

**IEEE Power & Energy Society
Surge Protective Devices Committee**

**Operations Manual
for
Non-Standards Business**

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1.0 Introduction

This document serves as a supplement to the IEEE PES Surge Protective Devices Committee (SPDC) Sponsor Policies and Procedures for Standards Development and the IEEE PES Surge Protective Devices Committee Working Group Policies and Procedures for Standards Development and covers non-standards related business of the SPDC. All standards development activity is governed by the above documents. This document outlines the organizational and business aspects of the SPDC.

2.0 Purpose

This manual defines the organization of the SPDC (the Committee), the scopes of the main committee (3.0), its subcommittees, (3.1 through 3.7), the subcommittees' working groups, and the duties of the main committee officers, standards coordinators, and subcommittee chairs. In addition, certain relevant operating procedures are defined. The identification of Subcommittees 3.1 through 3.7 and their descriptions is not intended to limit the Sponsor from adding Subcommittees as deemed necessary.

The Committee administrative year shall begin on January 1, the same as the administrative year for the IEEE PES. All appointed officers shall begin their terms on that date and serve for the prescribed term.

3.0 Scope of the Surge Protective Devices Committee (3.0)

The scope of the SPDC encompasses the Committee and its Subcommittees' technical responsibilities. Technical Subcommittees, in addition to their technical responsibilities, will have direct responsibility for remaining cognizant of social implications, the environment, aesthetics, increased employment, and other matters as related to the practice of electrical engineering. The SPDC is responsible for development and management of Standards, Recommended Practices and Guides relating to Surge Protective Devices (SPDs).

The SPDC is also commonly referred to as the "Sponsor", "Committee", "Main Committee", "3.0", and "MC 3.0".

Scope of MC 3.0:

Treatment of all matters in which the dominant factors are the design, construction, testing, safety, preparation of standards and guides, selection, application and integration of protective devices with auxiliary systems and equipment (such as shield wires, lightning masts, etc.) designed to prevent damage and/or outages to electrical power generation, transmission, distribution, utilization and communication systems, and associated equipment due to transient overvoltages, transient currents, temporary overvoltages and temporary fault currents. Excluded are interrupting devices with and without current-limiting ability. Included is treatment of the following:

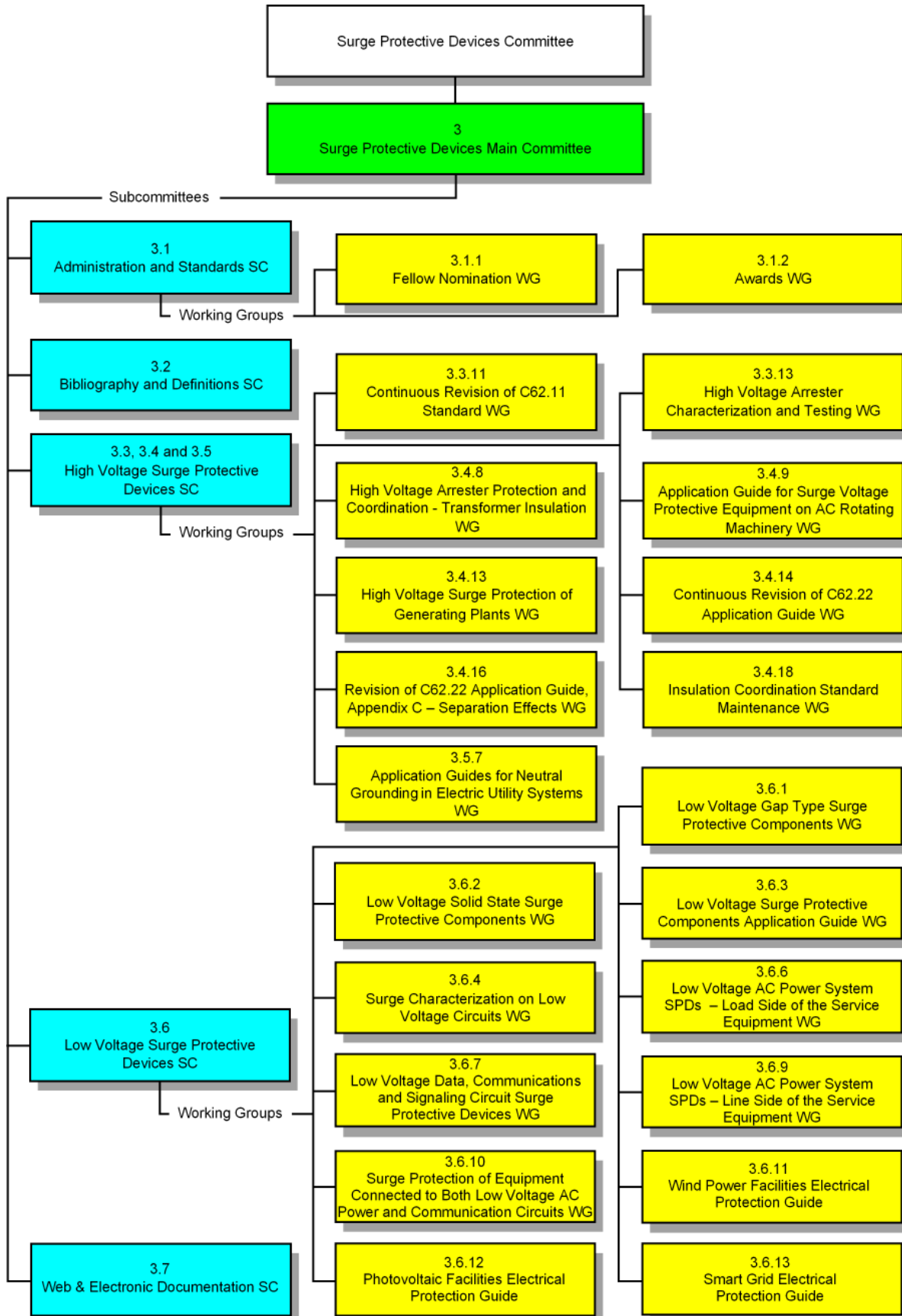
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- Over voltage surge protective devices (such as surge arresters, surge protection devices, protective gaps, and surge protective capacitors).
- Neutral grounding devices (such as grounding reactors and grounding transformers - jointly with the Transformer Committee - resistors and combinations thereof).
- Lightning and switching surge investigations jointly with the Transmission and Distribution Committee.
- Promotion of studies, technical papers, and discussions on performance of devices, seeking new contributions on improved recommended practices, updating bibliographies, standards and guides.
- Matters relating to surge protective devices specifically designed for application covered by other technical committees of IEEE (such as Power System Communication Committee) or societies (such as Industry Applications Society and Communications Society), may be treated jointly if emphasis is on the particular requirements of the application.
- SPDs employed in generation, transmission, distribution and utilization of electrical energy including the effects of such device on the system's operation.
- Treatment of the techniques and needs for coordination within, between, and among SPDs and their environment, to the extent that these factors affect protection functions or performance. Environment includes such items as insulation coordination and the application of system neutral grounding devices.
- Sponsorship and development (either alone or jointly with other technical committees and/or organizations) of standards, recommended practices, guidelines and policies as well as preparation of position papers and/or documents, technical conferences and/or sessions on matters related items above.
- Liaison and cooperation with other technical committees, societies, subcommittees and associations concerned with various aspects of items above.

The appointment of officers, progression of officers, and committee membership in the main committee is governed by the SPDC Sponsor Policies and Procedures for Standards Development.

The structure of the SPDC is shown in the figure below.

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3.1 Scope of the SPDC Subcommittees

3.1.1 Administration and Standards (A&S) Subcommittee (SC 3.1)

Scope of SC 3.1:

- Plan and coordinate the financial, meeting planning, and business activities of the main committee and its subcommittees.
- Oversee through the Bibliography & Definitions, High-Voltage Surge Protective Devices, Low-Voltage Surge Protective Devices and Web & Electronic Documentation Subcommittees the development and approval of committee-sponsored standards, recommended practices, guides, and position documents.
- Oversee the nomination and presentation of awards.
- Maintain liaison with other technical committees, societies, groups and associations.

The officers of the Committee shall serve in the same capacity as Chair, Vice Chair, and Secretary of SC 3.1.

Membership of A&S Subcommittee is comprised of the SPDC Officers, Subcommittee Chairs, immediate past SPDC Chair, the High-Voltage Standards Coordinator, and the Low-Voltage Standards Coordinator. Additional members may be appointed by the Committee Chair with approval of the current A&S Subcommittee membership.

The officers may invite others to attend A&S meetings, such as IEEE representatives, meeting hosts, etc., as the need occurs. Meetings of the A&S Subcommittee are considered closed sessions.

3.1.2 Bibliography and Definitions Subcommittee (SC 3.2)

Scope of SC 3.2:

- Preparation and distribution to the Committee membership of current references pertaining to the design, construction, testing, performance, safety, selection and application of SPDs designed to prevent damage to electrical power generation, transmission, distribution, utilization, and communication systems, and associated equipment due to transient overvoltages, temporary overvoltages and power frequency fault currents.
- Review definitions developed within the SPDC to determine compliance with existing terms in the SPDC Dictionary of Terms, IEEE Dictionary of Standard Terms and IEEE Standards Definitions Database, and coordinate this activity with other Standards organizations, including IEC, TIA, etc.
- Review new component symbols developed within the SPDC in digital format to determine graphic compliance with existing symbols in the IEEE “Graphic Symbols for Electrical and Electronics Diagrams” document and coordinate this activity with Subcommittee 3.7, and other Standards organizations, including IEC, TIA, etc. Develop and maintain related standards, recommended practices, and guides for such products.

- Coordinate with other technical committees, groups, societies, and associations as required.

The Chair of SC 3.2 shall be appointed by the Chair of the Committee with the approval of the SC 3.1 membership.

Membership of the Subcommittee shall consist of the appointed Subcommittee Chair, the Chair from each of the other Subcommittees, the Standards Coordinators and other members recommended by the Chair and approved by SPDC Chair – that is, other appointees due to their expertise or experience may also be appointed by the Subcommittee Chair with approval of the Committee Chair. The Subcommittee Chair may also allow the Committee officers as ex officio members. The Chair may appoint a Vice Chair and Secretary as needed.

Subcommittee membership is reviewed and reaffirmed yearly and is contingent upon meeting the qualifications listed above.

A member may discontinue his Subcommittee membership by sending a letter or electronic correspondence of resignation to the Subcommittee Chair. The Subcommittee Chair may elect to discontinue the membership of a continually inactive or non-participating member by sending written or electronic notification to the affected member. The returning of surveys and ballots and active contribution are the prime criteria for determining participation and continuation of Subcommittee membership.

3.1.3 High-Voltage Surge Protective Devices Subcommittees (SC 3.3, 3.4, 3.5)

Scope of SC 3.3, 3.4, 3.5:

- Treatment of all matters in which the dominant factors are the design, testing, construction, characteristics and application of devices to prevent damage to electrical power generation, transmission, distribution and utilization systems, rated at or above 1000 volts AC or 1200 volts DC, due to transient overvoltages.
- Treatment of all types and classes of surge arresters, protective gaps, and surge protective capacitors.
- Treatment of system neutral grounding and insulation coordination.
- Develop and maintain related standards, recommended practices, and guides for such products.
- Coordinate with other technical committees, groups, societies, and associations as required.
- Excluded is the application of such devices to industrial and commercial power systems.

The Chair of SC 3.3/3.4/3.5 shall be appointed by the Chair of the Committee with the approval of the SC 3.1 membership.

The members of a subcommittee are appointed at the discretion of the Chair of the Subcommittee upon receipt of an expression of interest and indication of ability to participate from the candidate. The Subcommittee Chair notifies the Committee Chair of his appointments.

Typically, the subcommittee members are composed of all the subcommittee working group and task force chairs. The subcommittee chair may also allow the Committee officers as ex officio members. Other appointees due to their expertise or experience may also be appointed by the subcommittee Chair. The High Voltage Standards Coordinator is a member of SC 3.3, 3.4 and 3.5.

Subcommittee membership is reviewed and reaffirmed yearly and is contingent upon meeting the qualifications listed above.

A member may discontinue his Subcommittee membership by sending a letter or electronic correspondence of resignation to the Subcommittee Chair. The Subcommittee Chair may elect to discontinue the membership of a continually inactive or non-participating member by sending written or electronic notification to the affected member. The returning of surveys and ballots and active contribution are the prime criteria for determining participation and continuation of Subcommittee membership.

The Chair may appoint a Vice Chair and Secretary as needed.

3.1.4 Low-Voltage Surge Protective Devices Subcommittee (SC 3.6)

Scope of SC 3.6:

- Treatment of all matters in which the dominant factors are the design, construction, characteristics, preparation of standards, selection and application of surge protection devices designed to prevent damage to circuits and associated equipment rated at less than 1000 Volts AC or 1200 Volts DC, due to transient overvoltages.
- Develop and maintain related standards, recommended practices and guides for such criteria.
- Coordinate with other technical committees, groups, societies and associations as required.

The Chair of SC 3.6 shall be appointed by the Chair of the Committee with the approval of the SC 3.1 membership.

The members of a subcommittee are appointed at the discretion of the Chair of the Subcommittee upon receipt of an expression of interest and indication of ability to participate from the candidate. The Subcommittee Chair notifies the Committee Chair of his appointments. Typically, the subcommittee members are composed of all the subcommittee working group and task force chairs. The subcommittee chair may also allow the Committee officers as ex officio members. Other appointees due to their expertise or experience may also be appointed by the subcommittee Chair. The Low Voltage Standards Coordinator is a member of SC 3.6.

Subcommittee membership is reviewed and reaffirmed yearly and is contingent upon meeting the qualifications listed above.

A member may discontinue his Subcommittee membership by sending a letter or electronic correspondence of resignation to the Subcommittee Chair. The Subcommittee Chair may elect to discontinue the membership of a continually inactive or non-participating member by sending written or electronic notification to the affected member. The returning of surveys and ballots and active contribution are the prime criteria for determining participation and continuation of Subcommittee membership.

The Chair may appoint a Vice Chair and Secretary as needed.

3.1.5 Web and Electronic Documentation Subcommittee (SC 3.7)

The purpose of the Web and Electronic Documentation Subcommittee is to provide members working in the SPD standards, technical development and information sharing processes with assistance in the use of IT (Information Technology) tools.

Scope of SC 3.7:

- Promoting the uniform use of modern technology in standards and member development
- Assisting in the electronic preparation and revision of SPDC standards
- Dealing with requests and problems related to using SPDC Web facilities
- Maintenance of the SPDC Web content and structure
- Develop and maintain related standards, recommended practices, and guides for such products.
- Coordinate with other technical committees, groups, societies, and associations as required.

The Chair of SC 3.7 shall be appointed by the Chair of the Committee with the approval of the SC 3.1 membership.

The members of a subcommittee are appointed at the discretion of the Chair of the Subcommittee upon receipt of an expression of interest and indication of ability to participate from the candidate. The Subcommittee Chair notifies the Committee Chair of his appointments. Typically, the subcommittee members are composed of all the subcommittee working group and task force chairs. The subcommittee chair may also allow the Committee officers as ex officio members. Other appointees due to their expertise or experience may also be appointed by the subcommittee Chair. The High Voltage and Low Voltage Standards Coordinators are members of SC 3.7.

Subcommittee membership is reviewed and reaffirmed yearly and is contingent upon meeting the qualifications listed above.

A member may discontinue his Subcommittee membership by sending a letter or electronic correspondence of resignation to the Subcommittee Chair. The Subcommittee Chair may elect to discontinue the membership of a continually inactive or non-participating member by sending written or electronic notification to the affected member. The returning of surveys and ballots

and active contribution are the prime criteria for determining participation and continuation of Subcommittee membership.

The Chair may appoint a Vice Chair and Secretary as needed.

3.2 Scope of the SPDC Working Groups

The scopes of the working groups shown below are subordinate to the scope of the subcommittee to which they belong. The number designation of the working group is used to establish to which committee and subcommittee a working group belongs. The working group number consists of a number (3, which indicates the SPDC Main Committee), followed by “.”, followed a number indicating the Subcommittee designation (1 for A&S, 2 for Bibliography and Definitions, 3 or 4 or 5 for High-Voltage, 6 for Low-Voltage, 7 for Web and Electronic Documentation), followed by “.”, and followed by a one- or two-digit number used to designate the working group.

3.2.1 Fellow Nomination Working Group (WG 3.1.1)

Scope of WG 3.1.1:

- Nominate and encourage nomination of SPDC members to the grade of Fellow
- Prepare endorsements, when warranted, for SPDC members in accordance with IEEE Fellow nomination procedures

The Chair of WG 3.1.1 shall be appointed by the Chair of the Committee with the approval of the SC 3.1 membership. The Chair is typically the most recently appointed SPDC Fellow.

The members of this working group are appointed at the discretion of the Chair of the working group upon receipt of an expression of interest and indication of ability to participate from the candidate. The Working Group Chair notifies the Committee Chair of his appointments. The subcommittee chair may also allow the Committee officers as ex officio members. Other appointees due to their expertise or experience may also be appointed by the Working Group Chair.

Working Group membership is reviewed and reaffirmed yearly and is contingent upon meeting the qualifications listed above.

A member may discontinue his Working Group membership by sending a letter or electronic correspondence of resignation to the Working Group Chair. The Working Group Chair may elect to discontinue the membership of a continually inactive or non-participating member by sending written or electronic notification to the affected member. The returning of surveys and ballots and active contribution are the prime criteria for determining participation and continuation of Working Group membership.

The Chair may appoint a Vice Chair and Secretary as needed.

WG 3.1.1 does not develop standards; therefore, it falls outside the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development. However, the working group is intended to follow the principles of the above document and use it as a guide for conducting business.

3.2.2 Awards Working Group (WG 3.1.2)

Scope of WG 3.1.2:

- Recommend nominations to the A&S (SC 3.1) Subcommittee for IEEE, PES, and SPDC Awards, such as:
 - IEEE Standard Medallion Award
 - Society and Field Awards
 - SPDC Prize Paper
 - SPDC Distinguished Service Awards
 - Working Group Recognition Award
 - Prepare and process ballots for the PES Prize Paper Award and Working Group Recognition Award.
 - Promote recognition for SPDC members.
 - Select a high interest paper for the Power Engineering Review. (To be established by A&S for specific projects only.)

The Chair of WG 3.1.2 shall be appointed by the Chair of the Committee with the approval of the SC 3.1 membership. The Chair is typically the immediate past committee chair.

The members of this working group are appointed at the discretion of the Chair of the working group upon receipt of an expression of interest and indication of ability to participate from the candidate. The Working Group Chair notifies the Committee Chair of his appointments. The subcommittee chair may also allow the Committee officers as ex officio members. Other appointees due to their expertise or experience may also be appointed by the Working Group Chair.

Working Group membership is reviewed and reaffirmed yearly and is contingent upon meeting the qualifications listed above.

A member may discontinue his Working Group membership by sending a letter or electronic correspondence of resignation to the Working Group Chair. The Working Group Chair may elect to discontinue the membership of a continually inactive or non-participating member by sending written or electronic notification to the affected member. The returning of surveys and ballots and active contribution are the prime criteria for determining participation and continuation of Working Group membership.

The Chair may appoint a Vice Chair and Secretary as needed.

WG 3.1.1 does not develop standards; therefore, it falls outside the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development. However, the working

group is intended to follow the principles of the above document and use it as a guide for conducting business.

3.2.3 Continuous Revision of C62.11 Standard Working Group (WG 3.3.11)

Scope of WG 3.3.11:

- Make recommendations to the High Voltage Surge Protective Devices Committee Subcommittee for revision of IEEE C62.11 “IEEE Standard for Metal-Oxide Surge Arresters for AC Power Circuits” or any subsequent MOV standard under the scope of the High Voltage Surge Protective Devices Committee Subcommittee.
- Monitor the C62.11 standard revisions under development within High Voltage Surge Protective Devices Committee Subcommittee.
- Monitor the activities of IEC/TC37, NEMA 8LA and any other organization developing metal-oxide arrester standards and attempt to resolve differences that may occur between their activities and IEEE C62.11.

WG 3.3.11 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.4 High Voltage Arrester Protection and Coordination - Transformer Insulation Working Group (WG 3.4.8)

Scope of WG 3.4.8:

- Provide liaison representation through the Working Group Chair to the Working Group on Revision of Dielectric Tests Subcommittee of the IEEE Transformer Committee.
- Solicit and evaluate comments in writing from High Voltage Surge Protective Devices Committee members on new proposals and guides in recommended practices in the area of transformer protection.
- Formulate a consensus and guidance for the liaison representative to the Transformer Working Group.
- Prepare and recommend to Working Group 3.4.14 for IEEE C62.22 in the transformer area
- Prepare and recommend to Working Group 3.4.14 for IEEE C62.22 clauses on ‘Transformer protection, step-by-step procedures’ (currently 5.2) and ‘Special considerations for protection of transformers’ (currently 5.3)
- Coordinating with 3.4.18 and 3.4.16, and also with C62.82.2

WG 3.4.8 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.5 Application Guide for Surge Voltage Protective Equipment on AC Rotating Machinery Working Group (WG 3.4.9)

Scope of WG 3.4.9:

- Investigate past and present publications and practices in the application of surge voltage protection to AC rotating machinery.
- Integrate and consolidate the knowledge on the subject.
- Prepare a suitable industry guide for the application of protective devices in the protection of AC rotating machinery, including integrally connected components, against surge voltages.
- Review the existing IEEE C62.21 document for errors and make changes as required, make additions, and update and improve this document

WG 3.4.9 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.6 High Voltage Surge Protection of Generating Plants Working Group (WG 3.4.13)

Scope of WG 3.4.13:

This group covers surges entering an electric generating plant via transmission and distribution lines and methods to reduce them; methods of protecting indoor and outdoor equipment, controls and communication systems within the plant switchyard, the plant proper and ancillary facilities within the premises such as fuel, ash, water, cooling, weather and warning systems, against direct strokes, incoming and internally generated surges. Further, the group is to review the existing IEEE C62.23 document for errors and make changes as required, make additions, and update and improve this document.

WG 3.4.13 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.7 Continuous Revision of C62.22 Application Guide Working Group (WG 3.4.14)

Scope of WG 3.4.14:

- Make recommendations for revisions to C62.22, “Guide for Application of Metal-Oxide Surge Arresters for Alternating Current Systems.”
- Monitor the application recommendations under development within the High Voltage Surge Protective Devices Subcommittee.
- Coordinate surge protection application with other IEEE Societies, Groups or Technical committees where appropriate.
- Monitor the activities of IEC TC37 as they apply to changes or additions to IEC 60099-5, “Surge arresters - Part 5: Selection and application recommendations” and attempt to resolve differences that may occur between their activities in C62.22.

- Collect, assemble, and organize input from all appropriate High Voltage Surge Protective Devices Committee Subcommittee Working Groups into a comprehensive guide for the application of metal oxide arresters.

WG 3.4.14 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.8 Revision of C62.22 Application Guide Annex C – Separation Effects Working Group (WG 3.4.16)

Scope of WG 3.4.16:

- Survey various methods to determine separation effects.
- Review and evaluate the various methods.
- Develop an improved simplified method.
- Prepare and recommend to Working Group 3.4.14 a revised Annex C for IEEE C62.22.

WG 3.4.16 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.9 Insulation Coordination Standard Maintenance Working Group (WG 3.4.18)

Scope of WG 3.4.18:

- Maintenance of IEEE Standard C62.82.1 “Standard for Insulation Coordination - Definitions, Principles, and Rules” and 1313.2 “Guide for the Application of Insulation Coordination” (Note C62.82.2 is in process and is intended to replace 1313.2.)
- Maintenance of IEEE Standards C62.82.1 and C62.82.2

WG 3.4.18 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.10 Application Guides for Neutral Grounding Devices in Electric Utility Systems Working Group (WG 3.5.7)

Scope of WG 3.5.7:

- Review existing Standard IEEE 62.92.1 "Part I - Application Guide for Neutral Grounding in Electric Utility Systems -Introduction" for errors and for additions, and recommend changes as required or desirable to correct, update, or improve this document. (Task Force 1)
- Review existing Standard IEEE 62.92.2 "Part II - Application Guide for Neutral Grounding in Electric Utility Systems - Synchronous Generator Systems" for errors and

for additions, and recommend changes as required or desirable to correct, update, or improve this document. (Task Force 2)

- Review existing Standard IEEE 62.92.3 "Part III - Application Guide for Neutral Grounding in Electric Utility Systems - Generator Auxiliary Systems" for errors and for additions, and recommend changes as required or desirable to correct, update, or improve this document. (Task Force 3)
- Review existing Standard IEEE 62.92.4 "Part IV - Application Guide for Neutral Grounding in Electric Utility Systems - Distribution" for errors and for additions, and recommend changes as required or desirable to correct, update, or improve this document. (Task Force 4)
- Review existing Standard IEEE 62.92.5 "Part V - Application Guide for Neutral Grounding in Electric Utility Systems - Transmission Systems and Subtransmission Systems" for errors and for additions, and recommend changes as required or desirable to correct, update, or improve this document. (Task Force 5)
- Develop Standard IEEE 62.92.6 "Part VI - Application Guide for Neutral Grounding in Electric Utility Systems - Distributed Generation. (Task Force 6)

WG 3.5.7 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.11 Low Voltage Gap Type Surge Protective Device Components Working Group (WG 3.6.1)

Scope of WG 3.6.1:

- Review available low voltage gap type surge protective device components.
- Develop and recommend standard methods for testing and rating these surge protective device components.
- Prepare sections defining the characteristics of low voltage gap type surge protective device components for incorporation into the Low Voltage Surge Protective Device Components Application Guide.

WG 3.6.1 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.12 Low Voltage Solid State Surge Protective Device Components Working Group (WG 3.6.2)

Scope of WG 3.6.2:

- Review available low voltage solid state surge protective device components.
- Develop and recommend standard methods for testing and rating these surge protective device components.

- Prepare sections defining the characteristics of low voltage solid state surge protective device components for incorporation into the Low Voltage Surge Protective Device Components Application Guide.

WG 3.6.2 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.13 Low Voltage Surge Protective Device Components Application Guide Working Group (WG 3.6.3)

Scope of WG 3.6.3:

- Develop a generalized guide for the application of low voltage surge protective device components.
- Coordinate and incorporate sections prepared by other groups into an overall guide stating the surge environment equipment vulnerability, and protective device components.

WG 3.6.3 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.14 Surge Characterization on Low Voltage Circuits Working Group (WG 3.6.4)

Scope of WG 3.6.4:

- Define the exposure of low voltage circuits to overvoltages and over-current surges.
- Organize existing data on the subject and characterize the surge environment
- Identify areas for further study and refer them to 3.6.
- Prepare a section on the exposure of low voltage circuits to surges for incorporation into the Low Voltage Surge Protective Devices Application Guide.
- Prepare a test procedure specification for evaluating surge withstand capability of equipment's connected to the environment developed above.

WG 3.6.4 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.15 Low Voltage AC Power System SPDs — Load Side of the Service Equipment (WG 3.6.6)

Scope of WG 3.6.6:

- Establish and maintain performance characteristics and application guidance for surge protective devices packaged to be connected to load side of the service equipment of low voltage AC power circuits for any combination of linear or nonlinear elements.
- Develop and recommend standard methods for testing and rating these devices.
- Coordinate and incorporate sections prepared by other groups for single element devices.

WG 3.6.6 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.16 Low Voltage Data, Communications and Signalling Circuit Surge Protective Devices Working Group (WG 3.6.7)

Scope of WG 3.6.7:

- Establish performance characteristics for surge protective devices packaged to be connected to low voltage communications and signaling circuits for multiple component combinations of linear or non-linear elements.
- Develop and recommend standard methods for testing and rating these devices.
- Prepare sections defining the characteristics and recommended application criteria for these devices for incorporation into the Low Voltage Surge Protective Devices Application Guide.
- Coordinate and incorporate sections prepared by other groups for single devices.

WG 3.6.7 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.17 Low Voltage AC Power System SPDs — Line Side of the Service Equipment (WG 3.6.9)

Scope of WG 3.6.9:

- Establish and maintain performance characteristics and application guidance for surge protective devices packaged to be connected between the secondary terminals of the service transformer and the line side of the service equipment of low voltage AC power circuits for any combination of linear or nonlinear elements.
- Develop and recommend standard methods for testing and rating these devices.
- Coordinate and incorporate sections prepared by other groups for single element devices.

WG 3.6.9 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.18 Surge Protection of Equipment Connected to Both Low Voltage AC Power and Communication Circuits Working Group (WG 3.6.10)

Scope of WG 3.6.10:

- Develop a guide for the application of multi-service (multi-port) surge protectors to protect equipment connected to ac power and communication circuits.
- The guide will consider and discuss coordination of the multi-service (multi-port) surge protective devices with other AC and communication circuit protection.
- The guide will be limited to premises served by 120/240 V ac power, with the neutral bonded to ground at the service entrance.
- The guide limits its scope to only addressing metallic communications conductors.

WG 3.6.10 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.19 Wind Power Facilities Electrical Protection Guide (WG 3.6.11)

Scope of WG 3.6.11:

Surge protection guidance for electrical equipment and systems with voltages of 1000 V(ac) and 1200 V(dc) or less within a wind power facility or wind generation structure. Included within this scope are communications and data acquisition equipment and associated circuitry and interfaces.

WG 3.6.11 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.20 Photovoltaic Facilities Electrical Protection Guide (WG 3.6.12)

Scope of WG 3.6.12:

Surge protection guidance for electrical equipment and systems with voltages of 1000 V(ac) and 1200 V(dc) or less within a photovoltaic facility or installation. Included within this scope are communications and data acquisition equipment and associated circuitry and interfaces.

WG 3.6.12 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.2.21 Smart Grid Electrical Protection Guide (WG 3.6.13)

Scope of WG 3.6.13:

Surge protection guidance for electrical equipment and systems with voltages of 1000 V(ac) and 1200 V(dc) or less for components of the Smart Grid. Included within this scope are communications and data acquisition equipment and associated circuitry and interfaces.

Additionally, there are cases, which involve smart grid equipment attaching or coupling to higher voltage circuits such as electric utility medium voltage distribution. This scope is not limited to providing guidance for such matters.

WG 3.6.13 develops standards; therefore, it falls within the jurisdiction of the SPDC Working Group Policies and Procedures for Standards Development which provides direction on the operation and membership of the working group.

3.3 Standard Coordinators

A Standards Coordinator will be appointed to each of the High-Voltage and Low-Voltage Subcommittees. The responsibilities of the Standards Coordinators fall under the jurisdiction of the SPDC Sponsor Policies and Procedures for Standards Development.

The High-Voltage Coordinator and Low-Voltage Coordinator are appointed by the Chair of the Committee at the recommendation of the High-Voltage and Low-Voltage Subcommittee Chairs, respectively, with the approval of the Administration and Standards Subcommittee.

The Standards Coordinators are members of SC 3.1, 3.2 and 3.7. The High Voltage Standards Coordinator is a member of SC 3.3, 3.4 and 3.5. The Low Voltage Standards Coordinator is a member of SC 3.6.

3.4 Liaison Representatives

The Committee will, at various times, wish to establish a close affiliation with other select bodies. On such occasion the Chair, with the concurrence of the A&S Subcommittee, will designate one or more members as official liaison from the SPDC. The person selected will have demonstrated an ability and willingness to serve in this capacity.

The member selected will normally serve for the term of the liaison requirement.

The member will submit a written report to the Chair and Secretary of activity resulting from the liaison assignment.

4.0 Procedures Not Previously Covered

4.1 Endorsement of Fellow Award

Any request for endorsement by the PES will be sent to the SPDC Chair by the Chair of the PES Fellows Committee for evaluation and recommendation. The nomination shall be tabled for the next A&S Subcommittee meeting. If the A&S Subcommittee decides to recommend endorsement, the Chair will submit to the Chair of the PES Fellows Committee a brief summary of the professional accomplishments of the candidate that are judged to be of such distinction as to warrant the member's evaluation to the grade of Fellow.

4.2 Evaluation and Presentation of Technical Papers

4.2.1 Responsibility for Evaluation of Technical Papers

The responsibility for all matters related to the evaluation of technical papers and their presentation at the various IEEE general meetings and conferences throughout the year resides with the SPDC Vice Chair.

4.2.2 PES Transactions

The SPDC Vice Chair serves as the editorial board member (editor) for transaction paper review. It is preferable that the SPDC Vice Chair designates a member to serve this function.

4.2.3 Other Technical Papers

The SPDC Vice Chair is responsible for the review of PES Proceedings papers (abstracts and papers), panel session and special educational session summaries, and other IEEE Conference papers. The SPDC Vice Chair may draw upon the expertise of the committee members for paper review. The Vice Chair may designate a member to serve as a review coordinator for a conference.

4.2.4 Technical Paper Review Procedure

Copies of each submitted transactions paper manuscript are sent by PES Special Activities to the PES Transactions Editor-in-Chief. The Editor-in-Chief logs the papers and sends them, along with the proper review forms to the appropriate committee editor for review. The editor selects at least three reviewers for each paper that have appropriate personal expertise (or access to another reviewer who does) to insure an adequate technical review. The editor sends each selected reviewer a copy of the paper and two copies of the review form. The reviewer may either personally review the paper, or have it reviewed by another IEEE member who is an authority on the subject. Upon completion of the review, the copies of the review forms are completed by the reviewer, regardless of who actually performed the review. Five unidentified copies of the reviewer's comments and suggestions are attached to the form. One completed copy of the form and the attachments are returned to the editor. The other copy of the form and a copy of the comments and suggestions are retained by the reviewer. Upon receipt of all reviews of a paper, the editor completes the form "Review Summary," and attaches the anonymous copies of the reviewers' comments and suggestions. The Editor-in-Chief makes the final determination of the acceptability or rejection of the paper, signs the "Review Summary," keeps one copy for filing and forwards the other along to the Manager, PES Special Activities at IEEE headquarters.

Any paper designated by the reviewers as a possible prize paper is referred to the Chair of the Recognition and Awards Subcommittee.

4.2.5 Technical Paper Presentations

The SPDC Vice Chair serves as a Technical Committee Program Chair (TCPC) for all IEEE general meetings and conferences. This function includes the paper review of Clause 4.2.4 and

scheduling and conducting of technical and panel sessions at these meetings. The SPDC Vice Chair may designate a member to serve as TCPC for each meeting. TCPC may designate session chair for each session.

4.3 Generation of IEEE Standards

The IEEE Standards Association (IEEE-SA) defines the procedures to be used in the development of a standard, recommended practice or guide in a series of documents that are subject to continual updating and revision.

Members responsible for the preparation of a standard, recommended practice or guide are charged with assuring conformance with the latest revisions of the rules and requirements defined in the IEEE-SA Standards Board Operations Manual, the IEEE-SA Standards Board Bylaws, and the following documents:

[Project Authorizations Request \(PAR\) Form](#)
[IEEE-SA Standards Board Working Guide for Submittal of Proposed IEEE Standards](#)
[IEEE-SA Copyright Policy](#)
[IEEE Standards Style Manual](#)
[IEEE-SA Metric Implementation Plan](#)
[What you need to know about IEEE Standards and the Law.](#)
[What you need to know about IEEE Standards and Indemnification.](#)

These documents may be found on the IEEE Standards Association Documentation about the IEEE Standards Process webpage.

4.4 Balloting Group for a Standard

For approval of proposed standards, the Committee shall form a balloting group. This group shall be formed using the invitation process in accordance with the IEEE-SA Standards Board Operations Manual.

Annex A – Dissolved, Retired and Tables Working Groups

3.1.3 Safety

Formed: May 78' Amended:

1. Review standards and guides that may affect the safe installation, application or operation of surge protective devices.
2. Establish liaison with other activities formulating pertinent standards and guides.
3. Make recommendations to A&S concerning the need for standards or guides.

3.1.4 Editorial Review of ANSI Standard and Guides

Formed: May '83 Amended:

1. The Working Group shall be composed of:
A Chair designated by the A&S Subcommittee, the head of IEEE delegation to ANSI C62, Chair of Working Group 3.3.12 and 3.4.14, Chair of 3.2 Bibliography Subcommittee, and Chair of the Working Group for which a standard or guide or the revision of a standard or guide is being reviewed.
2. Review all C62 standards and guides or the revision of a standard or guide for proper language and adherence to the IEEE Standards Style Manual prior to SPDC ballot.
3. Send all final revisions to the SPDC Vice-Chair.

3.3.1 Protective Characteristics of Gaps

Formed: Apr. '62 Amended: May '70 Dissolved Oct. '73

1. To review existing data on typical protective gaps associated with system voltages above 100 kV.
2. To investigate the characteristics of simple gap configurations to be used as a reference standard at the higher voltages, considering the effects of spacing, wave shape, proximity to other objects, test circuits.
3. To prepare a report on the characteristics of gaps.

3.3.2 Surge Arrester Switching Surge Protective Characteristics

Formed: Apr. '63 Amended: Dissolved May '71

1. To develop tests and testing methods required to demonstrate the protective response of surge arresters to switching surge voltages and to coordinate with NEMA in outlining possible tests.

* Combined with Working Group 3.3.4 to form Working Group 3.3.8

3.3.3 Surge Arrester Contamination Performance and Durability

Formed: Apr. '64 Amended: Dissolved Oct. '72

1. To determine the problem of contamination on the performance and durability of surge arresters.
2. To work with NEMA in outlining possible tests for determining the performance of surge arresters under contaminated surroundings.

3.3.4 Revision of Surge Arrester Durability Characteristic Standards

Formed: Nov. '66 Amended: Dissolved May '71*

1. To review the adequacy and need for the following electrical durability tests in ANSI C62.1:
Section 1-7.4.1 High Current - Short Duration Test
Section 1-7.4.2 Low Current - Long Duration Test on Distribution Arresters
Section 1-7.5 Duty Cycle Tests
2. Following this review to recommend applicable revisions to the Standard

* Combined with Working Group 3.3.2 to form Working Group 3.3.8

3.3.5 Review of Pressure Relief Device Test Values

Formed: Oct. '68 Amended: Dissolved Mar '76

1. To make a field survey for the Surge Protective Devices Committee of the present and possible future pressure relief venting requirements for station and intermediate class arresters.
2. To submit the results and interpretations of the survey to the Chair of the IEEE delegation to the ANSI C62 after approval of the Surge Protective Devices Committee.
3. Review the difference in the area of pressure relief testing between ANSI C62.1 1970, NEMA Standard proposal I-15, 1969 and IEC 99-1 2nd edition 1970, and make recommendations for appropriate revisions.

3.3.6 Low Voltage Surge Protection Devices

Formed: May '70 Amended: Mar. '76 Dissolved Aug. '81
became 3.6

1. To review commercially available devices, other than ANSI Standard secondary arresters, which are used for low voltage system surge protection. Low voltage shall be defined as 600 volts or less.
2. To develop and recommend standard methods for testing and rating these devices.
3. Prepare application guides for commercially available low voltage surge protective devices.

3.3.6.1 Low Voltage Gas Tube Task Force

Formed: Amended: Dissolved

3.3.6.2 Low Voltage Air Gap Arresters Task Force

Formed: Amended: Dissolved

3.3.6.3 Varistor/Avalanche Diode Task Force

Formed: Amended: Dissolved

NOTE: Each task force to produce a test specification and application guide for its respective device. Working group to combine all application guides into a single overall document upon completion of task force effort.

3.3.7 Fault Withstand Requirements for Distribution Surge Arresters

Formed: Oct. '69 Amended: Dissolved Apr. '80

1. To make a field survey of the fault withstand requirements for distribution surge arresters.
2. To develop guidelines for terminology and definitions with reference to the subject of fault withstand characteristics of distribution surge arresters.
3. To develop guidelines for types of tests that could be used to properly evaluate the fault withstand characteristics of distribution surge arresters.
4. To obtain data on the failure rate, type and cause of and failure of distribution surge arresters.

3.3.9 Distribution Surge Arrester Lightning Discharge Current

Formed: Oct. '73 Amended: Dissolved Apr. '81

1. Develop a program to obtain statistical data of the shape, magnitude and frequency of current surges discharged through distribution surge arresters on modern distribution systems.
2. Determine the best and most economical method and instrumentation to obtain the data mentioned in (1) above.
3. Seek industry organizations willing to cooperate in a joint effort to obtain data over several years.
4. Analyze all data and propose new test standards if necessary.

3.3.12 Continuous Revision of C62.1

Formed: Oct. '83 Amended:

1. Make recommendations to the OPD Subcommittee for revision of ASC C62.1, "IEEE Standard for Surge Arresters for AC Power Circuits," and any subsequent standards under the scope of the OPD Subcommittee.
2. Monitor the C62.1 standard revisions under development within OPD.
3. Monitor the activities of IEC/TC37 as they apply to changes or additions to IEC #99.1 and of NEMA LA-1 and attempt to resolve differences that may occur between their activities and ASC C62.1.

3.3.8 Review of Intermediate and Station Arrester Durability and Protective Characteristics

Formed: May '71 Amended: Oct. '72, Feb. '75, Oct. '85

1. Develop tests and testing methods required to demonstrate the characteristics of metal oxide intermediate and station surge arresters assigned by the Subcommittee.
2. Coordinate with Working Group 3.3.10 on test tolerance equally applicable to all classes of arresters.
3. Provide guidance to Working Group 3.3.11 for inclusion of the above items in C62.11
4. Report current assignments following each Working Group meeting.

3.3.9 High Voltage Direct Current Surge Arresters

Formed: Oct. '88 Amended:

1. Develop terminology and definitions with reference to arresters applied on high-voltage direct current (HVDC) systems for overvoltage protection.
2. Develop design tests and testing methods required to demonstrate the characteristics important to the application of HVDC arresters.
3. Solicit and evaluate information from WG 3.4.6 "Overvoltage Protection of High-Voltage Direct Current Installations" regarding the objectives listed above.
4. Monitor the activities of IEC TC37 regarding these same objectives on HVDC arrester and attempt to resolve differences that may exist.
5. Provide guidance to ASC C62 for inclusion of HVDC design tests in their documents.

3.3.10 Review of Distribution Arrester Durability and Protective Characteristics

Formed: Feb. '75 Amended: Oct. '85

1. Develop tests and testing methods to demonstrate the characteristics of metal oxide and gapped silicon carbide distribution arresters as assigned by the Subcommittee.
2. Coordinate with Working Group 3.3.8 on test tolerances equally applicable to all classes of arresters.
3. Provide guidance to Working Group 3.3.11 and 3.3.12 for inclusion of the above items in C62.11 and C62.1, respectively.
4. Report current assignments following each Working Group meeting.

3.3.13 High Voltage Arrester Characterization and Testing Working Group

1. Develop tests and testing methods required to demonstrate the characteristics of metal oxide surge arresters assigned by the Subcommittee.
2. Provide guidance to Working Group 3.3.11 for inclusion of the above items in C62.11
3. Report current assignments following each Working Group meeting.

3.4.1 Voltage Rating Investigation for Application of Surge Arresters on Distribution Systems

Formed: Mar. '60 Amended: Dissolved Oct. '71

1. To investigate present system classification related to the degree of system grounding of distribution circuits.
2. To establish more realistic distribution circuit constants, expressed as either impedance or voltage ratios.
3. To establish a guide for the selection of distribution arrester ratings based upon these circuit constants rather than the present method of relying on experience alone.

3.4.2 Lightning Protection of Cable Connected Distribution Equipment

Formed: Apr. '63 Amended: Dissolved Sept. '80

1. To investigate the lightning protective practices for cable connected distribution equipment and determine the factors which influence the selection and location of surge arresters.

3.4.3 Safety

Formed: Apr. '65 Amended: Dissolved May '78
became 3.1.3

1. To explore the safety aspects of surge arresters and their use.
2. To make recommendations to SPDC and/or NEMA concerning the possibility of guides or standards for safety.

3.4.4 Surge Voltages in AC Power Circuits Rated 600 Volts and Less

Formed: May '66 Amended: Dissolved Aug. '81
became 3.6.4

1. Define the problem: Direct attention to the need of protecting certain types of load equipment against transient overvoltages in secondary power circuits. This involves a description of the types of load equipment which experience indicated to be susceptible to damage by such transients and the nature of the troubles typically experienced.
2. Organize available information. This requires consideration of the following aspects:
 - a. Characteristics of lightning surges which appear at branch circuit loads. This involves the behavior of strokes to primary and secondary distribution circuits; also strokes-to-each coupling with grounding electrodes.
 - b. Secondary and branch circuit resonance effects produced by lightning. Review the literature on the subject and consider the high frequency response of secondary circuits to step functions.
 - c. Switching transients - the effects on connected load of transients originating in the external distribution system and feedback disturbances caused by transients generated within a load circuit which in turn enter electrically adjacent loads.
3. Consideration of present protection methods and devices, their adequacy and possible need for improvement.
4. Preparation of a bibliography of relevant papers. Consideration shall be given to the feasibility of summarizing available data and presenting in a form convenient for application.
5. Stimulate interest leading to the preparation and presentation of papers under sponsorship of the SPDC.

3.4.5 Coordination of Surge Arresters and Current Limiting Fuses

Formed: Nov. '66 Amended: Dissolved Mar. '74

1. Determine factors affecting heavy energy switching surge discharges in arresters as related to current limiting interrupters in the range from 2400 to 34000 volts.
2. Prepare application guide.
3. Make recommendations for device characteristics to alleviate the problem.

3.4.7 Insulation Standards Activities

Formed: May '68 Amended: Dissolved Mar. '74

1. Review new releases of standardizing committees and abstract information pertinent to the design and application of surge protective devices.
2. Prepare a consensus of opinion of the experts of SPDC to appropriate questions submitted by representatives to standardizing groups.

3.4.12 Surge Protection of High Voltage Cable Connected Equipment

Formed: Nov. '72 Amended: Dissolved May' 85

1. To investigate the present practice of protecting cable connected equipment and equipment associated with gas insulated substations of 69 kV and higher.
2. To prepare a guide for the selection and application of surge arresters for protecting high voltage cable connected equipment and equipment associated with gas insulated substations.

3.4.17 Surge Arrester Protection of Capacitor Banks, Cables, Cable Connected Equipment, and Gas Insulated Substations

Formed: Sept. '85 Amended: Oct. 96 Dissolved: May 97

1. Review existing standards and literature pertaining to arrester protection of the title items.
2. Review, summarize, and evaluate protection practices which presently exist for the titled items.
3. Prepare a section(s) to be included in the metal oxide surge arrester application guide and if appropriate an IEEE committee paper(s) covering any of the above items.

3.4.6 Overvoltage Protection of High Voltage Direct Current Installations

Formed: Oct. '67 Amended: Sept. '85

1. Review activities concerning overvoltage protection of high-voltage DC installations.
2. Update the bibliography on literature concerned with overvoltages in high-voltage DC installations.
3. Determine protective device requirements which must be considered in the overvoltage protection of high voltage DC installations.
4. Summarize manufacturer and user tests on DC arresters.
5. Monitor activities of IEC TC37.

3.4.10 High Voltage AC System Surge Arrester Application Guide

Formed: May '71 Amended: Sept. '85

1. Prepare sections of a guide for the application of metal oxide arresters for the protection of HV and EHV AC systems. Some specific tasks will be handled (capacitor banks, GIS, distribution systems, separation distances, etc.) by other SPDC Working Groups.
2. Develop a USA consensus to guide the United States National Committee in its support of a parallel effort by the IEC TC37.

3.4.11 Surge Arrester Modeling Techniques

Formed: Oct. '71 Amended:

1. Develop techniques to represent surge arresters accurately for use in transient system studies. The models developed should be applicable to digital techniques, electronic and direct analog computers.

3.5.1 Part 1 - Application Guide for Neutral Grounding in Electric Utility Systems

Formed: May '83 Amended: Apr. '94 Dissolved: Apr. '94

1. Review existing Standard IEEE 62.92 (Parts I - V) for errors and for additions, and recommend changes as required or desirable to correct, update, or improve this document.

- 3.5.2 Part II - Application Guide for Neutral Grounding of Synchronous Generator Systems
Formed: May '83 Amended: Oct. '88 Dissolved Apr. '94
1. Update and broaden the part of IEEE Standard 143, that deals with neutral grounding of synchronous generator systems.
- 3.5.3 Part III - Application Guide for Neutral Grounding of Generator Auxiliary Systems
Formed: May '83 Amended: Oct. '88 Dissolved Apr. '94
1. Develop a grounding guide as an additional part of the IEEE Standard 143, that addresses neutral grounding of generator auxiliary systems.
- 3.5.4 Part IV - Application Guide for Neutral Grounding of Distribution Systems
Formed: May '83 Amended: Oct. '88 Dissolved Apr. '94
1. Develop a guide as an additional part of IEEE Standard 143, that addresses neutral grounding of distribution systems.
- 3.5.5 Part V - Application Guide for Neutral Grounding of Transmission and Sub-Transmission and Sub-Transmission Systems
Formed: May '83 Amended: Oct. '88 Dissolved Apr. '94
1. Update and broaden the part of IEEE Standard 143, that deals with neutral grounding of transmission systems and of subtransmission systems.
- 3.6.5 Surge Vulnerability of Components on Low Voltage Circuits
Formed: Aug. '81 Amended:
1. Define the vulnerability of components on low voltage circuits to over-current and overvoltage surges.
2. Organize existing data on the subject and prepare a data manual as an Appendix to the Low Voltage Surge Protective Devices Application Guide.