

ABD0100.1.8.1C-A350 OPTION

Electrical Characteristics of A350
Test Sequences
OPERATION MANUAL

Pacific Power Source, Inc.

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1 INTRODUCTION

Pacific Power Source has developed various test sequence packages to assist test engineers in performing standard military or industrial compliance tests. The ABD0100.1.8.1C-A350 test sequence option is one of many options associated with Test Manager that Pacific Power Source offers.

The ABD0100.1.8.1C-A350 test sequence option is based on the AIRBUS-A350 Electrical Characteristics of A350 test standard, and consists of test sequences for single-phase and three-phase equipment in AC power categories. The Pacific Power Source Inc. ABD0100.1.8.1C-A350 option covers all AC power groups contained in the test standard as shown in the table below.

Power Group	Description	Nominal Voltage	Nominal Frequency	Phase Modes	ABD0100.8.1 Table
SVF	Single-Phase, Variable Frequency, 115 V	115Vrms L-N	360 – 800Hz	Single Phase	C.3
TVF	Three-Phase, Variable Frequency, 115 V	115Vrms L-N	360 – 800Hz	Three Phase	C.4
SVFH	Single-Phase, Variable Frequency, 230 V	230Vrms L-N	360 – 800Hz	Single Phase	C.5
TVFH	Three-Phase, Variable Frequency, 230 V	230Vrms L-N	360 – 800Hz	Three Phase	C.6
SCF	Single-Phase, 400 Hz Constant Frequency, 115 V	115Vrms L-N	400Hz	Single Phase	C.7
TCF	Three-Phase, 400 Hz Constant Frequency, 115 V	115Vrms L-N	400Hz	Three Phase	C.8
SCFH	Single-Phase, 400 Hz Constant Frequency, 230 V	230Vrms L-N	400Hz	Single Phase	C.9
TCFH	Three-Phase, 400 Hz Constant Frequency, 230 V	230Vrms L-N	400Hz	Three Phase	C.10

A test report in Rich Text Format (.rtf) is automatically generated for each test sequence performed in UPC Test Manager. Test steps, parameter measurements, waveforms and pass/fail test results are recorded as appropriate in the test report. Test engineers can also modify any of the pre-built test sequences and reports to better suit their needs.

This manual is neither a handbook to ABD0100.1.8.1C-A350 compliance testing nor a step-by-step tutorial for operation of UPC Studio and UPC Test Manager. It is assumed that the test engineer is familiar with ABD0100.1.8.1C-A350 test procedures and setups as well as UPC studio and UPC Test Manager Operation before using this ABD0100.1.8.1C-A350 test sequence option.

For UPC studio and UPC Test Manager operation, please refer to the Pacific Power Source UPC Studio and UPC Test Manager operation manuals.

Other test equipment in addition to a Pacific Power Source AC Source may be required for certain tests while using the ABD0100.1.8.1C-A350 test sequence option. These additional requirements are detailed in Section 7, Test Sequence Coverage.

2 HARDWARE REQUIREMENTS

Pacific Power Source units must meet the following requirements to perform the ABD0100.1.8.1C-A350 compliance tests:

- Single-phase test: the power source must have dual-range capability: either single-phase/transformer coupled or split-phase output forms.
- Three-phase test: the power source must have dual-range capability: direct output mode and transformer coupled output mode.

The amount of power or current required will vary according to the demands of the load. For detailed output capabilities on each power source model, refer to the Pacific Power Source Operation Manuals for the preferred power source units.

3 SOFTWARE INSTALLATION

The ABD0100.1.8.1C-A350 test sequences are distributed as ten install programs. User can install certain power group executable setup file to perform required test. It is not necessary to install all setup files. Each power group install program is independent of other power group setup files. The following executable setup files constitute the ABD0100.1.8.1C-A350 Option package:

149125-ABD0100.1.8.1C-A350-SCF Test Suite v1.0.exe

149125-ABD0100.1.8.1C-A350-SCFH Test Suite v1.0.exe

149125-ABD0100.1.8.1C-A350-SVF Test Suite v1.0.exe

149125-ABD0100.1.8.1C-A350-SVFH Test Suite v1.0.exe

149125-ABD0100.1.8.1C-A350-TCF Test Suite v1.0.exe

149125-ABD0100.1.8.1C-A350-TCFH Test Suite v1.0.exe

149125-ABD0100.1.8.1C-A350-TVF-1xx-3xx Test Suite v1.0.exe

149125-ABD0100.1.8.1C-A350-TVF-4xx-5xx Test Suite v1.0.exe

149125-ABD0100.1.8.1C-A350-TVFH-1xx-3xx Test Suite v1.0.exe

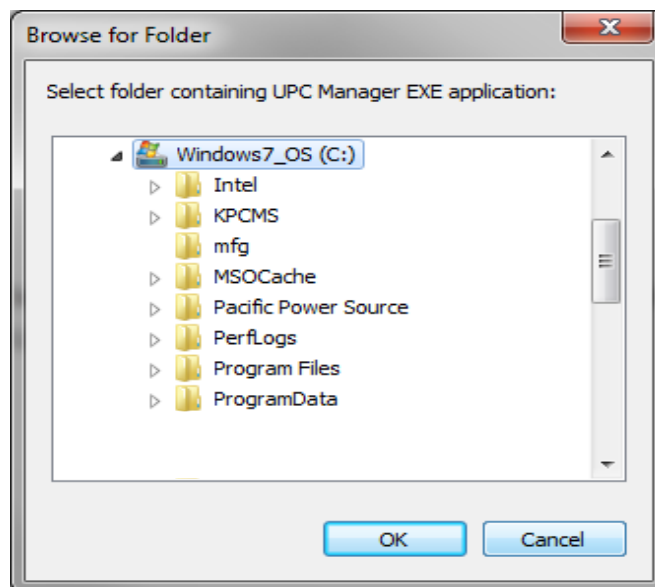
149125-ABD0100.1.8.1C-A350-TVFH-4xx-5xx Test Suite v1.0.exe

Note: The version number “v1.0” may vary as new updates are released.

Test Sequence software operation requires that Pacific’s UPC Manager and Test Manager Software products must already be installed on the target PC. During installation, Pacific Power Source’s test sequence files will be extracted into a default directory:

C:\Pacific Power Source\UPC Manager\Test Manager

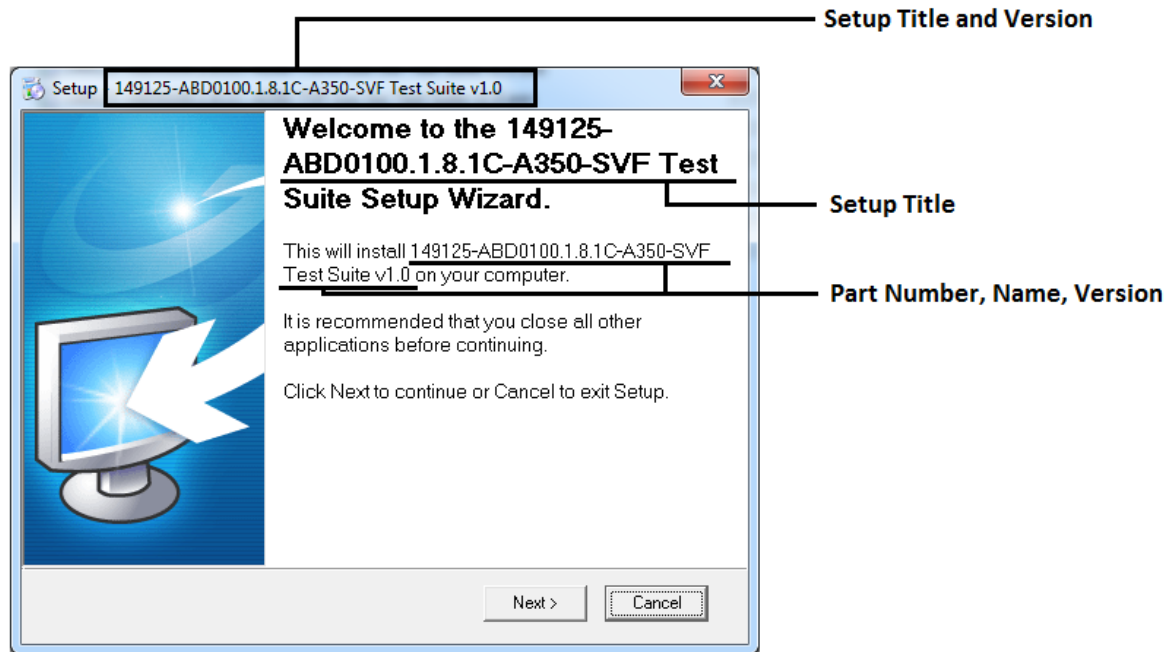
If the setup installer cannot locate UPC Manager, a dialog appears asking test engineers to browse to the UPC Manager.exe application as shown below.



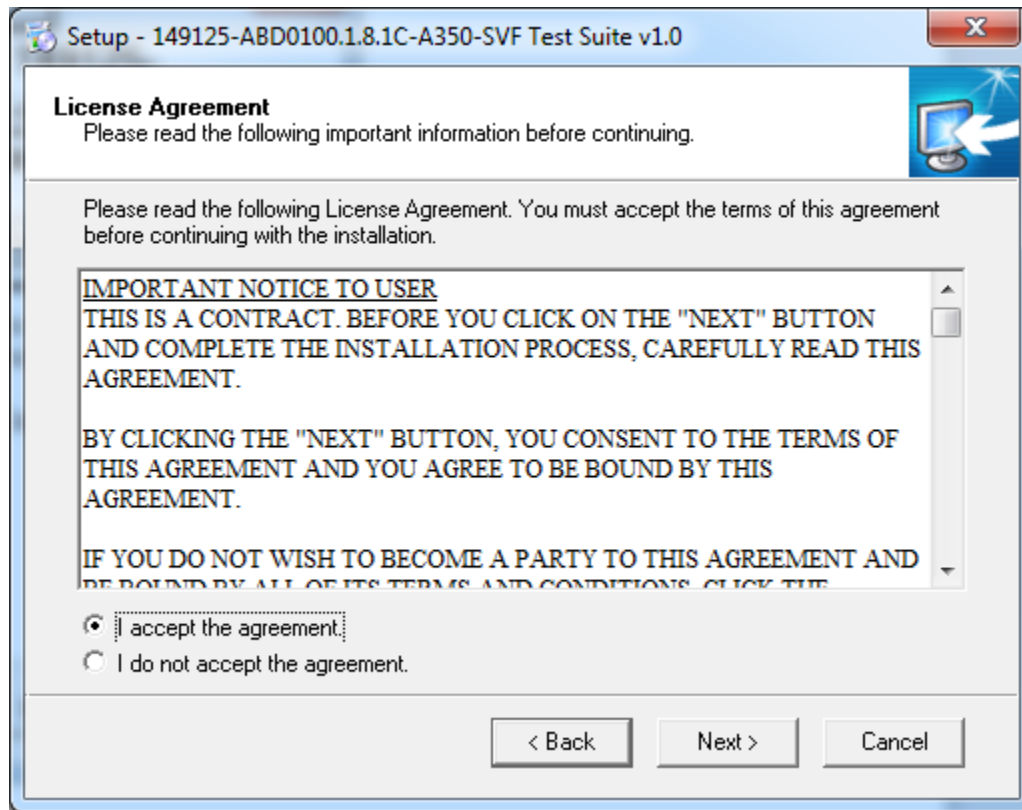
To install the ABD0100.1.8.1C-A350 Option test sequences:

- Double click one of the executable file:
149125-ABD0100.1.8.1C-A350-SVF Test Suite v1.0.exe

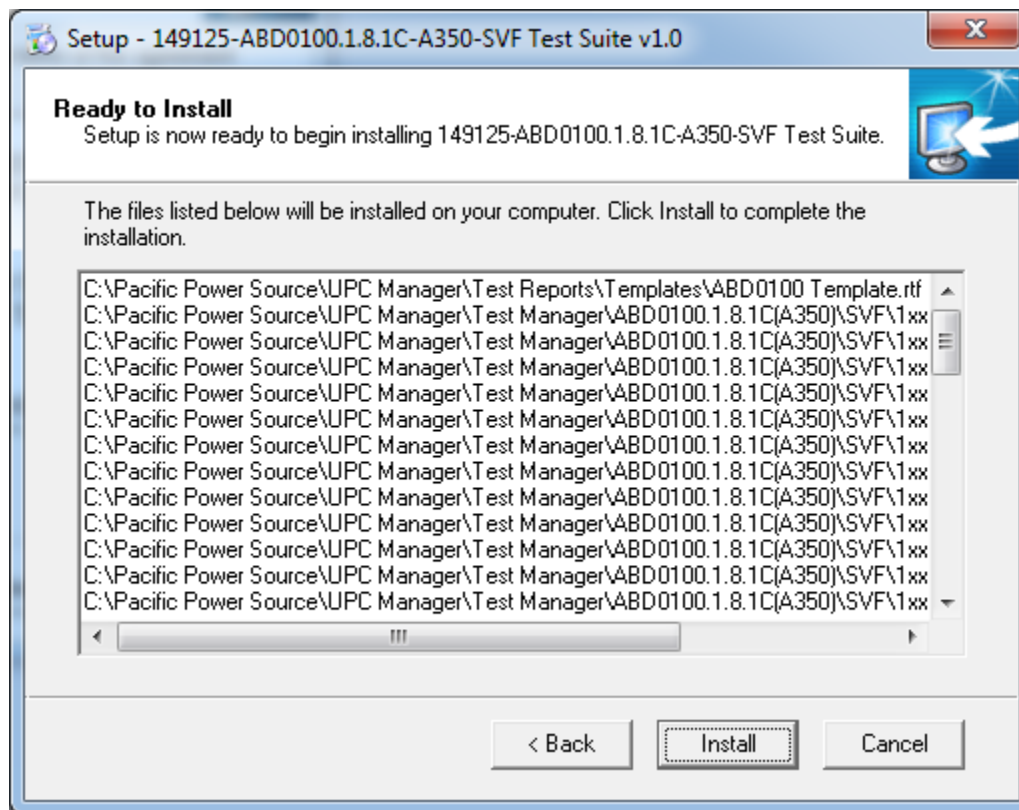
The Setup Wizard window appears as shown below.



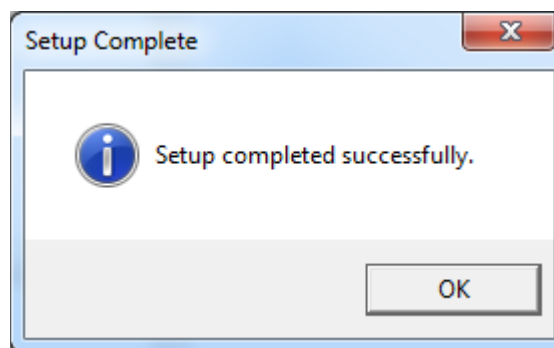
Click **Next** button to get to the License Agreement window.



- Read the License Agreement and check "I accept the agreement" to continue.
- Click **Next** button to get to Ready to install window as shown below.



- Click **Install** button to finish the installation.
- Depending on the size of the installed file, this process may take some amount of time. No activity is visible on the PC screen during this time but rest assured, the installation is progressing in the back ground.
- Wait till the dialog box shown below occurs to indicate the installation process has completed and click OK to complete the setup process.



4 SOFTWARE REMOVAL

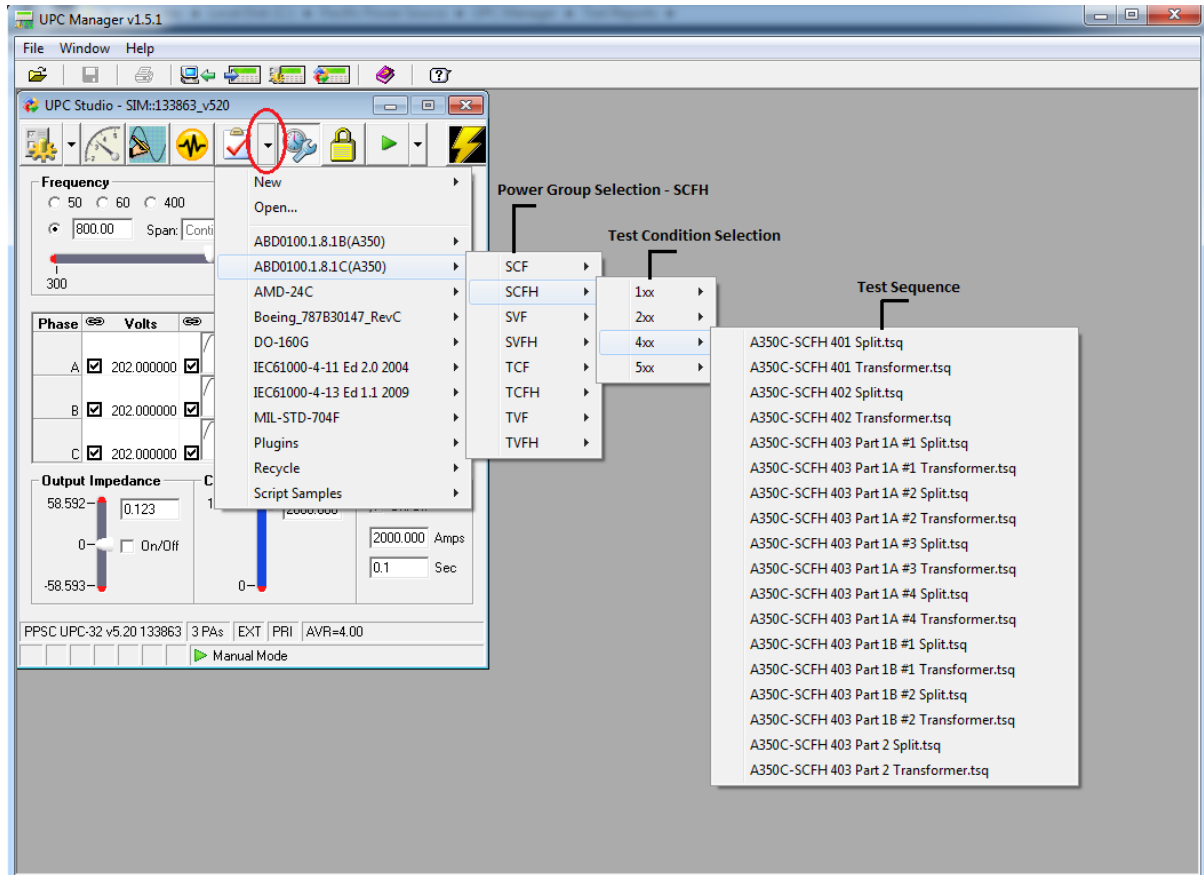
To uninstall ABD0100.1.8.1C-A350 test sequence files or packages:

- Navigate to the directory where the test sequence files or folder are saved.
- Delete the desired files or folders from the directory.

Note: There are no Windows® System files or registration entries associated with the test sequences so no uninstall program is required to remove the option files from a PC.

5 ABD0100.1.8.1C-A350 TEST MANAGER WINDOW

After the test sequence software is successfully installed, the individual test sequences are accessed from the Test Manager menu in UPC Studio as shown.



ABD0100.1.8.1C-A350 test sequences are grouped based on categories of equipment defined in the test standard: SCF, TCF, SVF and TVF. The individual test sequence files are named using the following naming convention:

Power Group	Operating Condition	Test Number	AC source coupling	File Extension
NNN_	D	DD	Optional	.tsq
SCF, SVF, TCF, or TVF	1 through 5	01 through 15	.. Direct Coupled	
			_FORM2 Split Phase mode	
			_XFMR Transformer coupled	

Thus, file A350C-SCF101.tsq is the test file for single phase, fixed frequency, normal operation, test 01 and is implemented using the low voltage range of the AC Source (Direct coupled output).

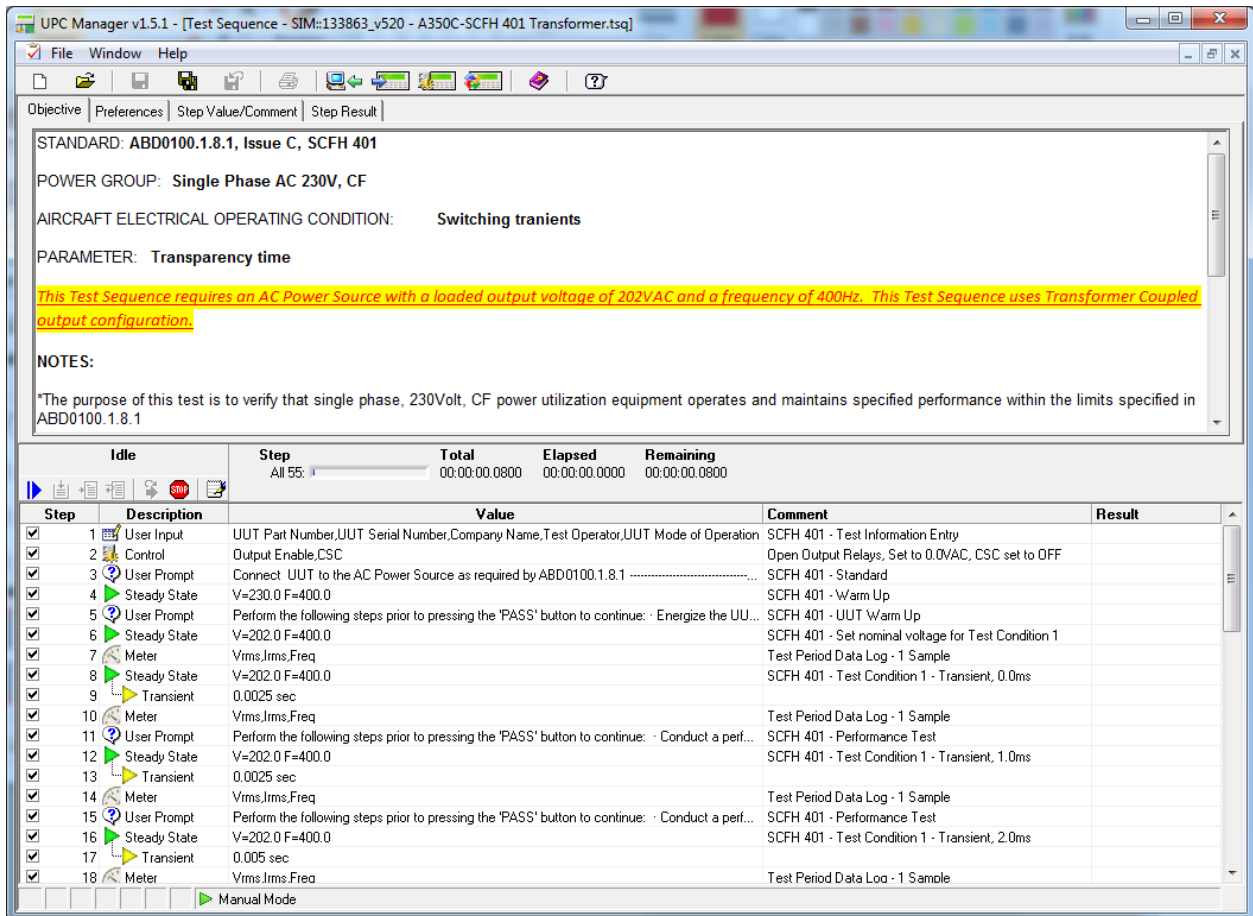
Note: While operation of individual test sequences is described in this document, normally it would be expected that the test engineers would use these test sequences to build a test plan. See Pacific Power Source UPC Test Manager Operation Manual for test plan detail.

6 ABD0100.1.8.1C-A350 TEST SEQUENCE WINDOWS

A typical test sequence is organized in five windows/ tabs: **Objective, Preferences, Step Value / Comment, Step Result, and Test Report**. The content and purpose of these windows are described in the following sections. For more definition of each field see Pacific Power Source UPC Test Manager Operation Manual.

6.1 Objective Window

In the **Objective** window, illustrated below, the ABD0100.1.8.1C-A350 section number, power group, operating condition, test purpose and time period, and parameter setup values are described in detail.



6.2 Preference Window

In the Preferences window shown below, "Allow Edit" is checked by default; The Pacific Power Source part number and version associated with the test sequence are indicated.

CAUTION

Test Sequences are distributed unprotected, providing the test engineer with the ability to edit and modify individual test and output sequences. It is recommended that a back-up copy of the output sequences be maintained to prevent inadvertent corruption of the factory supplied sequences.

The Report Template used with active test sequence is named "*ABD0100 Template*", and is automatically loaded from a default directory: *C:\Pacific Power Source\UPC Manager\Test Reports\Templates*;

If a "*" appears at the end of the template file name (i.e *ABD0100 Template **), It means data has been collected during a test and the test report has been updated but the report file has NOT yet been saved.

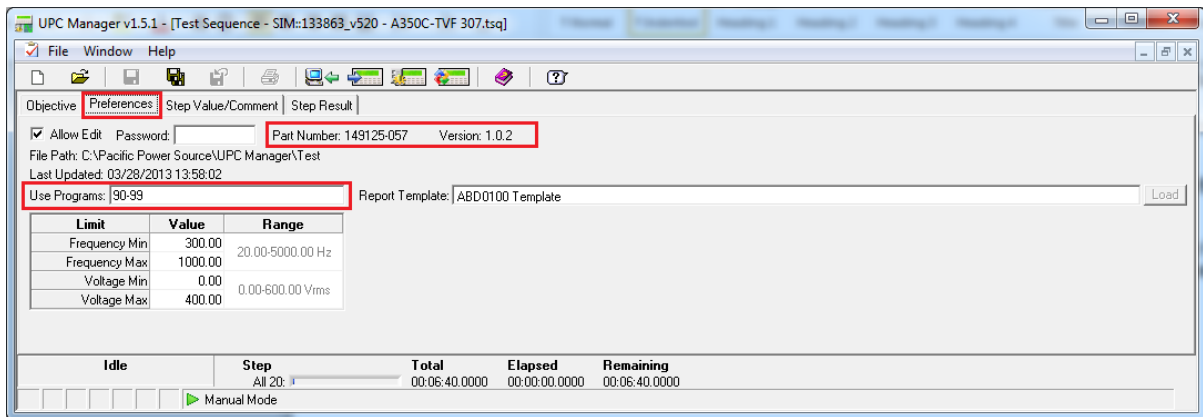
Limit	Value	Range
Frequency Min	300.00	20.00-5000.00 Hz
Frequency Max	1000.00	
Voltage Min	0.00	0.00-600.00 Vrms
Voltage Max	400.00	

Step	Description	Value	Comment	Result
1	User Input	UUT Part Number,UUT Serial Number,Co...	TVF 307 - Test Information Entry	
2	Control	Output Enable,CSC	Open Output Relays, Set to 0.0VAC, CSC...	
3	User Prompt	Connect UUT to the AC Power Source a...	TVF 307 - Standard	
4	Steady State	Va=115.0 Vb=115.0 Vc=115.0 F=360.0	TVF 307 - Test Condition 1 - At the maxim...	
5	User Prompt	Perform the following steps prior to pressin...	TVF 307 - UUT Warm Up	
6	Steady State	Va=109.5 Vb=109.5 Vc=109.5 F=360.0	TVF 307 - Test Condition 1 - At the maxim...	
7	Meter	Vrms,Irms,Freq,Degrees,PF	Test Period Data Log - 1 Sample every 10...	
8	User Prompt	Perform the following steps prior to pressin...	TVF 307 - Performance Test	
9	Steady State	Va=109.5 Vb=109.5 Vc=109.5 F=800.0	TVF 307 - Test Condition 2 - At the maxim...	
10	Meter	Vrms,Irms,Freq,Degrees,PF	Test Period Data Log - 1 Sample every 10...	
11	User Prompt	Perform the following steps prior to pressin...	TVF 307 - Performance Test	
12	Steady State	Va=120.5 Vb=120.5 Vc=120.5 F=360.0	TVF 307 - Test Condition 3 - At the maxim...	
13	Meter	Vrms,Irms,Freq,Degrees,PF	Test Period Data Log - 1 Sample every 10...	
14	User Prompt	Perform the following steps prior to pressin...	TVF 307 - Performance Test	
15	Steady State	Va=120.5 Vb=120.5 Vc=120.5 F=800.0	TVF 307 - Test Condition 4 - At the maxim...	
16	Meter	Vrms,Irms,Freq,Degrees,PF	Test Period Data Log - 1 Sample every 10...	
17	User Prompt	Perform the following steps prior to pressin...	TVF 307 - Final Performance Test	
18	User Prompt	- If UUT has met Compliance, then click ...	Caution: Output Disable	
19	Steady State	Va=0.0 Vb=0.0 Vc=0.0 F=800.0	TVF 307 - Set 0.0VAC & 800Hz	
20	Control	Output Enable	Change Output Enable to Disable [Off]	

6.3 Preference Window (continued)

“Use program” is set to use UPC programs 90-99 as default value; a set of suitable minimum and maximum values for each parameter are defined in the Limits table. “File path” and “Last update” information are updated each time when the test sequence is activated.

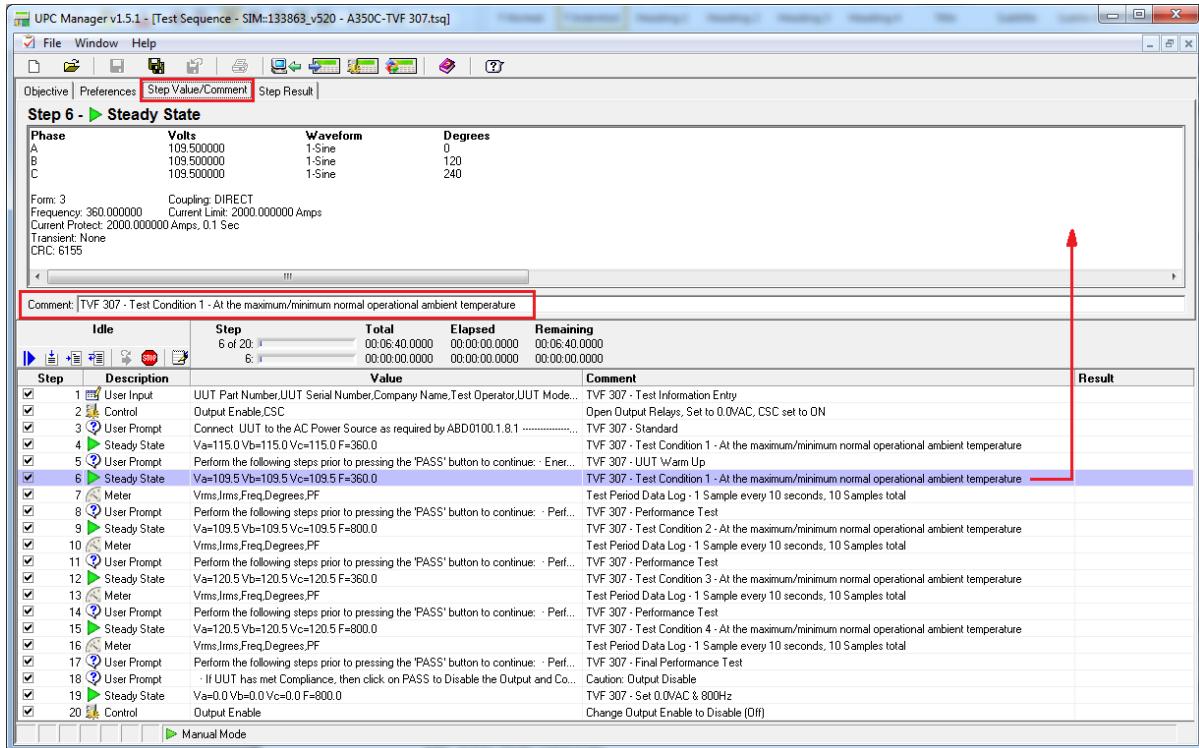
The ABD0100.1.8.1C-A350 test sequences are created to allow test engineers to modify test sequence settings based on their preferences and needs, as well as to keep track of how many times a file has been changed and saved. Each time a test sequence file is modified and saved under the original name, the 3rd digit of the version number, appearing in the **Preference** window, will increment by 1 (i.e. x.x.1). In the illustration below, the version 1.0.2 means the active test sequence file has been modified and saved twice.



If a test engineer will be modifying a test sequence, it is recommended that a copy of the original file first be saved in a different folder as changes overwrite the existing file. For detail information on test sequence modification, please see UPC Test Manager Operation Manual.

6.4 Step Value/Comment Window

In the **Step Value/Comment** window, the step settings are displayed for each selected item in the Step Table window. Purpose and test descriptions for individual test steps are summarized in the “Comment” text box.



6.5 Step Result Window

In the **Step Result** window, the test result from each selected step is recorded. The results are recorded in the forms of text, numbers or graphs as defined in the active test sequence.

The screenshot shows the 'Step Result' window in the UPC Manager v1.5.1 software. The window title is 'UPC Manager v1.5.1 - [TestSequence - SIM-133963_v520 - A350C-TVF 307.tsq]'. The 'Step Result' tab is active, displaying a table of test results for Step 10, which is currently running.

Step 10 - Running...

Date/Time	Elapsed	Vrms(L-N) A	Vrms(L-N) B	Vrms(L-N) C	Irms A	Irms B	Irms C	Frequency A	Frequency B	Frequency C	Degrees A	Degrees B	Degrees C	PF A	PF B	PF C
03/26/2013 14:09:08	0	109.500	109.500	109.500	18.250	18.250	18.250	800.000	800.000	800.000	0	120	240	1.000	1.000	1.000
03/26/2013 14:09:10	10.000	109.500	109.500	109.500	18.250	18.250	18.250	800.000	800.000	800.000	0	120	240	1.000	1.000	1.000
03/26/2013 14:09:28	20.030	109.500	109.500	109.500	18.250	18.250	18.250	800.000	800.000	800.000	0	120	240	1.000	1.000	1.000

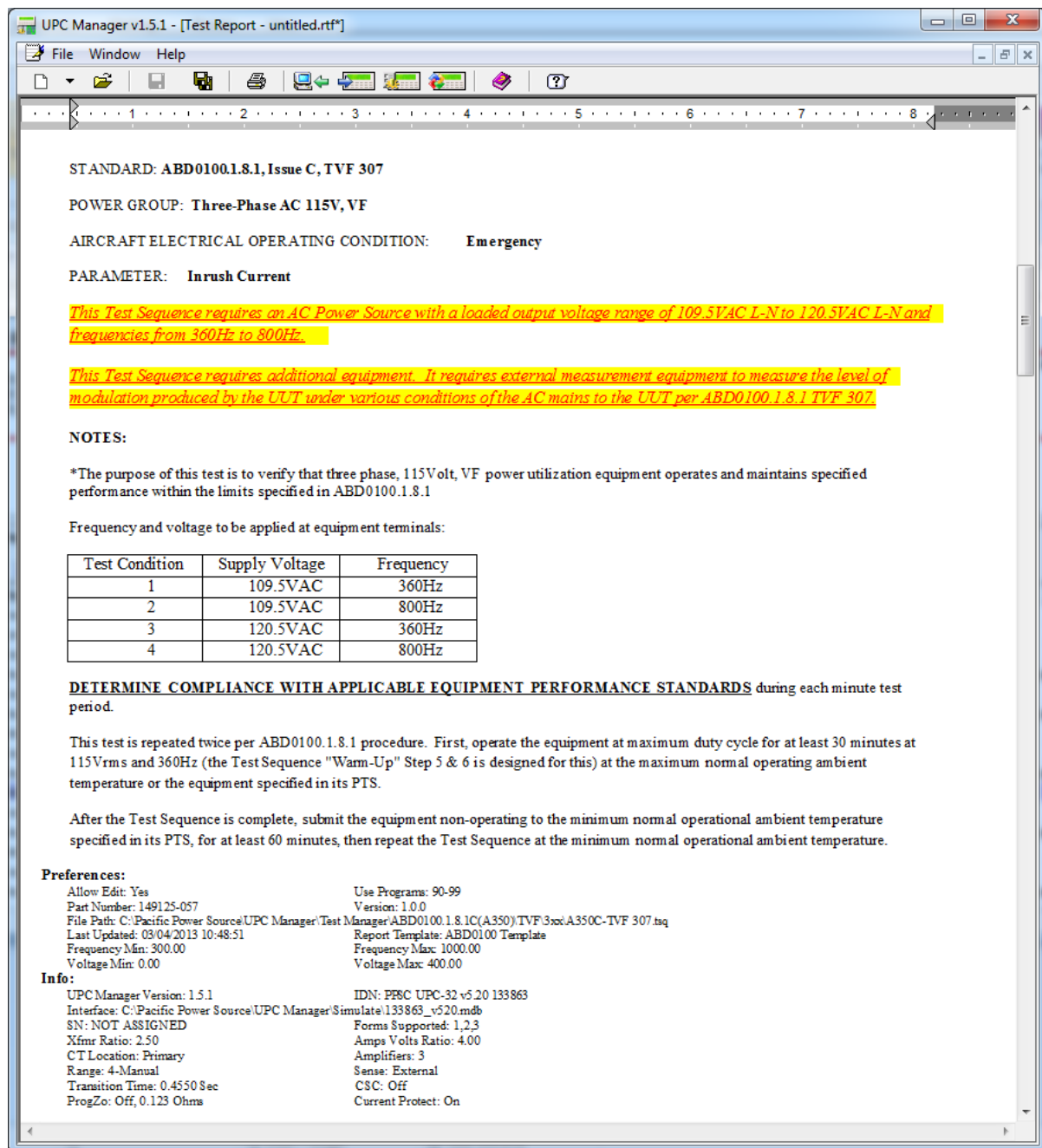
Below the table, the 'Running Step 10...' section shows the progress of the step. The 'Step' is 10 of 20, with a 'Total' time of 00:06:40.0000, 'Elapsed' time of 00:02:06.0170, and 'Remaining' time of 00:04:33.9830.

The 'Step' list at the bottom shows the sequence of steps and their results:

Step	Description	Value	Comment	Result
1	User Input	UIUT Part Number, UIUT Serial Number, Company Name, Test Operator, UIUT Mode...	TVF 307 - Test Information Entry	Passed
2	Control	Output Enable, CSC	Open Output Relays, Set to 0.0VAC, CSC set to DIN	Passed
3	User Prompt	Connect UIUT to the AC Power Source as required by ABD0100.1.8.1	TVF 307 - Standard	Passed
4	Steady State	Va=115.0 Vb=115.0 Vc=115.0 F=360.0	TVF 307 - Test Condition 1 - At the maximum/minimum normal operational ambient temperature	Passed
5	User Prompt	Perform the following steps prior to pressing the 'PASS' button to continue: Enter...	TVF 307 - UIUT Warm Up	Passed
6	Steady State	Va=109.5 Vb=109.5 Vc=109.5 F=360.0	TVF 307 - Test Condition 1 - At the maximum/minimum normal operational ambient temperature	Passed
7	Meter	Vrms, Irms, Freq, Degrees, PF	Test Period Data Log - 1 Sample every 10 seconds, 10 Samples total	Passed
8	User Prompt	Perform the following steps prior to pressing the 'PASS' button to continue: Perf...	TVF 307 - Performance Test	Passed
9	Steady State	Va=109.5 Vb=109.5 Vc=109.5 F=400.0	TVF 307 - Test Condition 2 - At the maximum/minimum normal operational ambient temperature	Passed
10	Meter	Vrms, Irms, Freq, Degrees, PF	Test Period Data Log - 1 Sample every 10 seconds, 10 Samples total	Running
11	User Prompt	Perform the following steps prior to pressing the 'PASS' button to continue: Perf...	TVF 307 - Performance Test	
12	Steady State	Va=120.5 Vb=120.5 Vc=120.5 F=360.0	TVF 307 - Test Condition 3 - At the maximum/minimum normal operational ambient temperature	
13	Meter	Vrms, Irms, Freq, Degrees, PF	Test Period Data Log - 1 Sample every 10 seconds, 10 Samples total	
14	User Prompt	Perform the following steps prior to pressing the 'PASS' button to continue: Perf...	TVF 307 - Performance Test	
15	Steady State	Va=120.5 Vb=120.5 Vc=120.5 F=400.0	TVF 307 - Test Condition 4 - At the maximum/minimum normal operational ambient temperature	

6.6 Test Report Window

After the test sequence execution is completed, a test report is generated using the template file defined in the **Preference** window. All test detail information including file name, objective, preference settings, and test results are recorded in the test report as shown below. For detailed information on viewing and saving test reports, please refer to UPC Test Manager Operation Manual.



7 ABD0100.1.8.1C-A350 TEST SEQUENCE COVERAGE

7.1 Test Coverage Summary

The ABD0100.1.8.1C-A350 test sequence coverage is summarized in Table 1. Tests marked with “Y” are covered in ABD0100.1.8.1C-A350 option. Tests marked with “N/A” are not applicable to the related sections for ABD0100.1.8.1C-A350.

Power Group	Description	Nominal Voltage	Nominal Frequency	Phase Modes	ABD0100.8.1 Table
SVF	Single-Phase, Variable Frequency, 115 V	115Vrms L-N	360 – 800Hz	Single Phase	C.3
TVF	Three-Phase, Variable Frequency, 115 V	115Vrms L-N	360 – 800Hz	Three Phase	C.4
SVFH	Single-Phase, Variable Frequency, 230 V	230Vrms L-N	360 – 800Hz	Single Phase	C.5
TVFH	Three-Phase, Variable Frequency, 230 V	230Vrms L-N	360 – 800Hz	Three Phase	C.6
SCF	Single-Phase, 400 Hz Constant Frequency, 115 V	115Vrms L-N	400Hz	Single Phase	C.7
TCF	Three-Phase, 400 Hz Constant Frequency, 115 V	115Vrms L-N	400Hz	Three Phase	C.8
SCFH	Single-Phase, 400 Hz Constant Frequency, 230 V	230Vrms L-N	400Hz	Single Phase	C.9
TCFH	Three-Phase, 400 Hz Constant Frequency, 230 V	230Vrms L-N	400Hz	Three Phase	C.10

Table 1: ABD0100.1.8.1C-A350 Option Power Group Coverage

Test	Description	SVF	TVF	SVFH	TVFH	SCF	TCF	SCFH	TCFH	Notes
VF	CF									
Normal Operation (1xx)										
101	Steady State Voltage and Frequency	Y	Y	Y	Y	Y	Y	Y	Y	
102	Voltage Transients	Y	Y	Y	Y	Y	Y	Y	Y	High voltage spikes up to 160V or 324V requires split phase (FORM2) or Transformer Option
103	Voltage Modulation	Y	Y	Y	Y	Y	Y	Y	Y	
104	Voltage Spikes	R	R	R	R	R	R	R	R	Requires external Spike Generator with 1000V pos/neg capability
105	Current Distortion	R	R	R	R	R	R	R	R	Requires Spectrum Analyzer and CT's to monitor UUT current
106	Voltage Distortion	Y	Y	Y	Y	Y	Y	Y	Y	Requires adjustable full-bridge rectifier load
107	Voltage Distortion	R	R	R	R	R	R	R	R	Requires External Signal Generator and Coupling Transformer

Test		Description	SVF	TVF	SVFH	TVFH	SCF	TCF	SCFH	TCFH	Notes
VF	CF										
108		Voltage Distortion Transients	Y	Y	Y	Y	Y	Y	Y	Y	Requires adjustable full-bridge rectifier load
109		Inrush Current	R, Z	R, Z	R, Z	R,Z	R,Z	R,Z	R,Z	R,Z	Requires measurement equipment to measure inrush current. May require special input cabling to meet impedance requirements
110		Frequency Variations	Y	Y	Y	Y					
111	110	Frequency Modulation	Y	Y	Y	Y	Y	Y	Y	Y	
112	111	Voltage DC Content	R	R	R	R	R	R	R	R	Requires additional DC Power Supply
113	112	Voltage Modulation due to Equipment	R	R	R	R	R	R	R	R	May require special input cabling to meet impedance requirements
114	113	Voltage Spike due to Equip. Load Switching	R	R	R	R	R	R	R	R	Requires contactor/relay switching between AC Source and UUT
115	114	Voltage Unbalance Transient	N/A	Y	N/A	Y	N/A	Y	N/A	Y	
Abnormal Operation (2xx)											
201		Steady State Voltage and Frequency	Y	Y	Y	Y	Y	Y	Y	Y	
202		Voltage Transients	Y	Y	Y	Y	Y	Y	Y	Y	High voltage spikes up to 180V or 360V requires split phase (FORM2) or Transformer Option
203		Voltage Modulation	Y	Y	Y	Y	Y	Y	Y	Y	
204		Frequency Transients	Y	Y	Y	Y	Y	Y	Y	Y	
Emergency Operation (3xx)											
301		Steady State Voltage and Frequency	Y	Y	Y	Y	N/A	N/A	N/A	N/A	
302		Voltage Distortion	Y	Y	Y	Y	N/A	N/A	N/A	N/A	Requires adjustable full-bridge rectifier load
303		Voltage Distortion	R	R	R	R	N/A	N/A	N/A	N/A	Requires External Signal Generator and Coupling Transformer
304		Voltage Distortion Transients	Y	Y	Y	Y	N/A	N/A	N/A	N/A	Requires adjustable full-bridge rectifier load
305		Inrush Current	Y	Y	Y	Y	N/A	N/A	N/A	N/A	Requires measurement equipment to measure inrush current. May require special input cabling to

Test	Description	SVF	TVF	SVFH	TVFH	SCF	TCF	SCFH	TCFH	Notes
VF	CF									
										meet impedance requirements
306	Frequency Variations	Y	Y	Y	Y	N/A	N/A	N/A	N/A	
307	Voltage Modulation due to Equipment	Y	Y	Y	Y	N/A	N/A	N/A	N/A	May require special input cabling to meet impedance requirements
Switching Transients (4xx)										
401	Transparency Time	Y	Y	Y	Y	Y	Y	Y	Y	
402	Voltage Switching Transients 1	Y	Y	Y	Y	Y	Y	Y	Y	
403	Voltage Switching Transients 2, Part 1A	Y	Y	Y	Y	Y	Y	Y	Y	
404	Voltage Switching Transients w/Freq. Change	Y	Y	Y	Y	N/A	N/A	N/A	N/A	
Power Supply Removal (5xx)										
501	Power Line Disconnection	Y	Y	Y	Y	Y	Y	Y	Y	

Table 2: ABD0100.1.8.1C-A350 Test Coverage Summary Table

Notes: Y = Full support
R = Requires Additional Equipment
N = Not supported

N/A = Not Applicable – No Test Required
Z = Requires Prog-Z option on AC Source

7.2 Test Section Coverage Tables

Depending on the power source used to perform tests with the ABD0100.1.8.1C-A350 option, additional equipment may be required if the test or load requirements are beyond the power source capabilities. These additional requirements are specified in the following test section coverage tables, "Comments" column. The test limits and parameter settings of each test are described in the **Objective** window of the related test sequence in Test Manager.

TEST SCF	DESCRIPTION	COMMENTS
SCF 101	Steady-State Voltage and Frequency	
SCF 102	Voltage Transients - Split	High voltage spikes up to 160VAC, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCF 102	Voltage Transients - Transformer	High voltage spikes up to 160VAC, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCF 103	Voltage Modulation	
SCF 104	Voltage Spikes	Requires External Spike Generator with 1000V pos/neg capability
SCF 105	Current Distortion	Requires Spectrum Analyzer and CTs to monitor UUT
SCF 106	Voltage Distortion 1 #1	Requires adjustable full-wave bridge rectifier load, also run Endurance Test for proper UUT type (#2 or #3)
SCF 106	Voltage Distortion 1 #2 - Endurance Test with motor	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3)
SCF 106	Voltage Distortion 1 #3 - Endurance Test w/o motor	Requires adjustable full-wave bridge rectifier load, for UUT without motors - use appropriate Test Sequence (#2 or #3)
SCF 107	Voltage Distortion 2	Requires Signal Generator and a coupling transformer
SCF 108	Voltage Distortion Transients	Requires adjustable full-wave bridge rectifier load
SCF 109	Inrush Current	Requires measurement equipment to measure inrush currents May require special input cabling for impedance requirements
SCF 110	Frequency Variations	
SCF 111	Frequency Modulation	
SCF 112	Voltage DC Content	Requires DC Power Supply to fully test UUT
SCF 113	Voltage Modulation due to Equipment	May require special input cabling for impedance requirements
SCF 201	Steady-state Voltage and Frequency	
SCF 202	Voltage Transients - Split	High voltage spikes up to 180VAC, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCF 202	Voltage Transients - Transformer	High voltage spikes up to 180VAC, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCF 203	Voltage Modulation	
SCF 204	Frequency Transients	
SCF 401	Transparency Time	
SCF 402	Voltage Switching Transients 1	
SCF 403	Voltage Switching Transients 2 Part 1A #1	Perform all SCF 403 tests on UUT (All Part 1A, 1B, & 2)
SCF 403	Voltage Switching Transients 2 Part 1A #2	Perform all SCF 403 tests on UUT (All Part 1A, 1B, & 2)

TEST SCF	DESCRIPTION	COMMENTS
SCF 403	Voltage Switching Transients 2 Part 1A #3	Perform all SCF 403 tests on UUT (All Part 1A, 1B, & 2)
SCF 403	Voltage Switching Transients 2 Part 1A #4	Perform all SCF 403 tests on UUT (All Part 1A, 1B, & 2)
SCF 403	Voltage Switching Transients 2 Part 1B #1	Perform all SCF 403 tests on UUT (All Part 1A, 1B, & 2)
SCF 403	Voltage Switching Transients 2 Part 1B #2	Perform all SCF 403 tests on UUT (All Part 1A, 1B, & 2)
SCF 403	Voltage Switching Transients 2 Part 2	Perform all SCF 403 tests on UUT (All Part 1A, 1B, & 2)
SCF 501	SCF 501 Power Line Disconnection	Requires disconnection of AC power lines during testing

Table 3: Section Coverage Table - Power Group – SCF

TEST SCFH	DESCRIPTION	COMMENTS
SCFH 101	Steady-State Voltage and Frequency - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 101	Steady-State Voltage and Frequency - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 102	Voltage Transients - Xfmr	High voltage spikes up to 324VAC, requires "Transformer" AC Source capability, use either "Xfmr" or "Split&Xfmr"
SCFH 102	Voltage Transients - Split & Xfmr	High voltage spikes up to 324VAC, requires "Split&Xfmr" AC Source capability, use either "Xfmr" or "Split&Xfmr"
SCFH 103	Voltage Modulation - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 103	Voltage Modulation - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 104	Voltage Spikes - Split	Requires External Spike Generator with 1000V pos/neg capability, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 104	Voltage Spikes - Xfmr	Requires External Spike Generator with 1000V pos/neg capability, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 105	Current Distortion - Split	Requires Spectrum Analyzer and CTs to monitor UUT, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 105	Current Distortion - Xfmr	Requires Spectrum Analyzer and CTs to monitor UUT, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 106	Voltage Distortion 1 #1 - Split	Requires adjustable full-wave bridge rectifier load, also run Endurance Test for proper UUT type (#2 or #3), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 106	Voltage Distortion 1 #2 - Endurance with motor - Split	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 106	Voltage Distortion 1 #3 - Endurance w/o motor - Split	Requires adjustable full-wave bridge rectifier load, for UUT without motors - use appropriate Test Sequence (#2 or #3), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"

TEST SCFH	DESCRIPTION	COMMENTS
SCFH 106	Voltage Distortion 1 #1 - Xfmr	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 106	Voltage Distortion 1 #2 - Endurance with motor - Xfmr	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 106	Voltage Distortion 1 #3 - Endurance w/o motor - Xfmr	Requires adjustable full-wave bridge rectifier load, for UUT without motors - use appropriate Test Sequence (#2 or #3), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 107	Voltage Distortion 2 - Split	Requires Signal Generator and a coupling transformer, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 107	Voltage Distortion 2 - Xfmr	Requires Signal Generator and a coupling transformer, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 108	Voltage Distortion Transients - Split	Requires adjustable full-wave bridge rectifier load, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 108	Voltage Distortion Transients - Xfmr	Requires adjustable full-wave bridge rectifier load, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 109	Inrush Current - Split	Requires measurement equipment to measure inrush currents May require special input cabling for impedance requirements Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 109	Inrush Current - Xfmr	Requires measurement equipment to measure inrush currents May require special input cabling for impedance requirements Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 110	Frequency Variations - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 110	Frequency Variations - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 111	Frequency Modulation - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 111	Frequency Modulation - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 112	Voltage DC Content - Split	Requires DC Power Supply to fully test UUT, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 112	Voltage DC Content - Xfmr	Requires DC Power Supply to fully test UUT, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 113	Voltage Modulation due to Equipment - Split	May require special input cabling for impedance requirements, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 113	Voltage Modulation due to Equipment - Xfmr	May require special input cabling for impedance requirements, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 201	Steady-state Voltage and Frequency - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 201	Steady-state Voltage and Frequency - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"

TEST SCFH	DESCRIPTION	COMMENTS
SCFH 202	Voltage Transients - Xfmr	High voltage spikes up to 360VAC, requires "Transformer" AC Source capability, use either "Xfmr" or "Split&Xfmr"
SCFH 202	Voltage Transients - Split & Xfmr	High voltage spikes up to 360VAC, requires "Split&Xfmr" AC Source capability, use either "Xfmr" or "Split&Xfmr"
SCFH 203	Voltage Modulation - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 203	Voltage Modulation - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 204	Frequency Transients - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 204	Frequency Transients - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 401	Transparency Time - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 401	Transparency Time - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 402	Voltage Switching Transients 1 - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 402	Voltage Switching Transients 1 - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 403	Voltage Switching Transients 2 Part 1A #1 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 403	Voltage Switching Transients 2 Part 1A #2 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 403	Voltage Switching Transients 2 Part 1A #3 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 403	Voltage Switching Transients 2 Part 1A #4 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 403	Voltage Switching Transients Part 1B #1 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 403	Voltage Switching Transients Part 1B #2 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 403	Voltage Switching Transients 2 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 403	Voltage Switching Transients 2 Part 1A #1 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 403	Voltage Switching Transients 2 Part 1A #2 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 403	Voltage Switching Transients 2 Part 1A #3 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 403	Voltage Switching Transients 2 Part 1A #4 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 403	Voltage Switching Transients 1B #1 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"

TEST SCFH	DESCRIPTION	COMMENTS
SCFH 403	Voltage Switching Transients 1B #2 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 403	Voltage Switching Transients 2 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 501	Power Line Disconnection - Split	Requires disconnection of AC power lines during testing, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 501	Power Line Disconnection - Xfmr	Requires disconnection of AC power lines during testing, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"

Table 4: Section Coverage Table - Power Group – SCFH

TEST TCF	DESCRIPTION	COMMENTS
TCF 101	Steady-State Voltage and Frequency	
TCF 102	Voltage Transients	High voltage spikes up to 160VAC, requires "Transformer" AC Source capability
TCF 103	Voltage Modulation	
TCF 104	Voltage Spikes	Requires External Spike Generator with 1000V pos/neg capability
TCF 105	Current Distortion	Requires Spectrum Analyzer and CTs to monitor UUT
TCF 106	Voltage Distortion 1 #1	Requires adjustable full-wave bridge rectifier load, also run Endurance Test for proper UUT type (#2 or #3)
TCF 106	Voltage Distortion 1 #2 - Endurance Test with motor	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3)
TCF 106	Voltage Distortion 1 #3 - Endurance Test w/o motor	Requires adjustable full-wave bridge rectifier load, for UUT without motors - use appropriate Test Sequence (#2 or #3)
TCF 107	Voltage Distortion 2	Requires Signal Generator and a coupling transformer
TCF 108	Voltage Distortion Transients	Requires adjustable full-wave bridge rectifier load
TCF 109	Inrush Current	Requires measurement equipment to measure inrush currents May require special input cabling for impedance requirements
TCF 110	Frequency Modulation	
TCF 111	Voltage DC Content	Requires DC Power Supply to fully test UUT
TCF 112	Voltage Modulation due to Equipment	
TCF 113	Voltage Spike due to Equip Load Switch	May require special input cabling for impedance requirements
TCF 114	Voltage Unbalance Transient	Requires contactor/relay switching between AC Source and UUT
TCF 201	Steady-state Voltage and Frequency	
TCF 202	Voltage Transients	High voltage spikes up to 180VAC, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
TCF 203	Voltage Modulation	
TCF 204	Frequency Transients	
TCF 401	Transparency Time	
TCF 402	Voltage Switching Transients 1	Perform all TCF 402 tests on UUT (#1 thru #3)
TCF 402	Voltage Switching Transients 1	Perform all TCF 402 tests on UUT (#1 thru #3)
TCF 402	Voltage Switching Transients 1	Perform all TCF 402 tests on UUT (#1 thru #3)
TCF 403	Voltage Switching Transients 2 Part 1A #1	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)

TEST TCF	DESCRIPTION	COMMENTS
TCF 403	Voltage Switching Transients 2 Part 1A #2	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCF 403	Voltage Switching Transients 2 Part 1A #3	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCF 403	Voltage Switching Transients 2 Part 1A #4	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCF 403	Voltage Switching Transients 2 Part 1A #5	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCF 403	Voltage Switching Transients 2 Part 1A #6	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCF 403	Voltage Switching Transients 2 Part 1A #7	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCF 403	Voltage Switching Transients 2 Part 1A #8	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCF 403	Voltage Switching Transients 2 Part 1A #9	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCF 403	Voltage Switching Transients 2 Part 1A #10	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCF 403	Voltage Switching Transients 2 Part 1B #1	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCF 403	Voltage Switching Transients 2 Part 1B #2	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCF 403	Voltage Switching Transients 2 Part 1B #3	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCF 403	Voltage Switching Transients 2 Part 1B #4	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCF 403	Voltage Switching Transients 2 Part 1B #5	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCF 403	Voltage Switching Transients 2 Part 2A	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCF 403	Voltage Switching Transients 2 Part 2B	Perform all TCF 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCF 501	Power Line Disconnection	Requires disconnection of AC power lines during testing

Table 5: Section Coverage Table - Power Group – TCF

TEST TCFH	DESCRIPTION	COMMENTS
TCFH 101	Steady-State Voltage and Frequency	
TCFH 102	Voltage Transients	High voltage spikes up to 324VAC, requires "Transformer" AC Source capability
TCFH 103	Voltage Modulation	
TCFH 104	Voltage Spikes	Requires External Spike Generator with 1000V pos/neg capability
TCFH 105	Current Distortion	Requires Spectrum Analyzer and CTs to monitor UUT
TCFH 106	Voltage Distortion 1 #1	Requires adjustable full-wave bridge rectifier load, also run Endurance Test for proper UUT type (#2 or #3)
TCFH 106	Voltage Distortion 1 #2 - Endurance Test with motor	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3)
TCFH 106	Voltage Distortion 1 #3 - Endurance Test w/o motor	Requires adjustable full-wave bridge rectifier load, for UUT without motors - use appropriate Test Sequence (#2 or #3)
TCFH 107	Voltage Distortion 2	Requires Signal Generator and a coupling transformer
TCFH 108	Voltage Distortion Transients	Requires adjustable full-wave bridge rectifier load
TCFH 109	Inrush Current	Requires measurement equipment to measure inrush currents May require special input cabling for impedance requirements
TCFH 110	Frequency Modulation	
TCFH 111	Voltage DC Content	Requires DC Power Supply to fully test UUT
TCFH 112	Voltage Modulation due to Equipment	
TCFH 113	Voltage Spike due to Equip Load Switch	May require special input cabling for impedance requirements
TCFH 114	Voltage Unbalance Transient	Requires contactor/relay switching between AC Source and UUT
TCFH 201	Steady-state Voltage and Frequency	
TCFH 202	Voltage Transients	High voltage spikes up to 180VAC, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
TCFH 203	Voltage Modulation	
TCFH 204	Frequency Transients	
TCFH 401	Transparency Time	
TCFH 402	Voltage Switching Transients 1	Perform all TCFH 402 tests on UUT (#1 thru #3)
TCFH 402	Voltage Switching Transients 1	Perform all TCFH 402 tests on UUT (#1 thru #3)
TCFH 402	Voltage Switching Transients 1	Perform all TCFH 402 tests on UUT (#1 thru #3)
TCFH 403	Voltage Switching Transients 2 Part 1A #1	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)

TEST TCFH	DESCRIPTION	COMMENTS
TCFH 403	Voltage Switching Transients 2 Part 1A #2	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCFH 403	Voltage Switching Transients 2 Part 1A #3	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCFH 403	Voltage Switching Transients 2 Part 1A #4	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCFH 403	Voltage Switching Transients 2 Part 1A #5	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCFH 403	Voltage Switching Transients 2 Part 1A #6	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCFH 403	Voltage Switching Transients 2 Part 1A #7	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCFH 403	Voltage Switching Transients 2 Part 1A #8	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCFH 403	Voltage Switching Transients 2 Part 1A #9	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCFH 403	Voltage Switching Transients 2 Part 1A #10	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCFH 403	Voltage Switching Transients 2 Part 1B #1	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCFH 403	Voltage Switching Transients 2 Part 1B #2	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCFH 403	Voltage Switching Transients 2 Part 1B #3	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCFH 403	Voltage Switching Transients 2 Part 1B #4	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCFH 403	Voltage Switching Transients 2 Part 1B #5	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCFH 403	Voltage Switching Transients 2 Part 2A	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCFH 403	Voltage Switching Transients 2 Part 2B	Perform all TCFH 403 tests on UUT (All Part 1A, 1B, 2A,& 2B)
TCFH 501	Power Line Disconnection	Requires disconnection of AC power lines during testing

Table 6: Section Coverage Table - Power Group – TCFH

TEST SVF	DESCRIPTION	COMMENTS
SVF 101	Steady-State Voltage and Frequency	
SVF 102	Voltage Transients	High voltage spikes up to 160VAC, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVF 102	Voltage Transients - Transformer	High voltage spikes up to 160VAC, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVF 103	Voltage Modulation	
SVF 104	Voltage Spikes	Requires External Spike Generator with 1000V pos/neg capability
SVF 105	Current Distortion	Requires Spectrum Analyzer and CTs to monitor UUT
SVF 106	Voltage Distortion 1 #1	Requires adjustable full-wave bridge rectifier load, also run Endurance Test for proper UUT type (#2 or #3)
SVF 106	Voltage Distortion 1 #2 - Endurance with motor	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3)
SVF 106	Voltage Distortion 1 #3 - Endurance w/o motor	Requires adjustable full-wave bridge rectifier load, for UUT without motors - use appropriate Test Sequence (#2 or #3)
SVF 107	Voltage Distortion 2	Requires Signal Generator and a coupling transformer
SVF 108	Voltage Distortion Transients	Requires adjustable full-wave bridge rectifier load
SVF 109	Inrush Current	Requires measurement equipment to measure inrush currents May require special input cabling for impedance requirements
SVF 110	Frequency Variations	
SVF 111	Frequency Modulation	
SVF 112	Voltage DC Content	Requires DC Power Supply to fully test UUT
SVF 113	Voltage Modulation due to Equipment	May require special input cabling for impedance requirements
SVF 114	Voltage Spike due to Equip Load Switch	Requires contactor/relay switching between AC Source and UUT
SVF 201	Steady-state Voltage and Frequency	
SVF 202	Voltage Transients - Split	High voltage spikes up to 180VAC, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVF 202	Voltage Transients - Transformer	High voltage spikes up to 180VAC, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVF 203	Voltage Modulation	
SVF 301	Steady-state Voltage and Frequency	
SVF 302	Voltage Distortion 1 #1	Requires adjustable full-wave bridge rectifier load, also run Endurance Test for proper UUT type (#2 or #3)

TEST SVF	DESCRIPTION	COMMENTS
SVF 302	Voltage Distortion 1 #2 - Endurance with motor	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3)
SVF 302	Voltage Distortion 1 #3 - Endurance w/o motor	Requires adjustable full-wave bridge rectifier load, for UUT without motors - use appropriate Test Sequence (#2 or #3)
SVF 303	Voltage Distortion 2	Requires Signal Generator and a coupling transformer
SVF 304	Voltage Distortion Transients	Requires adjustable full-wave bridge rectifier load
SVF 305	Inrush Current	May require special input cabling for impedance requirements
SVF 306	Frequency Variations	
SVF 307	Voltage Modulation due to Equipment	May require special input cabling for impedance requirements
SVF 401	Transparency Time	
SVF 402	Voltage Switching Transients 1 #1	Perform all SVF 402 tests on UUT (#1 & #2)
SVF 402	Voltage Switching Transients 1 #2	Perform all SVF 402 tests on UUT (#1 & #2)
SVF 403	Voltage Switching Transients 2 Part 1A #1	Perform all SVF 403 tests on UUT (All Part 1A, 1B, & 2)
SVF 403	Voltage Switching Transients 2 Part 1A #2	Perform all SVF 403 tests on UUT (All Part 1A, 1B, & 2)
SVF 403	Voltage Switching Transients 2 Part 1A #3	Perform all SVF 403 tests on UUT (All Part 1A, 1B, & 2)
SVF 403	Voltage Switching Transients 2 Part 1A #4	Perform all SVF 403 tests on UUT (All Part 1A, 1B, & 2)
SVF 403	Voltage Switching Transients 2 Part 1A #5	Perform all SVF 403 tests on UUT (All Part 1A, 1B, & 2)
SVF 403	Voltage Switching Transients 2 Part 1A #6	Perform all SVF 403 tests on UUT (All Part 1A, 1B, & 2)
SVF 403	Voltage Switching Transients 2 Part 1A #7	Perform all SVF 403 tests on UUT (All Part 1A, 1B, & 2)
SVF 403	Voltage Switching Transients 2 Part 1A #8	Perform all SVF 403 tests on UUT (All Part 1A, 1B, & 2)
SVF 403	Voltage Switching Transients 2 Part 1B #1	Perform all SVF 403 tests on UUT (All Part 1A, 1B, & 2)
SVF 403	Voltage Switching Transients 2 Part 1B #2	Perform all SVF 403 tests on UUT (All Part 1A, 1B, & 2)
SVF 403	Voltage Switching Transients 2 Part 1B #3	Perform all SVF 403 tests on UUT (All Part 1A, 1B, & 2)
SVF 403	Voltage Switching Transients 2 Part 1B #4	Perform all SVF 403 tests on UUT (All Part 1A, 1B, & 2)
SVF 403	Voltage Switching Transients Part 2 #1	Perform all SVF 403 tests on UUT (All Part 1A, 1B, & 2)
SVF 403	Voltage Switching Transients Part 2 #2	Perform all SVF 403 tests on UUT (All Part 1A, 1B, & 2)
SVF 404	Voltage Switching Transients w/Freq Change	
SVF 501	Power Line Disconnection	Requires disconnection of AC power lines during testing
SCF 204	Frequency Transients for SVF	SCF 204 Test specifically for SVF Equipment

Table 7: Section Coverage Table - Power Group – SVF

TEST SVFH	DESCRIPTION	COMMENTS
SVFH 101	Steady-State Voltage and Frequency - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 101	Steady-State Voltage and Frequency - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 102	Voltage Transients - Xfmr	High voltage spikes up to 324VAC, requires "Transformer" AC Source capability, use either "Xfmr" or "Split&Xfmr"
SVFH 102	Voltage Transients - Split & Xfmr	High voltage spikes up to 324VAC, requires "Split&Xfmr" AC Source capability, use either "Xfmr" or "Split&Xfmr"
SVFH 103	Voltage Modulation - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 103	Voltage Modulation - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 104	Voltage Spikes - Split	Requires External Spike Generator with 1000V pos/neg capability, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 104	Voltage Spikes - Xfmr	Requires External Spike Generator with 1000V pos/neg capability, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 105	Current Distortion - Split	Requires Spectrum Analyzer and CTs to monitor UUT, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 105	Current Distortion - Xfmr	Requires Spectrum Analyzer and CTs to monitor UUT, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 106	Voltage Distortion 1 #1 - Split	Requires adjustable full-wave bridge rectifier load, also run Endurance Test for proper UUT type (#2 or #3), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 106	Voltage Distortion 1 #2 - Endurance with motor - Split	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 106	Voltage Distortion 1 #3 - Endurance w/o motor - Split	Requires adjustable full-wave bridge rectifier load, for UUT without motors - use appropriate Test Sequence (#2 or #3), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 106	Voltage Distortion 1 #1 - Xfmr	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 106	Voltage Distortion 1 #2 - Endurance with motor - Xfmr	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 106	Voltage Distortion 1 #3 - Endurance w/o motor - Xfmr	Requires adjustable full-wave bridge rectifier load, for UUT without motors - use appropriate Test Sequence (#2 or #3), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 107	Voltage Distortion 2 - Split	Requires Signal Generator and a coupling transformer, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"

TEST SVFH	DESCRIPTION	COMMENTS
SVFH 107	Voltage Distortion 2 - Xfmr	Requires Signal Generator and a coupling transformer, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 108	Voltage Distortion Transients - Split	Requires adjustable full-wave bridge rectifier load, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 108	Voltage Distortion Transients - Xfmr	Requires adjustable full-wave bridge rectifier load, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 109	Inrush Current - Split	Requires measurement equipment to measure inrush currents May require special input cabling for impedance requirements Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 109	Inrush Current - Xfmr	Requires measurement equipment to measure inrush currents May require special input cabling for impedance requirements Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 110	Frequency Variations - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 110	Frequency Variations - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 111	Frequency Modulation - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 111	Frequency Modulation - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 112	Voltage DC Content - Split	Requires DC Power Supply to fully test UUT, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 112	Voltage DC Content - Xfmr	Requires DC Power Supply to fully test UUT, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 113	Voltage Modulation due to Equipment - Split	May require special input cabling for impedance requirements, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 113	Voltage Modulation due to Equipment - Xfmr	May require special input cabling for impedance requirements, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 114	Voltage Spike due to Equip Load Switch - Split	Requires contactor/relay switching between AC Source and UUT, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 114	Voltage Spike due to Equip Load Switch - Xfmr	Requires contactor/relay switching between AC Source and UUT, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 201	Steady-state Voltage and Frequency - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 201	Steady-state Voltage and Frequency - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 202	Voltage Transients - Xfmr	High voltage spikes up to 360VAC, requires "Transformer" AC Source capability, use either "Xfmr" or "Split&Xfmr"
SVFH 202	Voltage Transients - Split & Xfmr	High voltage spikes up to 360VAC, requires "Split&Xfmr" AC Source capability, use either "Xfmr" or "Split&Xfmr"
SVFH 203	Voltage Modulation - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 203	Voltage Modulation - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"

TEST SVFH	DESCRIPTION	COMMENTS
SVFH 301	Steady-state Voltage and Frequency - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 301	Steady-state Voltage and Frequency - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 302	Voltage Distortion 1 #1 - Split	Requires adjustable full-wave bridge rectifier load, also run Endurance Test for proper UUT type (#2 or #3), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 302	Voltage Distortion 1 #2 - Endurance with motor - Split	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 302	Voltage Distortion 1 #3 - Endurance w/o motor - Split	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 302	Voltage Distortion 1 #1 - Xfmr	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 302	Voltage Distortion 1 #2 - Endurance with motor - Xfmr	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 302	Voltage Distortion 1 #3 - Endurance w/o motor - Xfmr	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 303	Voltage Distortion 2 - Split	Requires Signal Generator and a coupling transformer, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 303	Voltage Distortion 2 - Xfmr	Requires Signal Generator and a coupling transformer, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 304	Voltage Distortion Transients - Split	Requires adjustable full-wave bridge rectifier load, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 304	Voltage Distortion Transients - Xfmr	Requires adjustable full-wave bridge rectifier load, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 305	Inrush Current - Split	May require special input cabling for impedance requirements, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 305	Inrush Current - Xfmr	May require special input cabling for impedance requirements, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 306	Frequency Variations - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 306	Frequency Variations - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 307	Voltage Modulation due to Equipment - Split	May require special input cabling for impedance requirements, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 307	Voltage Modulation due to Equipment - Xfmr	May require special input cabling for impedance requirements, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"

TEST SVFH	DESCRIPTION	COMMENTS
SVFH 401	Transparency Time - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 401	Transparency Time - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 402	Voltage Switching Transients 1 #1 - Split	Perform all SVFH 402 tests on UUT (#1 & #2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 402	Voltage Switching Transients 1 #2 - Split	Perform all SVFH 402 tests on UUT (#1 & #2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 402	Voltage Switching Transients 1 #1 - Xfmr	Perform all SVFH 402 tests on UUT (#1 & #2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 402	Voltage Switching Transients 1 #2 - Xfmr	Perform all SVFH 402 tests on UUT (#1 & #2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 Part 1A #1 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 Part 1A #2 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 Part 1A #3 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 Part 1A #4 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 Part 1A #5 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 Part 1A #6 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 Part 1A #7 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 Part 1A #8 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 Part 1A #1 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 Part 1A #2 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 Part 1A #3 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 Part 1A #4 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 Part 1A #5 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 Part 1A #6 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"

TEST SVFH	DESCRIPTION	COMMENTS
SVFH 403	Voltage Switching Transients 2 Part 1A #7 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 Part 1A #8 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients Part 1B #1 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients Part 1B #2 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients Part 1B #3 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients Part 1B #4 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 1B #1 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 1B #2 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 1B #3 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 1B #4 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 #1 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 #2 - Split	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 #1 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 403	Voltage Switching Transients 2 #2 - Xfmr	Perform all SVFH 403 tests on UUT (All Part 1A, 1B, & 2), requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 404	Voltage Switching Transients w/Freq Change - Split	Requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 404	Voltage Switching Transients w/Freq Change - Xfmr	Requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SVFH 501	SVFH 501 Power Line Disconnection - Split	Requires disconnection of AC power lines during testing, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SVFH 501	SVFH 501 Power Line Disconnection - Xfmr	Requires disconnection of AC power lines during testing, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"
SCFH 204	SCFH 204 Frequency Transients for SVFH - Split	SCFH 204 Test specifically for SVFH Equipment, requires "Split Phase" AC Source capability, use either "Split" or "Xfmr"
SCFH 204	SCFH 204 Frequency Transients for SVFH - Xfmr	SCFH 204 Test specifically for SVFH Equipment, requires "Transformer" AC Source capability, use either "Split" or "Xfmr"

Table 8: Section Coverage Table - Power Group – SVFH

TEST TVF	DESCRIPTION	COMMENTS
TVF 101	Steady-State Voltage and Frequency	
TVF 102	Voltage Transients	High voltage spikes up to 160VAC, requires "Transformer" AC Source capability
TVF 103	Voltage Modulation	
TVF 104	Voltage Spikes	Requires External Spike Generator with 1000V pos/neg capability
TVF 105	Current Distortion	Requires Spectrum Analyzer and CTs to monitor UUT
TVF 106	Voltage Distortion 1 #1	Requires adjustable full-wave bridge rectifier load, also run Endurance Test for proper UUT type (#2 or #3)
TVF 106	Voltage Distortion 1 #2 - Endurance with motor	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3)
TVF 106	Voltage Distortion 1 #3 - Endurance w/o motor	Requires adjustable full-wave bridge rectifier load, for UUT without motors - use appropriate Test Sequence (#2 or #3)
TVF 107	Voltage Distortion 2	Requires Signal Generator and a coupling transformer
TVF 108	Voltage Distortion Transients	Requires adjustable full-wave bridge rectifier load
TVF 109	Inrush Current	Requires measurement equipment to measure inrush currents May require special input cabling for impedance requirements
TVF 110	Frequency Variations	
TVF 111	Frequency Modulation	
TVF 112	Voltage DC Content	Requires DC Power Supply to fully test UUT
TVF 113	Voltage Modulation due to Equipment	May require special input cabling for impedance requirements
TVF 114	Voltage Spike due to Equip Load Switch	Requires contactor/relay switching between AC Source and UUT
TVF 115	Voltage Unbalance Transient	
TVF 201	Steady-state Voltage and Frequency	
TVF 202	Voltage Transients	High voltage spikes up to 180VAC, requires "Transformer" AC Source capability
TVF 203	Voltage Modulation	
TVF 301	Steady-state Voltage and Frequency	
TVF 302	Voltage Distortion 1 #1	Requires adjustable full-wave bridge rectifier load, also run Endurance Test for proper UUT type (#2 or #3)
TVF 302	Voltage Distortion 1 #2 - Endurance with motor	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3)
TVF 302	Voltage Distortion 1 #3 - Endurance w/o motor	Requires adjustable full-wave bridge rectifier load, for UUT without motors - use appropriate Test Sequence (#2 or #3)

TEST TVF	DESCRIPTION	COMMENTS
TVF 303	Voltage Distortion 2	Requires Signal Generator and a coupling transformer
TVF 304	Voltage Distortion Transients	Requires adjustable full-wave bridge rectifier load
TVF 305	Inrush Current	May require special input cabling for impedance requirements
TVF 306	Frequency Variations	
TVF 307	Voltage Modulation due to Equipment	May require special input cabling for impedance requirements
TVF 401	Transparency Time	
TVF 402	Voltage Switching Transients 1 #1	Perform all TVF 402 tests on UUT (#1 thru #6)
TVF 402	Voltage Switching Transients 1 #2	Perform all TVF 402 tests on UUT (#1 thru #6)
TVF 402	Voltage Switching Transients 1 #3	Perform all TVF 402 tests on UUT (#1 thru #6)
TVF 402	Voltage Switching Transients 1 #4	Perform all TVF 402 tests on UUT (#1 thru #6)
TVF 402	Voltage Switching Transients 1 #5	Perform all TVF 402 tests on UUT (#1 thru #6)
TVF 402	Voltage Switching Transients 1 #6	Perform all TVF 402 tests on UUT (#1 thru #6)
TVF 403	Voltage Switching Transients 2 Part 1A #1	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #2	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #3	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #4	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #5	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #6	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #7	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #8	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #9	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #10	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #11	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #12	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #13	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #14	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #15	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #16	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #17	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)

TEST TVF	DESCRIPTION	COMMENTS
TVF 403	Voltage Switching Transients 2 Part 1A #18	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #19	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1A #20	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1B #1	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1B #2	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1B #3	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1B #4	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1B #5	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1B #6	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1B #7	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1B #8	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1B #9	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 1B #10	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 2A	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 2B #1	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 403	Voltage Switching Transients 2 Part 2B #2	Perform all TVF 403 tests on UUT (All Part 1A, 1B, 2A, & 2B)
TVF 404	Voltage Switching Transients w/Freq Change	
TVF 501	Power Line Disconnection	Requires disconnection of AC power lines during testing
TCF 204	TCF 204 Frequency Transients for TVF	TCF 204 Test specifically for TVF Equipment

Table 9: Section Coverage Table - Power Group – TVF

TEST TVFH	DESCRIPTION	COMMENTS
TVFH 101	Steady-State Voltage and Frequency	Requires "Transformer" AC Source capability
TVFH 102	Voltage Transients	High voltage spikes up to 324VAC, requires "Transformer" AC Source capability
TVFH 103	Voltage Modulation	Requires "Transformer" AC Source capability
TVFH 104	Voltage Spikes	Requires External Spike Generator with 1000V pos/neg capability, requires "Transformer" AC Source capability
TVFH 105	Current Distortion	Requires Spectrum Analyzer and CTs to monitor UUT, requires "Transformer" AC Source capability
TVFH 106	Voltage Distortion 1 #1	Requires adjustable full-wave bridge rectifier load, also run Endurance Test for proper UUT type (#2 or #3), requires "Transformer" AC Source capability
TVFH 106	Voltage Distortion 1 #2 - Endurance with motor	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3), requires "Transformer" AC Source capability
TVFH 106	Voltage Distortion 1 #3 - Endurance w/o motor	Requires adjustable full-wave bridge rectifier load, for UUT without motors - use appropriate Test Sequence (#2 or #3), requires "Transformer" AC Source capability
TVFH 107	Voltage Distortion 2	Requires Signal Generator and a coupling transformer, requires "Transformer" AC Source capability
TVFH 108	Voltage Distortion Transients	Requires adjustable full-wave bridge rectifier load, requires "Transformer" AC Source capability
TVFH 109	Inrush Current	Requires measurement equipment to measure inrush currents May require special input cabling for impedance requirements Requires "Transformer" AC Source capability
TVFH 110	Frequency Variations	Requires "Transformer" AC Source capability
TVFH 111	Frequency Modulation	Requires "Transformer" AC Source capability
TVFH 112	Voltage DC Content	Requires DC Power Supply to fully test UUT, requires "Transformer" AC Source capability
TVFH 113	Voltage Modulation due to Equipment	May require special input cabling for impedance requirements, requires "Transformer" AC Source capability
TVFH 114	Voltage Spike due to Equip Load Switch	Requires contactor/relay switching between AC Source and UUT, requires "Transformer" AC Source capability
TVFH 115	Voltage Unbalance Transient	Requires "Transformer" AC Source capability
TVFH 201	Steady-state Voltage and Frequency	Requires "Transformer" AC Source capability
TVFH 202	Voltage Transients	High voltage spikes up to 360VAC, requires "Transformer" AC Source capability, requires "Transformer" AC Source capability
TVFH 203	Voltage Modulation	Requires "Transformer" AC Source capability
TVFH 301	Steady-state Voltage and Frequency	Requires "Transformer" AC Source capability

TEST TVFH	DESCRIPTION	COMMENTS
TVFH 302	Voltage Distortion 1 #1	Requires adjustable full-wave bridge rectifier load, also run Endurance Test for proper UUT type (#2 or #3), requires "Transformer" AC Source capability
TVFH 302	Voltage Distortion 1 #2 - Endurance with motor	Requires adjustable full-wave bridge rectifier load, for UUT with motors - use appropriate Test Sequence (#2 or #3), requires "Transformer" AC Source capability
TVFH 302	Voltage Distortion 1 #3 - Endurance w/o motor	Requires adjustable full-wave bridge rectifier load, for UUT without motors - use appropriate Test Sequence (#2 or #3), requires "Transformer" AC Source capability
TVFH 303	Voltage Distortion 2	Requires Signal Generator and a coupling transformer, requires "Transformer" AC Source capability
TVFH 304	Voltage Distortion Transients	Requires adjustable full-wave bridge rectifier load, requires "Transformer" AC Source capability
TVFH 305	Inrush Current	May require special input cabling for impedance requirements, requires "Transformer" AC Source capability
TVFH 306	Frequency Variations	Requires "Transformer" AC Source capability
TVFH 307	Voltage Modulation due to Equipment	May require special input cabling for impedance requirements, requires "Transformer" AC Source capability
TVFH 401	Transparency Time	Requires "Transformer" AC Source capability
TVFH 402	Voltage Switching Transients 1 #1	Perform all TVFH 402 tests on UUT (#1 thru #6), requires "Transformer" AC Source capability
TVFH 402	Voltage Switching Transients 1 #2	Perform all TVFH 402 tests on UUT (#1 thru #6), requires "Transformer" AC Source capability
TVFH 402	Voltage Switching Transients 1 #3	Perform all TVFH 402 tests on UUT (#1 thru #6), requires "Transformer" AC Source capability
TVFH 402	Voltage Switching Transients 1 #4	Perform all TVFH 402 tests on UUT (#1 thru #6), requires "Transformer" AC Source capability
TVFH 402	Voltage Switching Transients 1 #5	Perform all TVFH 402 tests on UUT (#1 thru #6), requires "Transformer" AC Source capability
TVFH 402	Voltage Switching Transients 1 #6	Perform all TVFH 402 tests on UUT (#1 thru #6), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #1	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #2	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #3	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #4	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #5	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability

TEST TVFH	DESCRIPTION	COMMENTS
TVFH 403	Voltage Switching Transients 2 Part 1A #6	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #7	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #8	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #9	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #10	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #11	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #12	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #13	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #14	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #15	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #16	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #17	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #18	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #19	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1A #20	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1B #1	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1B #2	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1B #3	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1B #4	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability

TEST TVFH	DESCRIPTION	COMMENTS
TVFH 403	Voltage Switching Transients 2 Part 1B #5	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1B #6	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1B #7	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1B #8	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1B #9	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 1B #10	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 2A	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 2B #1	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 403	Voltage Switching Transients 2 Part 2B #2	Perform all TVFH 403 tests on UUT (All Part 1A, 1B, 2A, & 2B), requires "Transformer" AC Source capability
TVFH 404	Voltage Switching Transients w/Freq Change	Requires "Transformer" AC Source capability
TVFH 501	Power Line Disconnection	Requires disconnection of AC power lines during testing, requires "Transformer" AC Source capability
TCFH 204	TCFH 204 Frequency Transients for TVFH	SCFH 204 Test specifically for SVFH Equipment, requires "Transformer" AC Source capability

Table 10: Section Coverage Table - Power Group - TVFH