



ENTERGY TRANSMISSION STANDARDS SUBSTATIONS PURCHASE SPECIFICATION

Title: Station Service Voltage Transformers (SSVT) Specification	No. & Rev: SN1101 Rev 02	Effective: July 2021
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Rev. No	Revised Sections	Date	Rev. by	App. by
0	Original Issue, previously issued as PN1101, Renumbered and reissued as SN1101	Oct 2012	DS	MB
1	Reformatted, added EHV SSVTs	May 2018	DS	KB
2	Section 6 extensive revision, polymeric bushings, support stand	Jul 2021	DS	KB

PROPRIETARY AND CONFIDENTIAL INFORMATION

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1.0 INTRODUCTION

1.1 Purpose

Station Service Voltage Transformers are specifically designed with a secondary power winding sized to be used as a source of substation ac station service at locations where other normal sources are not readily available. This document specifies Entergy requirements for Station Service Voltage Transformers (SSVT) suitable for use as a source of station service in high voltage substations.

1.2 Scope

This purchase specification applies to station service voltage transformers used for single phase ac station service applications in Entergy substations 69 kV through 500 kV. Entergy standard AL1203 specifies standard common clauses applicable to the substation equipment and should be considered a part of this specification.

1.3 Changes for this revision

References updated

Section 6.1 revised to describe in detail the SSVT technical design requirements

Section 6.2 rearranged, added option to accept gas-filled SSVTs at 230 kV to 500 kV. Details added for oil-filled and gas-filled SSVTs, added support structure specification.

Section 6.2 revised to state that only polymeric housing will be accepted. Porcelain housing may be accepted on a specific project basis.

Attachments updated

1.4 Effective Date

All Station Service Voltage Transformers ordered after this document is approved shall follow this purchase specification.

1.5 Training & Awareness Requirements

This purchase specification principally impacts Substation Design and Asset Management. Personnel in these groups should individually review the standard and be aware of its contents and inform Supply Personnel as necessary.

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2.0 DEFINITIONS, TERMINOLOGY

See 2.0 of Entergy Std AL1203 for definitions of standard and common contract related terms.

Internal arc protection class I: A special transformer design with a feature that, during an internal line-to-ground arc test with the arc taking place at a location, which is technically the most probable, the debris of the transformer will be confined to a circle, centered at the transformer. The diameter of this circle is equal to the sum of twice the height of the transformer and the diameter of the transformer. (*IEEE C57.13.5*)

Internal arc protection class II: A special transformer design with a feature that, during an internal line-to-ground arc test with the arc taking place at a location, which is technically the most probable, will not fracture the insulator or housing of the transformer. (*IEEE C57.13.5*)

3.0 REFERENCE STANDARDS & DOCUMENTS

See 3.0 of Entergy Std AL1203, Standard Requirements, Substation Purchase Specification.

- 3.1. Entergy AL1203: Standard Requirements, Substation Purchase Specifications
- 3.2. Entergy AZ0202: Product Qualification Procedure
- 3.3. Entergy SG0102; Type II Insulating Oil Purchase Specification
- 3.4. ASTM D1275-06 Part B; Standard Test Method for Corrosive Sulfur in Electrical Insulating Oils
- 3.5. ASTM D2472: Standard Specification for Sulfur Hexafluoride
- 3.6. ASTM D3487; Standard Specification for Mineral Insulating Oil used in Electrical Apparatus.
- 3.7. IEEE Std C57.12.00: General Requirements for Liquid-Immersed Distribution, Power, and Regulating Transformers
- 3.8. IEEE Std C57.12.31: Standard for Pole-Mounted Equipment – Enclosure Integrity.
- 3.9. IEEE Std C57.12.90, IEEE Standard Test Code for Liquid-Immersed Distribution, Power, and Regulating Transformers.
- 3.10. IEEE Std C57.13: Standard Requirements for Instrument Transformers
- 3.11. IEEE Std C57.13.5, IEEE Standard of Performance and Test Requirements for Instrument Transformers of a Nominal System Voltage of 115 kV and Above

4.0 QUALIFICATION & QUALITY ASSURANCE

4.1 Qualification

See 4.1 of Entergy Std AL1203 for general requirements for qualification of bidders. The SSVT Manufacturer including its sub-suppliers of components shall be pre-qualified. In addition, the manufacturer shall provide the data required in Attachments SA1101-A2 for each rating of SSVT for qualification. The Purchase reserves the option to conduct a complete and thorough pre-award design review of the SSVT.

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4.2 Quality Assurance

See 4.2 of Entergy Std AL1203 for the manufacturer's QA programs, inspection & test, and schedule requirements.

4.3 Scope of Supply & Bid Requirements

4.3.1 Specific requirements including SSVT rating, quantity required and destination will be specified by Entergy in Attachment SN1101-A1, or the Purchase requisition.

4.3.2 The SSVT complete with all the accessories shall be supplied FOB destination. The Supplier's proposal shall include the cost, insurance, and freight for shipping and delivery of the equipment to the destination specified in the Attachment / purchase requisition.

4.3.3 The proposal shall include the prices as follows:

- a) SSVT cost including insurance and shipping
- b) SSVT support pedestal per 6.2.4
- c) Optional cost of Internal arc protection class I verification test for SSVT with porcelain insulator (when accepted by Entergy)
- d) Optional cost of Endurance chopped wave test of EHV SSVTs (oil-filled units)
- e) Optional cost of CT supplied on H0 bushing for secondary ground fault detection and protection per 6.2.5.1
- f) Optional cost of CT for mounting on the SSVT support structure for primary line to ground fault detection and protection per 6.2.5.2.

4.3.4 Alternative Design: The Bidder may propose for Entergy's consideration, evaluation and acceptance an alternative SSVT design and rating consisting of different insulation media provided the proposed design meets the intent of this specification.

4.3.5 The bid shall include Design test reports for the SSVT not previously supplied to Entergy. If the proposed SSVT design has been previously subjected to endurance chopped wave test (for oil-filled EHV units) and an internal arc protection classification test (for SSVTs with porcelain bushing), copies of these test results shall also be supplied.

4.3.6 Any and all exceptions to any specific paragraph or parts thereof in this specification must be stated in the Seller's proposal and must reference the appropriate paragraph or part number. It shall not be necessary for the Purchaser to examine the standard literature and documents of the Bidder to determine the existence and extent of any exceptions or deviations from this specification. Approval of exceptions by Entergy will be project specific only.

5.0 SERVICE CONDITIONS

Service conditions specified in 5.0 of Entergy Std AL1203 apply with the following exception.

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The operating temperature range of the SSVT shall be from - 40 °C to + 40 °C, and at a daily average ambient temperature not exceeding 30 °C.

6.0 DESIGN AND CONSTRUCTION

6.1 Design

6.1.1 The SSVT shall comply with the applicable requirements for inductive voltage transformers specified in IEEE Std. C57.13 and power transformers specified in IEEE Std C57.12.00 except as modified by this specification.

6.1.2 The SSVT shall be a single-phase 60 hertz, outdoor unit, suitable for line-to-ground connection, to supply single-phase ac load (or in a three-phase bank to supply three-phase loads) for station service.

6.1.3 Unless specified otherwise in the Attachment SN1101-A1 the voltage ratings of the SSVT shall be selected from the following table. The rated primary and the secondary winding voltages are at no load. The secondary winding shall be suitable for series, multiple or three-wire service.

Nominal System Voltage	Maximum System Voltage	BIL	SIL	Primary Winding Voltage	Secondary Winding Voltage	Marked Ratio
69 kV	72.5 kV	350 kV		40.25 kV	125/250 Volts	322/161 :1
115 kV	123 kV	550 kV		69 kV	125/250 Volts	552/276 :1
138 kV	145 kV	650 kV		80.5 kV	125/250 Volts	644/322 :1
161 kV	170 kV	750 kV		92 kV	125/250 Volts	736/368 :1
230 kV	245 kV	1050 kV		138 kV	125/250 Volts	1104/552 :1
345 kV	362 kV	1300 kV	975 kV	207 kV	125/250 Volts	1656/828 :1
500 kV	550 kV	1800 kV	1550 kV	287.5 kV	125/250 Volts	2300/1150 :1

For specific projects Entergy may specify other secondary winding voltages, such as 277 Volts, or 480 Volts in the Attachment SN1101-A1.

6.1.4 Temperature rise of the SSVT windings above the 30 °C daily average ambient shall not exceed the following limits.

	Oil-filled SSVT	Gas-filled SSVT
Average winding temperature rise, °C	65	85
Maximum Hottest spot winding temperature rise, °C	80	100
Top-oil temperature, °C	65	X
All internal Metallic parts, °C	80	80

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6.1.5 The SSVT shall be capable of operating at 115% of rated primary voltage at no load continuously, and at 105% of rated secondary voltage when supplying full load at 80% power factor, and 90% rated frequency. The kVA rating of the SSVT shall be as specified in the Attachment SN1101-A1 or the purchase requisition. Typically, 50 kVA or 100 kVA rating is specified by Entergy (see SN1101-A1 for specific requirement).

6.1.6 The SSVT shall be capable of withstanding without any damage for one second the thermal and mechanical stresses resulting from a short circuit on the secondary power and metering winding (if supplied) with maximum system voltage maintained on the primary terminal. The short-circuit current shall be calculated using the SSVT impedance only.

6.1.7 The SSVT shall be capable of withstanding 125% of its rated primary voltage for 60 seconds. The SSVT with a metering winding shall withstand 173% of its rated voltage for 60 seconds.

6.1.8 Metering windings are not required and shall be provided only when specifically requested in the Attachment SN1101-A1. When specified, the rated voltages of the primary and the metering winding shall be as follows. Accuracy of the metering winding shall be 0.6 W, X, Y, Z, and ZZ.

Nominal System Voltage	Rated Primary Winding	Secondary Metering Winding	
		Voltage	Marked ratio
69 kV	40,250 V	115/67.08 Volts	350 / 600:1
115 kV	69,000 V	115 / 69 Volts	600 / 1000:1
138 kV	80,500 V	115/67.08 Volts	700 / 1200:1
161 kV	92,000 V	115/65.71 Volts	800 / 1400:1
230 kV	138,000 V	115/69 Volts	1200 / 2000:1
345 kV	Metering winding not required for EHV		
500 kV	Metering winding not required for EHV		

6.1.9 Oil-filled EHV SSVTs shall be designed to withstand transients caused by the operation of a line disconnect switch located in its vicinity. The manufacturer shall provide a test report for the Endurance Chopped Wave test previously conducted on an SSVT of similar design to verify this capability.

6.1.10 Tolerances shall be as follows:

- a) Turns ratio of rated primary and rated secondary winding: 0.5%
- b) Impedance: 10%
- c) Total Losses: 6%

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6.2 Construction

6.2.1 General

6.2.1.1 The SSVT for HV application (69 kV to 230 kV) shall be oil-filled self-cooled (ONAN). SSVT for EHV application (345 kV to 500 kV) may be either oil or SF₆ gas filled self-cooled (ONAN or GNAN) unit.

6.2.1.2 The SSVT primary winding shall be copper and the secondary winding shall be either aluminum or copper.

6.2.1.3 The high voltage external insulator of the SSVT shall be hermetically sealed composite polymeric silicone rubber hollow insulator. Porcelain will not be accepted unless specifically approved by Entergy as an exception for the particular project.

The design of SSVT with porcelain insulator (when accepted by Entergy) shall satisfy the Internal Arc Protection class I at a minimum 30 kA internal arc current. The manufacturer shall verify the capability of the proposed SSVT by an actual test or supply a test report on a previously qualified SSVT of a similar design. In lieu of a test the manufacturer shall verify the SSVT capability by providing design documentation with all analysis pertaining to the internal pressure resulting from internal arc, distribution of mechanical stresses and pressure as well as appropriate design safety margins. The documentation shall include the pressure release rating, location, the maximum operating pressure and the response time of pressure relief device.

SSVT shall be provided with means such as a sudden pressure relay, a rupture plate / disc, or a valve to mitigate housing and insulator fracture.

6.2.1.4 Finish color of the bushing insulator shall be ANSI 70 light gray or equivalent. The insulator shall be free from cavities or other defects. For porcelain bushings (when accepted by Entergy) the glazing shall be free from blisters and burns, and be uniform in color.

6.2.1.5 The creep distance of the bushing insulator shall be as follows:

Maximum System Voltage	SSVT Rated Voltage	Minimum Creepage Distance
72.5 kV	40.250 kV	69 inches
123 kV	69 kV	115 inches
145 kV	80.5 kV	138 inches
170 kV	92 kV	161 inches
245 kV	138 kV	230 inches
362 kV	207 kV	345 inches
550 kV	287.5 kV	500 inches

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6.2.1.6 Primary winding HV terminal shall be a pad with four-holes drilled to NEMA spacing and shall be either stainless steel or tin plated copper. The primary winding neutral terminal shall be brought out of the SSVT tank through a 5 kV bushing and grounded externally to the tank with a removable copper strap or a stranded copper conductor.

6.2.1.7 The base tank and the expansion chamber or head of the SSVT shall preferably be constructed of corrosion-resistant marine grade aluminum or stainless steel.

6.2.1.8 The exterior of the base tank and the head, if made of steel, shall have a minimum of 3 mils of ANSI 70 sky gray paint. The paint finish shall comply with the requirements of IEEE Std. C57.12.31 and be compatible with a seacoast marine environment containing corrosive Sulfur and salt elements. Aluminum or non-corrosion metal parts do not need to be painted. Hot dipped galvanized surfaces shall not be painted

6.2.1.9 The base shall be provided with four 1-1.5 inch lifting holes or slots for four point sling for lifting.

6.2.1.10. The tank shall have a two-hole NEMA standard ground pad for tank grounding.

6.2.1.11. The terminals of the secondary power and metering windings shall be located in separate LV compartments.

6.2.1.12. The low voltage station service transformer terminal box shall have a removable plate for field drilling, or two 1.5 inch knockouts to allow conduit entry at the bottom. When metering winding is provided the metering winding terminal box shall have two 1.5 inch knockouts for conduit entry at the bottom.

6.2.1.13. All external hardware of the base unit and terminal box shall be series 300 stainless steel, corrosion-resistant aluminum, or hot dipped galvanized.

6.2.1.14. The polarity of the leads or terminals shall be clearly marked by permanent markings.

6.2.1.15 Voltage grading rings shall be supplied if required. The nameplate shall state whether grading rings are required and if so, the manufacturer's part number for the grading ring shall be shown.

6.2.2 Oil-filled SSVT

6.2.2.1 The insulating oil shall be inhibited, type II, 0.3 percent DBPC, or DBP and comply with Entergy specification SG0102 and ANSI/ASTM D-3487. The insulating oil for the transformers shall be non-corrosive when tested in accordance with a modified ASTM D-1275 Part B requiring a minimum duration of 48 hours at a minimum temperature of 150 °C. The insulating oil shall not contain any detectable PCB's.

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6.2.2.2 The oil-filled SSVT shall have the following accessories:

- a) Oil level gauge for oil level indication
- b) Pressure relief device
- c) Oil fill plug
- d) Oil drain valve with sampling plug

6.2.2.3 All gauges shall be clearly visible from the ground level and located away from the pressure relief device.

6.2.3 Gas-insulated SSVT

6.2.3.1 Gas-insulated SSVT shall be filled with new sulfur hexafluoride gas (SF₆). Designs that require a mixture of gasses for insulation will not be accepted. The SF₆ gas shall comply with the requirements of ASTM D2472 and shall be at least 99 percent pure.

6.2.3.2 The gas system shall be designed for a minimum 30 year life cycle with gas leakage of less than 0.5% per year.

6.2.3.3 Gas-insulated SSVT shall be provided with a temperature compensated gas pressure gauge for continuously monitoring gas pressure/density in the tank. This monitor shall have two independent alarm contacts. The first contact shall close when the gas density level falls to about 90% (or at a level recommended by the Manufacturer) of the normal operating gas pressure. This contact will be used for remote alarm indication. The second contact shall close when the gas pressure falls below 85% (or a level recommended by the Manufacturer) of the normal operating gas pressure. This contact will be used for trip and lockout. The SSVT shall retain its rating at this gas pressure/density level. The contacts shall be wired to the terminal blocks in the SSVT secondary winding terminal cabinet.

6.2.3.3 The gas-insulated SSVT shall be supplied with the following accessories:

- a) Temperature compensated density/pressure gauge with low gas alarm contacts
- b) A valve to isolate the density/pressure gauge to test and calibrate the alarm contact settings
- c) Means for refilling the SSVT with gas when required
- d) Rupture disk to protect against high overpressure due to internal arcing faults

6.2.3.4 All valves, fittings, gauges and other auxiliary devices in the gas system shall be made of non-rusting material. The gas monitoring piping shall be preferably Type 316 seamless stainless steel. All tube fittings shall be "Swagelok" or Entergy approved equivalent.

6.2.3.4 The SSVT shall have a valve for gas filling when necessary. This valve may be combined with the pressure gauge isolation valve. The valves shall be diaphragm type and shall be leak proof in both open and closed position. The gas filling valve shall have 1 ¼" female NPT pipe thread with non-corrosive plug.

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6.2.4 Support Pedestal

6.2.4.1 When specified, a mounting support pedestal shall be supplied. Details of this pedestal will be provided by Entergy in attachment SN1101-A1.

6.2.4.2 The structures shall be made of either aluminum or hot dipped galvanized steel. Painted steel is not acceptable.

6.2.4.3 The support pedestal shall be designed to maintain 8 feet 6 inches clearance from the bottom of the pedestal to the bottom flange of the SSVT primary bushing. Any valve such as a gas fill valve or an oil fill plug that requires routine access for maintenance shall be located not more than six feet above ground.

Minimum height from the bottom of the pedestal to the lowest energized high voltage metallic part of the HV terminal shall be as tabulated below.

Nominal System Voltage	Live parts to top of foundation
69 kV	10 ft. 5 in.
115 kV	12 ft. 2 in.
138 kV	12 ft. 2 in.
161 kV	12 ft. 10 in.
230 kV	13 ft. 9 in.
345 kV	15 ft 6 in
500 kV	22 ft 6 in

6.2.4.4 The pedestal shall be provided with a NEMA standard two-hole ground pad for grounding.

6.2.5 Optional Accessories

6.2.5.1 When specified in the Attachment SN1101-A1, one outdoor window or a bar type current transformer, rated 100-5A with C50 accuracy shall be supplied on H0 bushing for secondary ground fault detection and protection. This CT shall be mounted and located near the H0 bushing.

6.2.5.2 When specified in the Attachment SN1101-A1, one outdoor window type current transformer, rated 600-5A with C100 accuracy, shall be supplied for primary line to ground fault detection and protection. This CT will be installed by Entergy on the SSVT support structure

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6.3 Nameplate

A stainless steel nameplate shall be permanently attached to the SSVT. The information on this nameplate shall include the following data for the SSVT:

- a)** The words Station Service Voltage Transformer
- b)** Manufacturer's name and manufacturing plant location
- c)** Year and month of manufacture
- d)** SSVT style/model
- e)** SSVT serial number
- f)** Cooling Class (ONAN or GNAN if Gas-filled)
- g)** Rated frequency (60 Hz)
- h)** Rated kVA
- i)** Rated System Voltage, L-L, kV
- j)** Rated Primary Winding Voltage, kV
- k)** Rated Secondary Winding Voltage(s), V
- l)** Temperature Rise
- m)** Polarity
- n)** Percent Impedance and regulation at 0.8 PF
- o)** Thermal Burden Rating for metering winding (if present)
- p)** Accuracy rating of metering winding (if present)
- q)** Basic Lightning Impulse Level (BIL)
- r)** Switching Impulse Level (for 345 kV & 500 kV SSVTs)
- s)** Connection Diagram
- t)** Winding conductor material (each winding)
- u)** Total weight (in pounds)
- v)** Type and volume of insulating liquid
- a)** Installation and operating instruction reference
- w)** A statement that the oil is free from PCBs
- x)** A statement whether a voltage grading ring is required, and if so part number of grading ring

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7.0 TESTS

Each SSVT shall undergo the following design and routine tests. The test methods shall be as described in IEEE Std. C57.12.90 or IEEE Std. C57.13, and IEEE Std. C57.13.5 as applicable.

7.1 Design Tests

- a) Induced voltage test, dry and wet
- b) Lightning Impulse test
- c) Switching impulse test for EHV units
- d) Accuracy test if metering winding is supplied
- e) Dissolved gas and moisture content
- f) Mechanical test
- g) External RIV
- h) Temperature rise test
- i) Short time mechanical and thermal rating test
- j) Endurance chopped wave test (for oil-filled 345 kV and 500 kV)
- k) Internal arc classification test (for SSVTs with porcelain insulator)

7.2 Routine Tests

- a) Resistance measurement
- b) Verification of terminal markings and polarity
- c) Winding insulation resistance
- d) Excitation tests at 90%, 100%, 110%, and 115% of the rated primary voltage
- e) No-load loss
- f) Load-losses and Impedance measurement
- g) Capacitance and dissipation factor measurement
- h) Applied voltage test
- i) Induced voltage test
- j) Partial discharge test.
- k) Lightning impulse test, for SSVT 230 kV and above
- l) Switching impulse test, for EHV units
- m) Sealing/Leakage test.
- n) Accuracy test for metering winding (if provided)

Five copies of the certified test reports (including one electronic copy) shall be sent to the Purchaser at the address specified in the Attachment SN1101-A1, or as specified on the purchase order no later than 15 days after shipment.

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8.0 DRAWINGS & INSTRUCTION MANUALS

See 8.0 of Entergy Std. AL1203 for drawings for approval, final drawings and instruction manuals required by Entergy. The drawings and instruction manuals shall be sent to the person specified on the Attachment SN1101-A1, or the Purchase Order.

8.1 Approval Drawings

See 8.1 of Entergy Std AL1203, for general requirements on language, units, number of copies required for approval, and drawing format & transmittals. The following drawings shall be submitted for approval;

8.1.1. Outline and General Assembly - this drawing shall show details such as dimensions, weight, location of accessories, and lifting details, etc.

8.1.2. Bill of Material - this shall include but not be limited to the following:

- a)** Manufacturer, Rating, Type material, and Creepage distance of bushing insulator.
- b)** Type, manufacturer and catalog number of terminal connectors when supplied.
- c)** Manufacturer, Type, and catalog number of accessories, e.g., gauges, pressure relief devices, etc.
- d)** Manufacturer, Type, catalog number, size and material of valves, and fittings.

8.1.3. Nameplate Diagram – the nameplate drawing shall show the SSVT serial number.

8.1.4. Shipping Drawing: This drawing shall show the following:

- a)** Shipping heights, width, length and base dimensions.
- b)** Shipping weight in pounds.

8.2 Final Drawings

See 8.2 of Entergy Std. AL1203 for general requirements on the format, and the number of final drawings required by Entergy.

8.2.1. The final drawings shall be submitted at least one month prior to the shipment.

8.2.2. Additionally, one (1) complete set of final approval drawings, instruction books and test report shall be shipped with the SSVT.

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8.3 Instruction Books

See 8.3 of Entergy Std AL1203 for general requirements on the format of the instruction manuals required by Entergy.

The Manufacturer shall supply five copies of the instruction books and parts lists for all of the equipment furnished before delivery. In addition, five copies of the instruction book on DVD shall be supplied. The serial number and rating of the SSVT to which the instruction book applies shall be shown on the front of the instruction books. The instruction manuals shall include the following:

- a) Instructions for receiving, storage and installation.
- b) Final test report.
- c) All approved and final drawings.

9.0 WARRANTY

Manufacturer shall warrant the SSVT to be free from defects in material and workmanship, including material, parts and components of other suppliers which are an integral part of the SSVT, for a period of not less than five (5) years after the in-service date or a period of not less than five (5) years and six (6) months after delivery, whichever occurs first.

For gas-insulated SSVTs the Insulating gas leakage shall not exceed 0.5% per year by volume for ten (10) years. The warrantee shall cover components that are the direct cause of the loss of gas.

10.0 SHIPMENT

See 10.0 of Entergy Std. AL1203 for standard shipping requirements.

10.1 Each unit shall be delivered in palletized, wood crates containing the complete assembly unit. The unit shall be shipped in a flatbed truck and be suitable for offloading by a forklift. The assembly fittings, high voltage terminal, grading ring, screws, bolts, nuts, etc. shall be in a small box or cloth bag and shipped with the SSVT inside the crate.

10.2. The correct position shall be identified on the crates by an "UP" indicator for transporting and storage.

10.3. The crates, boxes, etc. shall show the Vendor's order number, the Entergy order number, and the number of crates shipped.

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11.0 RESPONSIBILITIES

The Manager of Substation Design is responsible for assuring that all equipment is manufactured in accordance with this standard.

11.1 Interpretation

Interpretation of this standard is the responsibility of the Design Managers and Design Supervisors. Questions should be directed to Transmission Design Basis.

11.2 Deviation

Deviations from this standard may be made only with the consent of the Manager of Substation Design or an approved agent thereof. Any deviations granted shall be reported to the Manager of Design Basis for consideration for inclusion in the standard. No other person is granted independent authority to grant deviations.

11.3 Regulatory Requirements

None

12.0 ACKNOWLEDGEMENTS

Eddie Hester for review and helpful suggestions.

13.0 ATTACHMENTS

13.1 SN1101-A 1 - Specific Requirements (Data to be supplied by Entergy)

13.2 SN1101-A 2 - SSVT Details (Data to be supplied by Vendor with bid)

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1	Substation	
2	Quantity required	
3	Date required	
4	Nominal System Voltage (See 6.1.3) 500 kV, 345 kV, 230 kV, 161 kV, 138 kV, 115 kV, 69 kV	
5	Primary Winding Voltage (see 6.1.3) 287.5 kV, 207 kV, 138 kV, 92 kV, 80.5 kV, 69 kV, 40.25 kV	
6	Secondary Winding Voltage (see 6.1.3) 125/250 V, 277 V, 480 V, Other _____,	
7	Rated Load (See 6.1.5) 50 kVA, 100 kVA, Other _____ kVA	
8	Metering Winding (see 6.1.8)	Required/Not required
9	Metering winding voltage (See 6.1.8)	Per spec /other _____
10	Metering Winding Accuracy (See 6.1.8)	
11	Insulator Creepage Distance (See 6.2.1.5)	Per spec /other _____
12	Primary fault detection CT (See 6.2.5.2)	Required/Not required
13	Secondary fault detection CT (See 6.2.5.1)	Required/Not required
14	Mounting Support Pedestal (see 6.2.4.1)	Required/Not required
15	Mounting Pedestal drawing;	
16	Point of Delivery	
17	Person(s) to notify 48 hours in advance of shipment	
19	Send test reports to	
20	Send drawings and instruction manuals to	
21		
22		

SN1101-A2	Station Service Voltage Transformers (SSVT) Specification	Rev No 02
	SSVT Details (Data to be supplied by Vendor with bid)	

1	Manufacturer	
2	Manufacturing Location	
3	Style / Catalog number	
4	Primary Voltage	
5	Rated BIL	
6	Rated BSL	
7	Rated load	
8	Metering winding accuracy	
9		
10	Thermal Burden Rating	
11	Rated Voltage Factor	
12	Transformer Impedance referred to 85°C	
13	Guaranteed No-Load Losses	
14	Guaranteed Load Losses	
15	Partial Discharge Extinction Voltage	
16	Partial Discharge Value	
17	Insulator Material e.g. Composite or ceramic	
18	Insulator Leakage Distance (Mfr standard)	
19	Insulator Leakage Distance (offered)	
20	Insulator Manufacturer Name and location	
16		
17		
18	Terminal Pad material	
19		
20	Warranty duration	
21	Oil, gallons	
22	Total weight	
23		
24		