15E					
		235	225	115	375	15K	235	220	110	355	15E	315	320	165	460	20E					
		315	320	150	500	20K	315	320	145	475	20E	395	400	200	590	25E					
		395	400	185	630	25K	395	400	185	610	25E	475	480	225	760	30E					
500	14.5	210	165	100	325	20K	210	165	95	310	20E	210	175	110	300	20E	510	530	315	1150	50E
		260	265	120	415	25K	260	265	125	385	25E	260	250	135	380	25E					
		315	320	155	530	30K	315	320	155	470	30E	315	320	165	470	30E					
		395	400	205	650	40K	395	400	195	630	40E	395	400	235	680	40E					

① Phase-to-phase only.

② These values reflect the inherent peak-load capabilities of the fuse units themselves, not the peak-load capabilities of the transformers that, in many cases, are much lower. For derivation of these values, see text, page 4.

Table 21. S&C Type SMD-20 Power Fuses (with SMU-20 Fuse Units), Overhead, Pole-Top Style—Summary of Available Ratings

kV			Amperes, Rms					Leakage Distance to Ground, Minimum, Inches (mm)
Nominal	Max Design-nation	BIL	Max	60 Hz Interrupting				
				Asymmet-rical	Symmetrical			
					Based on X/R = 20	Based on X/R = 10	Based on X/R = 5	
14.4	17.0	125	200E or 200K	22 400	14 000	15 400	17 900	11 (279)
		150	200E or 200K	22 400	14 000	15 400	17 900	17 (432)
25	27	150	200E or 200K	20 000	12 500	13 800	16 000	17 (432)
34.5	38	200	200E or 200K	16 000	10 000	11 000	12 800	25½ (648)

How to Use the Fuse-Selection Tables

STEP 1. Locate the appropriate selection table based on the applicable transformer kV rating. Refer to Table 22.

STEP 2. Enter the table in the column corresponding to the fuse unit speed characteristic under consideration. Read down the table in this column, stopping in the section corresponding to the transformer kVA rating.

Find the first line in this section for which the peak-load capability values listed in all three columns—"Continuous Load," "Hot-Load Pickup," and "Cold-Load Pickup"—equal or exceed the peak loading values specified in the schedule of transformer loading established for the system. **Note:** A smaller fuse unit ampere rating can often be selected, thereby providing protection against a broader range of secondary-side faults, if it is feasible to forego complete cold-load pickup capability by sequentially restoring segmented load.

STEP 3. In the line selected in Step 2, and in the "Transformer Protection Index ... " column corresponding to the transformer connection, determine the Transformer Protection Index (TPI). If there is no TPI in this line, then the fuse unit ampere rating listed will not provide protection for the transformer in accordance with the transformer short-time characteristic curve.

S&C recommends the use of a smaller ampere rating in this speed, provided the peak-load capability values listed are sufficient for the application. Alternately, consider using a fuse unit with a different speed characteristic.

STEP 4. Read across the table to the right in the line selected in Step 3 to determine the recommended fuse unit ampere rating. For this ampere rating and speed characteristic, verify proper coordination exists between the transformer-primary fuse and protective devices located on the primary side of the transformer as well as those on the secondary side of the transformer (if applicable).

STEP 5. Select the appropriate S&C Type SMD-20 Power Fuse based on the system voltage and interrupting duty. Refer to Table 21 on page 27

Table 22. Index to Selection Tables

Transformer Rating, Kv			Table Number	Page Number
Single-Phase		Three-Phase		
Phase-to-Neutral	Phase-to-Phase			
2.4	2.4	4.16	Table 1	7
		4.8	Table 2	8
4.16	4.8	7.2	Table 3	9
4.8	4.8	8.32	Table 4	10
6.9	6.9	12.0	Table 5	11
7.2	7.2	12.47	Table 6	12
7.62		13.2	Table 7	13
7.97		13.8	Table 8	14
8.32	8.32	14.4	Table 9	15
12.0	12.0	20.8	Table 10	16
13.2	13.2	22.9	Table 11	17
13.8	13.8	23.9	Table 12	18
14.4	14.4	24.9	Table 13	19
15.24		26.4	Table 14	20
15.93	15.93	27.6	Table 15	21
19.92		34.5	Table 16	22
	22.9		Table 17	23
	23.9		Table 18	24
	24.9		Table 19	25
	34.5		Table 20	26