NASA CR-134600

FINAL REPORT

DETERMINATION OF LIFE FOR A POLYIMIDE-EPOXY ALTERNATOR INSULATION SYSTEM

by

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FOREWORD

The work described herein was conducted by the Aerospace Controls and Electrical Systems Department of the General Electric Company, Erie, Pennsylvania, under National Aeronautics and Space Administration Contract NAS3-15691, Modification No. 1. The work was performed under direction of Mr. D. S. Repas of the Power Systems Division of NASA-Lewis Research Center.

Measurements and insulation studies were conducted in the Advance Development Laboratory of the Direct Current Motor and Generator Products Department of the General Electric Company, Erie, Pennsylvania. Hardware used to conduct this work was designed and manufactured during the period 1964 to 1966 under NASA Contract NAS5-417.

ABSTRACT

Tests were conducted to predict remaining electrical insulation life of a polyimide-epoxy insulated 60 KW, 208 volt homopolar inductor alternator, following completion of 23,130 hours of turbo-alternator endurance tests at NASA. The sectioned armature winding of this alternator stator was used as means to evaluate and measure end-life at several aging temperatures for development of an Arrhenius plot.

A one-half life rate of 11.3°C was established from these data with a predicted remaining life of 60,000 hours at an armature winding temperature of 248°C and a total life, including endurance test time, of 61,645 hours. These data correlate reasonably well with data reported in CR-120901 on previous contract work.

The test method applied provides static test means for establishing insulation life-temperature profiles on completed components of electrical rotating machines.

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SUMMARY

The work under NASA Contract NAS3-15691 Modification No. 1 was conducted to establish Arrhenius dielectric life-temperature data on the polyimide-epoxy insulation system of a previously endurance-tested inductor alternator. The data are intended for product design and application use.

Thermal aging tests were conducted at five accelerated temperatures on carefully divided sections of the alternator stator. Each section, designated a statorette, provided twenty-two conductors for armature winding dielectric measurements for top-to-bottom conductor and top and bottom conductors to frame. The statorette fabrication technique applied during this work is considered new. The technique provides a means to establish insulation dielectric life-temperature profiles on completed electromagnetic components of rotating machines.

Statorette tests were completed with failure of all coils at 350°C and 325°C. Tests were terminated at the contract scheduled completion date with conductor failures of 78.9%, 36.4% and 21.2% for respective test temperatures of 300°C, 275°C and 250°C.

An Arrhenius life-temperature curve for the alternator armature winding insulation system was developed from the statorette tests with a slope or one-half dielectric life rate of 11.3°C. At this rate, projected dielectric life, in addition to the turbo-alternator 23,130 hours of endurance test time, is 60,000 hours at 248°C. The equivalent time for the endurance hours was determined to be 1,645 hours resulting in a total predicted life of 61,645 hours at 248°C.

A failure location study was conducted at the completion of the aging tests using the position failure data from aging tests and post-aging dielectric breakdown. From this study, recommendations were made for insulation improvements for longer life potential.

SECTION I

INTRODUCTION

The stator armature and field windings of two Model 2CM391B1, 60 KW, 120/208 volt, 12000 RPM homopolar inductor alternators were evaluated under NASA Contract NAS3-15691 previous to work reported herein to determine electrical insulation quality and predict remaining insulation life. (ref. 1) The polyimide-epoxy insulated stators had been removed from the alternators at NASA after completing respectively 12,440 and 23,130 hours at approximately rated load in turbo-alternator endurance tests. (ref. 2)

The stator-in-frame for these alternators is approximately 12 inches in diameter, 20 inches long, contains an armature winding of 72 slot double core construction, and a field winding positioned between the armature cores and between the armature conductors and frame. The armature is wound one turn per slot per phase with frog-leg coils inserted into one end of a semi-closed slot and inter-phase connected at the opposite core end. The field winding is placed into a double cavity copper box with start of the coil winding at the box ID to permit the two lead exit at coil periphery.

Alternator rating information is shown in table I. The insulating materials and conductors used to comprise the insulation system for the armature and field windings of the stators investigated are described in tables II and III with component location depicted by alternator cross-section in figure 1.

During previous work, tests to predict insulation life were conducted on the 12,440 hour tested stator using an increasing step-temperature aging procedure with 600 volt dc proof test on five armature coils for each of nine temperatures. The life for each aging period and respective aging temperature was projected from the slope of an average life-temperature plot established from industry tests on polyimide insulated wire. From these projections, a life exceeding 80,000 hours at an operating temperature of 248°C was predicted. Results of this work was reported in April 1972 in NASA contract report CR-129091. (ref. 1)

Results from these previous tests were not considered sufficiently conclusive to provide data for predicting life with reasonable confidence for design and application use. An alternate means for life prediction and verification of the aforementioned data was therefore proposed using the 23,130 hour tested stator and a method to obtain end-life data from at least three aging temperatures so as to produce an Arrhenius life-temperature plot. This proposal resulted in modification of the contract (Modification No. 1) and work on the second stator.

The purpose of the work herein reported was to obtain Arrhenius life-temperature data and an analysis of alternator insulation life prediction for product design and application use.

The scope of the work included (1) fabrication of test specimen hardware by stator sectioning, (2) insulation measurements and heat aging tests to obtain end-life data, (3) failure location analysis for insulation improvement recommendations, and (4) an analysis of data to permit life-temperature predictions.

The objectives for the work are summarized as follows:

1. Establish an Arrhenius life-temperature plot with three sigma limits from test data on a sectioned 2CM391B1 alternator stator.

2. Apply insulation measurements as techniques to monitor insulation deterioration and failure prediction.

3. Determine means to integrate the accumulated turbo-alternator endurance test time with contract work test data for an overall life-temperature profile.

4. Identify insulation improvements for longer life potential.

SECTION II

INVESTIGATION

The test hardware specified for this investigation was the stator-in-frame from alternator model 2CM391B1, Serial Number 481490. The alternator had completed 23,130 hours turbo-alternator endurance testing by NASA with an average total armature winding temperature of 205°C and an end turn bus connection temperature of 260°C. In addition to the endurance tests, the stator had been subjected to a series of tests during previous contract work with short time exposure to temperatures as high as 250°C. (ref. 1).

The phases of investigation directed at meeting contract work scope objectives are summarized as follows:

1. Initial Insulation Measurements

   Conduct initial insulation measurements to establish insulation quality as a base prior to follow-on fabrication and tests.

2. Fabrication of Statorettes

   Section the stator axially to provide six equal sections of the armature winding so as to permit top conductor-to-frame, bottom conductor-to-frame and top-to-bottom conductor measurements. The completed sections to be designated statorettes.

3. Aging Tests

   Following initial insulation quality determination tests, subject five statorettes to cycle or repeating type tests until failure of all coils. The cycle should include sequential exposure to (1) oven heat with dielectric measurements at temperature, (2) mechanical vibration at room temperature, and (3) dielectric measurements conducted at room temperature.

4. Failure and End-Life Analysis

   Conduct an analysis to include (a) evaluation of the failure type, (b) use of various measurements as means to detect incipient failures, (c) projection of failure data for incompleted tests using probability techniques, (d) development of Arrhenius life-temperature plots, and (e) prediction of additional and total life of insulations for the tested stator.

5. Failure Location Study

Conduct a failure location study to identify areas of insulation system weakness and submit recommendations for achieving longer life potential. The study should include an analysis of failure positions from the statorette test data.

A. EQUIPMENT TESTED

The equipment to be tested was stator S/N 481490 from alternator model 2CM391B1 sectioned with axial cuts on centers of the slot to provide six statorettes. Each statorette contained a minimum of eleven slots to permit application of twenty-two conductor-to-frame and eleven conductor-to-conductor insulation measurements and a section of the annular field coil for two field-to-frame insulation measurements.

Tests to establish armature and field winding insulation quality were conducted prior to sectioning. These tests included corona onset voltage, insulation resistance as a function of temperature to 200°C, and DC leakage current to 1000 volts, also as a function of temperature to 200°C.

The procedure used to section the stator and complete fabrication of the statorettes in preparation for tests is described in the following report sections. Views of the stator prior to start of work are shown in figures 2 and 3 for the connection and opposite connection ends, respectively.

1. Statorette Fabrication

The general approach to statorette fabrication was to (1) imbed the stator end turns in rigid wax so as to provide coil support and contamination protection during machining operations, (2) remove both end turns with machine cuts in radial direction, (3) remove surplus frame end portions, (4) section the stator axially into six equal portions, (5) remove surface contamination from waxed areas, and (6) melt and clean wax from the sections.

An optimum length for end turn removal was desired so as to provide maximum conductor-to-conductor contacts in the end turn portion and a length sufficiently short to prevent possible slot insulation damage at the core ends due to machine tool stress during end turn removal. A one inch length, measured from the core end, was established.

Studies were conducted to identify an imbedment wax to (1) provide maximum rigidity and contamination protection to the coils and insulation, and (2) permit complete removal by melt or solvent action. Conventional paraffin type wax was selected for the stator embedment material. Experience revealed best impregnation and fill of the stator was achieved by pre-heating the stator at a temperature somewhat lower than the wax melt point. These temperatures were 45°C and 80°C, respectively.

Machining of the end turns and frame was completed as shown in figure 4. This was accomplished as follows:

a) Bus-bars and cross-connections at the terminal end of the stator were machined to a diameter of 7.250" (0.250" less than the stator bore) using a sharp cutting lathe tool.

b) Both stator-end turns were removed one inch from each of the core ends by use of a high speed milling cutter.

c) Oil fittings were removed from the frame O.D. and the frame length reduced to specified dimensions. A parting tool was required for removal of the frame on the opposite terminal end of the stator primarily to prevent melt of the wax due to heat generated from machining.

d) Axial sectioning of the stator-frame was achieved by:

    (1) A one-inch deep cut was made axially into the frame O.D. using a milling cutter.

(2) The stator-frame was sectioned in two by continuing at the slot cut by milling machine, using a vertical band saw.

(3) Subsequent axial cuts providing six frame-stator sections was achieved by band-saw cuts from the bore.

The removal of end turns and sectioning of the stator was a success in terms of not imparting damage to the conductors or insulations and achieving the sectioned armature coil end configuration as planned. Completion of this operation was considered a significant process achievement. A view of the stator following end turn removal is shown in figure 5. The stator sections, prior to removal of wax, are shown in figures 6 and 7.

Although the two end turn annuli removed by the this operation were intact, it was apparent separation of conductors and retention of end-turn configuration with proposed exposure to test accelerated aging and vibration would become too complex to be of value. The studies on these end-turns were, therefore, discontinued and emphasis placed on the core portion of armature and field coil.

The six stator sections, obtained from the equal machined parts of the stator, were mounted on cradles prepared from 2" high by 6" wide x 15" long channel low carbon steel. The sections were affixed to the cradles by weldments at the stator outer periphery, approximately one inch from the armature conductors. A careful hand clean-up and polishing operation was applied to the armature and field conductor ends so as to remove all burrs and reduce risk of dielectric breakdown between adjacent armature conductors and the field conductors and field coil copper box. The wax was then melted from the stator sections. The process consisted of melt-out at 80°C with the stator bore in down position and a final wash with Freon TF.

2. Measurement Connections

The proposed insulation measurement connection procedure was to manually apply the measurement probes to the test conductors. This procedure included removal of oxides from the test conductors, following exposure to temperature during aging tests, for effective probe contact. Permanent measurement leads were required for select conductor measurements to be conducted with the statorette in the oven or corona test pressure chamber. The field coil and three top and three bottom slot armature conductors were selected for these measurements.

The armature conductors were designated 1T through 11T and 1B through 11B with measurement lead connections made to 6T, 7T, 8T, 6B, 7B and 8B. (T and B are designations for top and bottom slot positions, respectively). The conductor arrangement permits eleven each top-to-frame and bottom-to-frame, and eleven top-to-bottom armature conductor measurements for a total of thirty-three measurement possibilities per statorette.

AWG 16 polytetrafluoroethylene-glass insulated silver plated copper stranded leads, four feet in length, were connected to one end of each three top and three bottom armature conductors sharing the same slots. This connection arrangement could permit slot phase-to-phase and phase-to-frame measurements. To minimize heating, the connection was made by producing a ball at the strand ends and butt tungsten inert gas welding the ball to the armature conductor end.

Connections for field coil measurements were made by applying silver paint over the exposed conductors, exclusive of about one-half the area adjacent to the copper field coil boxes. AWG 16 polytetrafluoroethylene-glass insulated stranded leads were connected to the silver coated conductor ends by a brass fastener inserted into a hole drilled and tapped into the field coil conductors.

To prevent breakage of lead strands, a lead support was constructed of steel and polyimide-glass laminate and attached to the statorettes above the bore. Untreated glass tape was wrapped tightly around the lead strands at the armature conductor joint to provide a stress transition from the rigid joint to the flexible lead. The leads were looped from the joint and anchored through the polyimide-glass support.

The completed statorettes, prior to conductor taping, are shown in figures 8 and 9.

The six statorettes were designated No. 1 through No. 6. Five were selected for the required aging tests, with statorette No. 5 remaining as a spare.

B. TEST PROCEDURE

The test procedure adopted was based on industry developed methods for thermal evaluation of electrical insulation systems (ref. 3, 4, 5). The procedure involves exposure of the statorette to critical elements, simulating the environmental conditions and stresses typical of the product application, but aggravated to accelerate deterioration. For this program the intended product application was electrical machinery for space power generation. (ref. 6). The data obtained on the system tested are expected to be applicable to a broader spectrum of equipment and applications.

1. Test Cycle Description

The elements of the test cycle adopted included heat aging at elevated temperature, mechanical vibration, thermal shock produced by moving the test specimen into the hot oven, and electrical stress through application of voltages for insulation condition measurements.

The sequence and details of these exposure elements are described as follows:

a) Heat age statorette in nitrogen atmosphere for prescribed time and temperature.

b) Apply voltage stress, at aging temperature, to selected conductors for measurement of dc leakage current to 1000 Vdc and 500 volt insulation resistance.

c) Apply thermal stress by cooling statorette from aging temperature to room temperature.

d) Apply mechanical vibration at room temperature.

e) Apply voltage stress with measurement of corona onset voltage to 700 Vac.

f) Apply voltage stress through measurement of dc leakage current to 1000 Vdc at room temperature.

g) Repeat steps a) thru f) until "failure" of all coils. "Failure" is defined as leakage current exceeding 2000 micro-amperes at 600 Vdc or less, when tested at room temperature condition.

Temperature increments of 25°C were used from selected aging temperatures of 250°C through 350°C. The aging periods corresponding to each of the temperatures were estimated to provide approximately the same number of cycles to failure for each test temperature. The oxygen concentration for the aging environment was reduced to 0.16%, a level corresponding to the concentration at 100,000 feet (30.5 Km), by closing the oven outlets and purging the ovens with dry nitrogen to pressurize the system.

Thermal profiles were obtained on the statorettes to establish the time required to heat and cool the statorettes. The aging time used in the analysis was the specified time at temperature and did not include heat-up and cool-down time. Power to the oven heating elements was removed at the end of cycle heat aging time, but the flow of nitrogen was continued until the statorette reached room temperature to reduce oxidation effects.

The vibration stress was applied by subjecting the statorette to 60 Hz, 8 mil peak-to-peak amplitude vibration for one hour in each cycle. The vibration corresponds to 1.5 G's loading.

Voltage stress was applied through measurements of dc leakage current, insulation resistance at 500 Vdc, and corona onset voltage for each armature top conductor-to-frame, bottom conductor-to frame, between top and bottom conductors, and field coil to frame measurement position. DC leakage current was measured at voltages to 1000 with criterion for failure established as leakage exceeding 2000 micro-amperes at 600 Vdc or less, measured at room temperature. The 600 volt dc limit was based on 1.4 (ac to dc conversion) and 2.0 (expected application transients) multiplying factors of the rated 208 volt ac alternator terminal voltage. Leakage current and insulation resistance measurements were also conducted at aging temperature for conductor positions to which leads were affixed, permitting measurements to be conducted on the outside of the ovens.

Corona onset voltage was measured at voltages to 700 Vac rms, a level corresponding to the 1000 Vdc limit established for leakage current measurements. Corona onset voltage was measured at room temperature and at a reduced pressure of 4.5 TORR. The 4.5 TORR is the pressure equivalent to 100,000 feet (30.5 Km) at 250°C and simulates space conditions.

The test cycles applied for each of the five selected aging temperatures are summarized in the following table:

TEST CYCLE ELEMENTS AND HEAT EXPOSURE PERIODS

Element			Statorette Number / Test Temperature				
			1	6	4	3	2
No.	Description	Condition	350°C	325°C	300°C	275°C	250°C
1 **	Voltage stress - between all conductors and all conductors to frame, to 1000 Vdc or failure *.	Cold, at room temp.	X	X	X	X	X
2.	Heat Exposure Hours	Oven, Nitrogen gas purged	4	24	68	168	336
3	Voltage stress - select conductors, same as No. 1	Hot, at test temp.	X	X	X	X	X
4	Mechanical Vibration	Cold, at room temp.	X	X	X	X	X
5	Voltage stress - select conductors, corona onset voltage	Cold, at room temp, sea level and 4.5 TORR	X	-	X	-	X
6	Voltage stress - between conductors and conductors to frame, to 1000 Vdc or failure *.	Cold, at room temp.	X	X	X	X	X

* - Failure, Leakage Current in excess of 2000 micro-amperes
** - Initial Cycle only

2. Measurements

Electrical measurements were conducted on the statorettes to monitor degradation of insulations at the test temperatures and at room temperature during the heat aging cycles. Leakage current measurements were conducted at test temperature where possible. Corona onset voltage measurements were conducted under vacuum with intent to detect formation of voids in the structure as the organic materials aged and pyrolyzed.

Initial measurements were conducted on the stator prior to sectioning and on the statorettes to establish base line data. Initial measurements were conducted on the statorettes at temperatures to 200°C to establish a base for the insulation quality prior to initiation of aging tests.

Measurement positions and connection arrangements are described in section II-A.2 of this report. The schematics for measurement connections are shown in figures 10a and 10b for the stator and statorettes, respectively. The measurements are described as follows:

a) Insulation Resistance

Measured at 500 Vdc with a 20 million megohm instrumentation read-out capability.

Measurements conducted at room temperature prior to aging tests, at aging temperature on select conductors with leads attached, and at room temperature at completion of each aging cycle.

b) Leakage Current

Measured at 200, 400, 500, 600, 800 and 1000 volts dc using a "Takk" tester.

Measurements conducted at room temperature prior to aging tests, at aging temperature on select conductors with leads attached, and at room temperature at completion of each aging cycle.

c) Corona Onset Voltage

Measured with application of voltage to 700 Vac to select conductors with leads attached. Corona onset voltage measured by detecting initiation of noise on the cathode ray tube display. Measured in a chamber at (1) room temperature and atmospheric pressure, and (2) at 4.5 TORR and room temperature conditions. The 4.5 TORR at room temperature is equivalent to the space application condition of 250°C and 8 TORR*. Corona tests were conducted on the statorettes used for 250, 300 and 350°C test temperatures only.

C. TEST APPARATUS

The test apparatus used for conducting tests included convection ovens, nitrogen gas purging, mechanical vibration facilities, a corona-altitude chamber, and measurement instrumentation.

1. Facilities

a) Ovens

The ovens used for heat aging were high velocity convection type. The 0.16% oxygen environment was achieved by purging the ovens with dry nitrogen from the plant source.

After initiating aging tests, a high volume loss of nitrogen was observed. Quantity lost was reduced by placing the statorette into an enclosure and purging the enclosure only with nitrogen within the oven. The enclosure was constructed from steel sheet with a screw-fastened lid, and a copper tube connection and vent valve at the cover. A view of this enclosure is shown in figure 11.

The statorette was placed into the box and the lid fastened in place through strips of unsintered polytetrafluoroethylene as gasket material. Room temperature vulcanizing silicone rubber was then applied as a sealing bead along the edge of the cover-box interface and allowed to cure. Connection was made to the copper line in the oven with the vent valve fully opened. Nitrogen flow was initiated and continued for half an hour to assure the system was purged of air. A gas chromatograph analysis of the gas effluent from the vent valve after the half-hour purge showed 99.99+% nitrogen and 0.003% oxygen, indicating the air had been virtually eliminated from the enclosure.

(*) - $4.5 \text{ TORR at } 23°\text{C} = 8 \text{ TORR} \times \dfrac{23 + 273}{250 + 273}$

Gas flow meters were installed in the gas lines to the ovens, and flow was monitored periodically throughout the aging. With the vent valves closed, after purge, nitrogen flow was zero; had leakage occurred in the enclosures, flow would have been observed on the gauges. This situation did not occur.

A thermal profile was repeated on the statorettes in the enclosure, using the same procedure as described in Section IIB of this report, and the time in the oven adjusted to obtain the required time at aging temperature. An enclosure is shown positioned in the oven in figure 12.

b) Mechanical Vibration

Mechanical vibration was applied to the statorette by mounting the statorette (bore side up) onto the flat plate of a Syntron Shake Table and subjecting the statorette to 1.5 G's vibration (8 mils peak-to-peak amplitude at 60 Hz) in a vertical plane. Vibration amplitude was monitored by read-out from accelerometers fastened to the statorettes.

c) Corona-Altitude Chamber

A vacuum chamber approximately 14" x 14" x 20" inside dimensions was used to achieve 4.5 TORR pressure conditions for corona tests. The corona measurements were made with an Addison Discharge Scope Detector with a General Electric 5 KV transformer potential source.

A list of the equipment used for these tests is shown in table IV.

2. Instrumentation

The instrumentation used in conducting tests for this program is described in table V.

SECTION III

TEST RESULTS

The data from all tests conducted are compiled and presented in tables VI through XXIX. Summaries of these data and failure analyses are shown in tables XXX through XXXII, inclusive. Results of tests conducted on the stator prior to sectioning, tests on statorettes prior to aging, and aging tests are described in this report section.

A. INITIAL MEASUREMENTS

1. Stator

The insulation quality level of the stator was determined before sectioning to establish a base line. Results of insulation resistance and leakage current measurements are shown in table VI. Corona onset voltage was also determined, and results are shown in Table VII. To determine the effect of temperature, insulation resistance and leakage current were also measured as a function of temperature to 200°C. The change in insulation resistance with temperature is shown in figure 13.

A study of the leakage current data indicated the stator insulations to be in good condition with zero leakage at low temperature and slight leakage at 200°C and 1000 Vdc. This is corroborated by the insulation resistance data. Corona was not evident at voltages to 700 Vac.

2. Statorettes

Initial measurements were made on the statorettes at room temperature and at 200°C after a 24-hour-exposure to 200°C as a test to establish insulation integrity prior to aging. Test results are shown in tables VIII, IX, X and XI.

All statorettes showed essentially zero leakage to 1000 Vdc except for two slots in statorette No. 4. The top and bottom conductors were shorted in this unit. These failures were also evident by the hot insulation resistance reading, as shown in table X, although an additional failure, a top-to-bottom conductor, was detected. At room temperature, all statorettes showed zero leakage in all positions with voltage stress to 1000 Vdc.

Measurements made at 200°C, to establish insulation integrity of the statorette field coils prior to aging tests revealed excessive leakage current with dc voltage applied between the field coil conductors and statorette frame. Field coils in all statorettes were faulted. The cause was speculated to be surface tracking, and effort was made to clean the conductor surface area for fault removal. The faults were located and established as an arc-over or track from an outer conductor across the epoxy compound and 0.0055" field coil box insulation to the copper box. Study was continued to verify if the field faults were due to air-dielectric breakdown at 200°C, using an "air-quench" concept. A sheet of silicone rubber was placed between the field coil conductor ends and the steel cover plate and measurement leads sealed with room temperature vulcanizing silicone compound at the joint. This study was unsuccessful however; build-up of voltage could not be achieved at room temperature.

From these studies, it was concluded the field faults were breakdowns occurring at the machined surface. Arcing that occurred during statorette field coil corona testing, and the field coil breakdown that occurred during the 200°C test, apparently caused permanent damage to field coil insulations at the machined surface. The cause appeared to be attributable to copper particles from stator sectioning operations and/or tracking of the polyimide polymers. Tests on the field coils were, therefore, abandoned, and test effort concentrated on the statorette armature conductors only.

B. AGING TESTS

Deterioration of the insulation system during accelerated aging tests was determined primarily by leakage current measurements at room temperature to establish a common end point for life at the five test temperatures. Failure was defined as leakage in excess of 2000 micro amperes at a voltage not exceeding 600Vdc. Time to failure was observed for each armature conductor in test positions of top conductor-to-frame, bottom conductor-to-frame, and top conductor-to-bottom conductor. These life data were used to calculate a median time to failure with 100% failure, or a plot on log-normal probability paper from which a median and three sigma limits could be determined from data of incompleted tests.

Leakage current measurements at temperature, insulation resistance measurements at temperature, and corona onset voltage measurements at 4.5 TORR were of value in detecting incipient failure. The high temperature readings and the corona start voltage readings, particularly at reduced pressure, were more sensitive than the room temperature leakage current readings, but less consistent and more difficult to correlate. These measurements were eliminated, however, with the change from nitrogen pressurized ovens to the statorette enclosures; it was necessary to remove the leads used for obtaining these measurements in order to seal the statorette enclosure.

A study of leakage current measured at test temperature shows that for some statorettes failure could not be predicted. For example, for some readings leakage current was extremely low at high voltages, but in the following cycle, failure would occur with application of low voltage. However, with other readings, leakage current increased with each cycle until failure occurred. It was, therefore, concluded leakage current measured at test temperature resulted in inconsistent data, not fully useful for failure prediction or study of insulation deterioration trends.

1. 350°C Test Results

On the statorettes aged at 350°C earliest room temperature leakage current failures occurred in the slot top-to-bottom armature conductor mode. Bottom conductor-to-frame failures slightly outpaced the top conductor-to-frame failures. Failure was achieved on all conductors. These data are shown in table XII.

Hot leakage readings displayed an interesting pattern. High leakage measured initially dropped as aging progressed and slowly rose again. Readings were not particularly consistent. The hot insulation resistance measurements followed the same pattern with low megger reading initially, but improved steadily with heat aging until abrupt "failure" occurred. Recovery occurred in some instances. The hot leakage current and insulation resistance data are shown in tables XIII and XIV.

Corona onset voltage readings were rather consistent and showed a drift downward as aging progressed for top to bottom conductor and top conductor-to-frame measurements. Corona onset for the bottom conductor-to-frame increased somewhat for the first few cycles, then also drifted lower. An abrupt drop in corona onset voltage occurred toward the end, and readings remained at a low value. The corona onset voltage data are shown in table XV.

2. 325°C Test Results

Leakage current readings observed at room temperature, following each aging cycle at 325°C, demonstrated a failure pattern similar to that shown with the 350°C statorette tests. The earliest failures occurred between phase windings or top-to-bottom armature conductors. Bottom conductor-to-frame failures were initially slightly more rapid than top conductor-to-frame failures, but complete failure occurred first in the top conductors. Failure of all conductors was achieved. These data are shown in table XVI.

Leakage current measurements at test temperature showed a decrease in leakage initially to rather low values followed by a gradual increase. Phase, or top-to-bottom conductor, failures occurred first. There was slight difference between the top conductor-to-frame and bottom conductor-to-frame readings. These results were consistent with results of hot insulation resistance data. Data from these measurements are shown in tables XVII and XVIII.

3. 300°C Test Results

Due to termination of the test, complete failure was not achieved on conductors in the statorette aging at 300°C. However, failure was achieved on all top-to-bottom conductors, indicating this area to be the principal weakness of the insulation system. Some bottom conductor-to-frame failures occurred prior to top conductor-to-frame failures, similar to that experienced with the 350°C test, but there was essentially no difference between the quantity of top and bottom conductor-to-frame failures at termination of the test. Data from these tests, establishing conductor end life by room temperature leakage current, are shown in table XIX.

DC leakage current measurements at the 300°C test temperature showed a drop in current during early aging, followed by a gradual rise. Top-to-bottom conductor failures occurred first, and the top and bottom conductor-to-frame failures occurred at about the same rate. Data from DC leakage current and insulation resistance measurements are shown in tables XX and XXI.

Corona start voltage readings on this statorette were low for bottom conductor-to-frame measurements at simulated altitude prior to aging tests. (See table XI, initial measurements). These low readings continued to decrease with aging. Top-to-frame and top-to-bottom conductor readings drifted downward slowly in a manner expected for insulation systems subjected to heat aging. These corona data are shown in table XXII.

4. <u>275°C Test Results</u>

Complete failure of conductors for the three test positions was not achieved in the 275°C aging tests. Leakage current readings observed at room temperature remained very low initially except for one bottom conductor-to-frame position, which demonstrated an "infant mortality" characteristic by failing in the third test cycle (table XXIII). Top-to-bottom conductor failures paralled bottom conductor-to-frame failures as the test progressed. One failure occurred in the top conductor-to-frame group at termination of the test. The room temperature leakage current data is shown in table XXIII.

Leakage current and insulation resistance measurements at 275°C showed a rapid decrease in the insulation condition as aging progressed, but these data lacked consistency. Insulation resistance appears to be a more dependable measurement for this purpose than DC leakage current. Data from these hot measurements are shown in tables XXIV and XXV.

5. <u>250°C Test Results</u>

One early failure occurred in the eighth cycle (top conductor-to-frame), and a second occurred in the tenth cycle (top-to-bottom conductor), resulting in an extrapolated median time to failure appreciably shorter than anticipated. These failures were recorded from the leakage current measurements at room temperature condition. At termination of the test, the number of failures for top-to-bottom and bottom conductor-to-frame were essentially equal. Additional failures did not occur in the top conductor-to-frame group. Data from these room temperature tests are shown in table XXVI.

Leakage current measured at 250°C showed improvement in the conductor-to-frame positions during aging. The top-to-bottom conductor positions showed highest leakage and indication of the weak portion of the insulation system. Insulation resistance measured at 250°C did not provide useful information. Test results were similar to that reported for 275°C tests. These data observed at test temperature are shown in tables XXVII and XXVIII.

Corona onset voltage readings drifted downward slowly as aging progressed in a manner expected for deterioration of an organic insulation system. The corona data are shown in table XXIX.

Views of the statorettes following completion of tests are shown in figures 14 and 15.

C. FAILURE PROBABILITY ANALYSIS

A failure analysis was conducted on the life-data obtained from the five statorettes. The aging time to failures for all conductor positions was compiled and summarized as an initial step in this analysis. The aging time to failure for the top conductor-to-frame, bottom conductor-to-frame and top-to-bottom conductors is summarized in table XXX. A failure summary for the combined position of conductor failures is shown in table XXXI.

The mean and three sigma limits for data from 350°C and 325°C tests were calculated since failure of all conductors was achieved in these tests. Test data obtained at the remaining three test temperatures, 300°C, 275°C and 250°C, were incomplete, with 78.9%, 33.3% and 21.2% coil failures for each respective temperature at termination of tests. A statistical approach for determination of the mean and three sigma limits for these incomplete test data was, therefore, undertaken. (ref. 7,8)

The first step in the statistical approach was to plot the cumulative percentage of failures versus time to failure on log-normal probability paper. Plots of all conductor positions and combination of positions are shown in figures 16, 17, 18, 19 and 20 for the respective five test temperatures.

1. 350°C and 325°C Analysis

The calculated value of median life, or 50% probability, for the 350°C and 325°C data were obtained from the summary in table XXXI and plotted at the 50% probability line on the log-normal paper. The best straight line for all data points drawn through this median was used to establish the percent failure versus time to failure slope. The probability plots are shown in figures 16 and 17.

2. 300°C Analysis

Statistical experience has indicated the slope of the probability line for similar failure modes should not change with different aging temperatures *. Two lines parallel to the 350°C line were, therefore, drawn; one for the 325°C data, passing through the calculated median, and the second for the incomplete (78.9% failures) 300°C data. Both lines appeared reasonable for the data points. Although a line with a

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* - Private communication with Dr. Wayne Nelson, Corporate Research and Development, General Electric Co.

steeper slope could have been drawn for the 300°C data points, the location of the median would not have changed appreciably. The probability plots of the 300°C data are shown in figure 18.

3. <u>275°C Analysis</u>

The incomplete 275°C time-to-failure data were also plotted on log-normal probability paper and is shown in figure 19. Thirty-three percent of the conductors had failed at test termination. The best straight line was drawn for the 275°C data with 33% conductor failures, and this line was extrapolated to intersect the 50% probability ordinate to provide the 275°C median life point for the Arrhenius plot. It was apparent that the slope of this 275°C probability-life data was different from that of the 350°C data. Additional 275°C failure points would be required to establish such difference with confidence.

4. <u>250°C Analysis</u>

The 250°C data were also plotted on the log probability paper using a slope determination technique different than the technique used for 300°C and 275°C data. With 21% conductor failures, a number of lines with different slopes could be drawn. The concept of similar slopes was applied from the 275°C data, but the life probability line could be readily shifted up or down on the plot. The lines drawn and plotted on figure 20 appear to be a reasonable compromise. Greater confidence would have resulted with continuation of the aging tests and achievement of more than 50% failure of the conductors.

5. <u>Failure Position Analysis</u>

An analysis was made of the failure data for the three failure positions in an attempt to establish median life and three sigma limits for each position. The intent of this analysis was to study strength and weakness areas of the insulation system for improvement recommendations to achieve longer life potential. Plots of these failure position data were made on log-normal probability paper, and median life was established from the intersection of aging time and 50% probability with the life probability line.

The median and three sigma data were determined for the 300°C, 275°C, and 250°C data and are tabulated on table XXXII. Failure position data shown on this same table for the 350°C and 325°C tests were determined by calculation.

D. INSULATION END LIFE DETERMINATION

An Arrhenius plot of time to failure versus aging temperature for the median of all conductor failures for the 350°C, 325°C, 300°C, 275°C and 250°C tests is shown in figure 21. Median life for the 350°C and 325°C tests were calculated from completed data, and the life for the remaining three incompleted tests was determined by probability end life prediction as described in the previous report section. The data for this plot were obtained from table XXXII.

The data plotted result in essentially a straight line through all test temperatures except the 250°C test point. The reduced projected mean life for this temperature suggests factors other than aging may cause reduced life in a test of this duration, or a large number of early, infant mortality type failures occurred such that the median would be increased with extended tests.

The slope for the Arrhenius plot was calculated to show insulation life is changed by a factor of 2 for each 11.3°C change in temperature. The comparative slope factor for polyimide insulated conductor, obtained from several sources of industry data and reported in previous contract work, was determined to be 12.2°C, therefore, showing reasonable correlation in test results. (ref. 1)

E. FAILURE LOCATION INVESTIGATION

A study to determine location of conductor failures on tested statorettes was was undertaken to help identify areas of insulation weaknesses for design improvement recommendations. The study was conducted on statorettes No. 1 (350°C) and No. 6 (325°C) wherein aging tests had been completed with failure of all conductor positions.

Faults in new or partially aged electrical windings insulated with organic materials can normally be detected by smoke, burning, or flashing with application of conventional dielectric test equipment. The tested statorettes were, however, essentially void of organic and burnable materials. A 250 Vac high ampere power supply was, therefore, used as a dielectric breakdown test for visual location of conductor fault areas. A fault visually detectable was evident by current discharge, physical rupture of remaining insulation, melt of metal, and/or audible arcing.

The high current test was applied at random to a minimum of five armature conductors for each top-to-frame, bottom-to-frame and top-to-bottom conductor positions. Failure locations were categorized as (1) bottom or top of the slot, and (2) the core connection end, opposite connection end, middle or field coil area. Results for both statorettes are shown in table XXXIII. Hidden faults, that could not be visually detected, were classified as middle core type faults.

Analysis of combined fault locations of both statorettes showed 18.2% of the top conductors tested were faulted at the core ends, 27.3% of the bottom conductors tested were faulted at the core ends, and 75.8% of all tested conductors were faulted in the middle of the core.

SECTION IV

DISCUSSION OF RESULTS

A. INSULATION MEASUREMENTS

The measurement of leakage current, observed at room temperature condition appears to be an acceptable technique for determining insulation life. Room temperature measurements applied to statorettes aged at different temperatures provided data on the same basis for conductor life comparisons. The 600 Vdc limit established for failure corresponds to twice the alternator peak rated voltage. The 2000 micro amperes limit for leakage was established from test experience which demonstrated that the change in current with increased voltage application above this limit is high and, for the configuration and insulations commonly used in aerospace electrical machines or aerospace environmental test conditions, may lead to insulation failure. The insulation life predictions are, therefore, conservative.

"Failure", as defined, was therefore also indicated for conditions when insulation resistance was 0.3 megohms. Correlation is shown between insulation resistance and leakage current measurements at 500 Vdc, but the range of voltages used for the leakage readings provided additional information and a better understanding of insulation change.

The readings observed at test temperature were most sensitive in that incipient failures appeared earlier than the failures observed at the room temperature measurements. However, there was lack of consistency in these data possibly due to thermal expansion effects such as movement of adjacent conductors or insulations.

Corona start voltage measurements obtained at reduced pressure demonstrated this measurement to be useful for monitoring insulation deterioration. As organic constituents in the insulation system pyrolyzed, voids were apparently developed in the system. Application of voltage at reduced pressure will produce ionization in these voids, resulting in corona formation. The more voids, and/or the larger the voids, the lower the voltage at which ionization would occur. Monitoring deterioration of the statorette insulations is depicted with plots of average corona onset voltage data for 350°C, 300°C and 250°C tests in figures 22a, 22b, and 22c, respectively.

B. INSULATION END LIFE

The one-half life rate of 11.3°C established from the statorette test data was used to determine alternator life additional to that accumulated during the NASA turbo-alternator endurance tests. The rate was also used for comparison of life predicted in earlier contract work. This determination and comparison is summarized as follows:

1.	Remaining life at 248°C, from Arrhenius plot, figure 21	60,000 hrs.
2.	Equivalent life at 248°C for NASA reported 23,130 hours endurance tests at the average armature winding temperature of 205°C, by calculation	1,645 hrs.
3.	Total alternator life at 248°C	61,645 hrs.
4.	Predicted total life at NASA reported alternator bus bar temperature of 260°C, from Figure 21 and calculation of equivalent endurance life time	29,600 hrs.
5.	Total life at 205°C, from calculation	863,000 hrs.
6.	Earlier contract work, stator tests previously reported (ref. 1)	
	a) Remaining alternator life at 248°C, determined from stator tests	80,000 hrs.
	b) Equivalent life at 248°C for NASA reported 12,440 hours endurance tests (alternator S/N 481489) at the average winding temperature of 205°C, determined from Arrhenius plot and calculation	1,000 hrs.

c) Total alternator life at 248°C . . . . 81,000 hrs.

7. Temperature to achieve 81,000 hours established from statorette test data reported herein . . . . 244°C

The conclusions reached from this summary analysis include:

1. The 1,645 hours equivalent life achieved during endurance tests is insignificant with respect to altering the Arrhenius life line shown in figure 21.

   Figure 21 is therefore considered acceptable for design and application use for prediction of life or permissive operating temperatures. At least two precautions are suggested in use of these data however:

   a) The data are applicable to the alternator configuration and insulations tested. Configurations unusually different may not provide the same performance.

      The data are based on aging in an environment essentially free of oxygen. Oxidative pyrolysis of the polyimide and epoxy materials would have been accelerated substantially at the elevated test temperatures in a normal air atmosphere.

   b) The data are based on insulation dielectric performance only. Changes in the insulation system properties during service life will alter thermal or mechanical properties so as to affect heat transfer or mechanical strength. These latter properties may become more limiting to the life of the equipment than dielectric properties.

2. Correlation is shown between the results of the earlier contract work (ref. 1) wherein 81,000 hours of life at 248°C was predicted from stator tests and the 61,645 hours determined from statorette tests reported herein.

The technique for determining life expectancy of an insulation system is well known in the electrical insulation technological field. Several IEEE Standards are based on the procedure of aging components at various temperatures to determine time to failure at each temperature; and from these data, an Arrhenius plot of life against temperature is derived. (ref. 3, 4, 5)

The unique feature of the work reported herein is use of a completed machine to obtain test sections for heat aging. Feasibility of this approach and technique has been demonstrated.

Similarly, IEEE Standard No. 101 outlines the mathematical analysis for derivation of the Arrhenius plot, (ref. 7, 8), but this derivation is based on complete failure data. For work reported herein, statistical approaches were applied to incomplete failure data to construct points for the Arrhenius plot.

C. FAILURE LOCATION

A study of test position failure data, shown in table XXX and described in report section III-C.5, and the failure location data reported in section III-E, indicate the majority of failures were between conductors in the slots and within the stator core mid-section. The slot bottom conductors rank close to this majority, with predominance of failures in the core section. The slot top conductors provided longest life. Except for occasional flashover at the bare conductor ends, faults were not located between phases in the end turn regions.

The failure location results were evaluated with respect to the stator configuration, materials, and assembly procedures to establish areas for insulation improvements. The following was concluded:

1. The top-to-bottom conductor insulations may be upgraded by increasing the thickness of the slot phase insulation.

2. The bottom conductor insulation could be improved by providing an insulation strip at the slot bottom, probably 0.010" thick, so as to provide cushion and protection to the slot insulation against lamination edges at the core slot bottom.

3. The top conductor is double insulated at the top of the slot by means of a full fold-over of the slot liner, therefore providing added insulation equivalent to that suggested in Item 2 above. It is speculated the longest coil life of the three positions was achieved for this reason.

   The median life for conductors in the slot top position, determined from data in table XXXII and the Arrhenius plot in figure 23, indicate a dielectric life expectancy at 248°C of approximately 122,200 hours. This, therefore, could be considered a goal for insulation improvements of the other positions for longer alternator life potential.

4. The proposed changes would, no doubt, have impact on the alternator slot design or electromagnetic performance.

SECTION V

CONCLUSIONS

The work objectives detailed in Section I of this report were achieved. These attained objectives include development of an Arrhenius insulation system life-temperature plot, application of select measurements for monitoring deterioration of insulations, integration of NASA reported turbo-alternator endurance test time with time obtained from tests reported herein, and an analysis of failure location data with recommendations for longer life potential.

The significant conclusions reached are as follows:

1. An Arrhenius dielectric life-temperature plot with a one-half life rate of 11.3°C was established for the armature insulation system of the endurance tested alternator. The rate was established from statorette tests conducted at five aging temperatures.

2. A mean dielectric life of 58.78 and 333.33 hours was determined from tests completed at 350°C and 325°C respectively. A mean life of 1520, 7900 and 30000 hours was determined from data on incomplete tests using life probability plots for the respective test temperatures of 300°C, 275°C and 250°C.

3. A remaining dielectric life of 60,000 hours at 248°C is predicted for the tested alternator. The temperature of 248°C was selected during previous contract work as a base for data comparisons.

   The 60,000 hours established by statorette tests correlates reasonably well with the 80,000 hours determined by stator tests from previous contract work.

   The equivalent life for the 23,130 hours endurance tests at 205°C was determined to be 1,645 hours at 248°C. Total alternator dielectric life at 248°C was therefore determined to be 61,645 hours.

4. A procedure was established for obtaining insulation dielectric life data for Arrhenius life-temperature plots from a completed alternator stator. The procedure involves accelerated thermal aging tests on carefully divided sections of the completed stator.

5. An increase in insulation thickness for the top-to-bottom conductor position was included with recommendations to achieve longer dielectric life potential. This conductor position was determined to be the limiting one for longer life. The top conductor-to-frame position provided longest life and suggests this longer life could be achieved by improvement of all conductor positions to the conductor-to-frame life level.

TABLES AND FIGURES

COMPILATION AND PRESENTATION OF DATA

TABLE I -- SNAP-8 ALTERNATOR RATING AND PERFORMANCE CHARACTERISTICS

General Electric Model:	2CM391B1
Design Specification:	Aerojet General Corp. AGC-10175A (31 March 1965) Under NASA Contract NAS5-417
Rating:	80 kVA, 0.75 P.F., 120/208 Volts, 400 Hz, 3 Phase -- 3 Wire, 12000 RPM

Electrical Characteristics:

Wave form, total rms harmonic content, Line-to-line at 1.0 P.F.	2.33%
Efficiency, 80 kVA, 0.75 P.F.	87.5%
Excitation, 80 kVA, 0.75 P.F.	43.3 Volts, 19.6 Amps
Winding symmetry, voltage difference between phases	$<$1 Volt

Mechanical Characteristics:

Cooling oil	Polyphenyl ether
Oil inlet temperature	96°C
Oil outlet temperature	110°C
Oil inlet pressure	21.9 psia (15.1×10^4 N/M^2)
Oil outlet pressure	8.3 psia (57.2×10^3 N/M^2)
Oil flow	2.84 gpm (1.79×10^{-4} m^3/sec.)

Thermal Characteristics (Rated Load):

Armature end turn winding temperature, hot spot	186°C
Armature bus bar end turn temperature, hot spot	208°C
Field winding temperature, hot spot	162°C

Weight:

Structural	235 Pounds
Electromagnetic	211 Pounds
Total	446 Pounds

Envelope, Max.

Length	21.7"
Diameter, frame	12.2"
Diameter, Over Terminals	16.8"

Design Life: 10,000 hours (3.6×10^6 seconds) continuous, unattended operation at rated load.

Design Environment:

Cavity pressure	0.05 mm Hg (6.66 N/M^2)
Radiation level	5×10^{13} nvt fast neutrons and 10^7 rads (10^5 J/Kg) gamma total dosage.

TABLE II - ALTERNATOR INSULATIONS AND CONDUCTOR MATERIALS--ARMATURE

Component	MATERIAL DESCRIPTION			SOURCE	
	Size	Composition	General Electric Co. Designation*	Commercial Source	Mfg's Designation
1. Slot insulation	.0105"	Aromatic polyimide impregnated and coated glass cloth	A22L16A5	EI DuPont Co., Fairfield, Conn.	#6508-0105
2. Conductor	.125" x .212"	Heavy coated aromatic polyimide insulated rect OFHC copper	B50WB310E	General Electric Co., SAC-Wire Section Schenectady, N.Y.	"HML"
3. Slot phase insulation	.016"	Silicone-glass laminate	A19B22A1	General Electric Co., Coshocton, Ohio	#11556 "Textolite"
4. Insulation end punchings	.020" 3 per end	Silicone-glass laminate	A19B22A1	General Electric Co., Coshocton, Ohio	#11556 "Textolite"
5. Top-sticks	36A227152 .032" thick	Aromatic polyimide	A50WB381A	EI DuPont Co., Wilmington, Delaware	"Vespel"
6. Coil side end turn phase insulation	#3 AWG	Heat cleaned fiber glass sleeving	A50WB304A	Bentley Harris Mfg. Co., Conshohocken, Pa.	"BH Special Treated"
7. Coil top-to-bottom end turn phase insulation	.0105"	Aromatic polyimide impregnated and coated glass cloth	A22L16A5	EI DuPont Co., Fairfield, Conn.	#6508-0105
8. Lead cable - power leads	#8 AWG (3 per phase)	Glass braid, reinforced mica insulated OFHC	B50WB317A8	Rockbestos Wire & Cable Co., New Haven, Conn.	"Mica-Temp"
9. Lead and phase joint insulation	.0065" (3 layers)	Pressure sensitive thermosetting silicone adhesive coated glass cloth tape	A23B5A3	Minnesota Mining and Mfg. Co., Irvington Div.	"Scotch" #69
	Plus - .005" (3 layers)	Heat cleaned fiber glass woven tape	A50WB374A	Hess, Goldsmith & Co., New York, N.Y.	

TABLE II - ALTERNATOR INSULATIONS AND CONDUCTOR MATERIALS--ARMATURE

Component	MATERIAL DESCRIPTION Size	Composition	General Electric Co. Designation	SOURCE Commercial Source	Mfg's Designation
10. Inter-coil joint insulation	3/8" dia.	Heat cleaned fiber glass sleeving	A50WB304A	Bentley Harris Mfg. Co., Conshohocken, Pa.	"BH Special Treated"
	Plus - Compound	Black, filled thixo-tropic epoxy Novolac resin compound	A50WB364A	General Electric Co., DCM&G Dept., Erie, Pa.	
11. Winding im-pregnation	Compound	Thin, clear, unfilled epoxy Novolac resin compound	A50WB363A	General Electric Co., DCM&G Dept., Erie, Pa.	
12. Insulation end punching cement	Compound	Thin, clear, unfilled epoxy Novolac resin compound	A50WB365A	General Electric Co., DCM&G Dept., Erie, Pa.	
13. Fill between stator core sections	Compound	Black, filled thixo-tropic epoxy Novolac resin compound	A50WB364A	General Electric Co., DCM&G Dept., Erie Pa.	
14. Reinforcement to Item #13	.007"	Leno weave, heat cleaned glass cloth tape (3 layers)	A22L14A	Columbia Electric Tape & Mfg. Co. - Phila-delphia, Pa.	
15. Bus conductors	.080 x .500	Heavy coated aromatic polyimide insulated rect. OFHC copper	B50WB310E	General Electric Co., SAC Wire Section Schenectady, New York	"HMI"
16. Bus insulation	.0105"	Aromatic polyimide im-pregnated and coated glass cloth	A22L16A5	EI DuPont Co. Fairfield, Conn.	6508-0105
	Plus - .005" (3 layers)	Heat cleaned fiber glass tape	A50WB374A	Hess, Goldsmith & Co.	
17. Lead cable - phase equalizer leads	#12 AWG (one per phase)	Glass braid, reinforced mica insulated OFHC copper stranded cable	B50WB317A12	Rockbestos Wire & Cable Co., New Haven Conn.	"Mica-Temp"

* Revised from designations shown in Report, Reference 1.

TABLE III - ALTERNATOR INSULATIONS AND CONDUCTOR MATERIALS--FIELD

Component	MATERIAL DESCRIPTION			SOURCE	
	Size	Composition	General Electric Co. Designation*	Commercial Source	Mfg's Designation
1. Coil Box Bottom	.0055"	Aromatic polyimide impregnated and coated fiber glass cloth	A22L16A2	EI DuPont Co., Fairfield, Conn.	#6507-0055
2. Box corner fill	.026" dia.	Untreated glass cord	A4L1B2	Owens-Corning Fiberglass Corporation	EC9-20
3. Box side lead Insulation		Silicone-glass Laminate	A19B22A1	General Electric Co. Coshocton, Ohio	#11556 Textolite
	Plus - #13 AWG	Aromatic polyimide coated fiber glass sleeving	A50CD307A	Bentley Harris Mfg. Co., Conshohocken, Pa.	"Ben Har 963 ML"
	Plus - #9 AWG	Aromatic polyimide coated fiber glass	A50CD307A	Bentley Harris Mfg. Co., Conshohocken, Pa.	"Ben Har 963 ML"
4. Conductor	.0720" dia.	Heavy coated aromatic polyimide insulated round OFHC copper	B50WB312E	General Electric Co., SAC Wire Section Schenectady, New York	HMI
5. Coil box liner cement	Compound	Thin, clear, unfilled epoxy Novolac resin compound	A50WB363A	General Electric Co., DCM&G Dept., Erie, Pa.	
6. Conductor bond	Compound	Black, filled thixotropic epoxy Novolac resin compound	A50WB364A	General Electric Co., DCM&G Dept., Erie, Pa.	
7. Insulation between coil O.D. and copper band	.0055" (2 layers)	Aromatic polyimide impregnated and coated fiber glass cloth	A22L16A2	EI DuPont Co., Fairfield, Conn.	#6507-0055
8. Lead cable - power lead	#12 AWG	Glass braid, reinforced mica insulated OFHC copper stranded cable	B50WB317A12	Rockbestos Wire & Cable Co., New Haven, Conn.	"Mica-Temp"

* Revised from designations shown in Report, Reference 1.

TABLE IV - TEST EQUIPMENT

FUNCTION	EQUIPMENT DESCRIPTION
1. Altitude & Corona	Air Research Environmental Chamber
2. Heat Aging	Despatch High Velocity Ovens Models: V31SD, Ser. 76138 V31 Ser. 39945 V31 Ser. 47180 Mfg. Despatch Oven Co. Minneapolis, Minn.
3. Vibration Simulation	Syntron Model VC-30 Serial No. A56017 Mfg. Syntron Co. Homer City, Penna.

Test equipment was calibrated prior to initiation of tests and at termination of tests in accordance with MIL-C-45662.

TABLE V - TEST INSTRUMENTATION

Test Parameter	Instrument Description
1. Continuity Measurements	Simpson V-O-M Model 260 Simpson Electric Co. Chicago, Illinois
2. Insulation Resistance	Megger Insulation Tester Mfg. Type No. 500 Vdc James Biddle Co. Insulation Tester, Model 29 Twenty Million Megohmmeter H. Sticht & Co. New York City, New York
3. D. C. Leakage Current	Takk D. C. Leakage Tester Model 86, Ser. 111 Takk Corp., Newark, Ohio
4. Corona Onset Voltage	G. E. High Voltage Pwr Supply Cat. 153X238. Ser. No. D938553 coupled with an Addison Discharge Scope Detector, Type AC2 Ser. 5651 Addison Electric, London
5. Mechanical Vibration	Columbia Charge Amplifier Columbia Research Labs Woodlyn, Penna.
6. A.C. High Potential Measurements	High Potential Tester AC Type Catalog No. 98921156 General Electric Co.
7. Gas Analysis	Gas Chromatograph, Model 900 Perkin Elmer Corp. Norwalk, Conn.
All instrumentation was calibrated prior to initiation of tests and at termination of tests in accordance with MIL-C-45662.	

TABLE VI - INITIAL MEASUREMENTS - INSULATION RESISTANCE & DC LEAKAGE

Stator No. 1 S/N 481490

Test Component Position	Test Temp. - °C	Insulation Resistance, Ohms (Megger at 500 Vdc)	DC Leakage, micro-amperes Volts, dc 200	400	600	800	1000
Field Winding, F1 to Frame	24	$130,000 \times 10^6$	0	0	0	0	0
	40	$115,000 \times 10^6$	0	0	0	0	0
	80	$26,000 \times 10^6$	0	0	0	0	1.0
	120	$1,200 \times 10^6$	0	0	.5	1.0	1.5
	160	59×10^6	3.0	7.5	12	15	18
	200	1.75×10^6	100	250	425	500	615
Armature Winding T4 to Frame	24	$180,000 \times 10^6$	0	0	0	0	0
	40	$52,000 \times 10^6$	0	0	0	0	0
	80	$30,000 \times 10^6$	0	0	0	0	0
	120	$7,200 \times 10^6$	0	0	0	0	.25
	160	$2,400 \times 10^6$	0	0	.5	.75	1.0
	200	550×10^6	.75	2.5	3.5	4.0	6.0
Armature to Field Winding, T4 to F1	24	$1,200,000 \times 10^6$	0	0	0	0	0
	40	$390,000 \times 10^6$	0	0	0	0	0
	80	$54,000 \times 10^6$	0	0	0	.5	.5
	120	$18,000 \times 10^6$	0	0	0	.5	.75
	160	$2,700 \times 10^6$	0	0	0	.5	1.5
	200	410×10^6	1.5	2.0	3.5	6.0	6.5

TABLE VII - INITIAL CORONA ONSET VOLTAGE

Stator No. 1 S/N 481490

Test Component Position, Measurement	Corona Onset Voltage, Volts AC RMS Initial, As Rec'd. at Sea Level Pressure and 23°C
Field Winding, F1 to Frame	700 *
Armature Winding, T4 to Frame	700 *
Armature to Field Windings, T4 to F1	700 *

* 700 Volt AC application limit to prevent possible insulation damage; corona was not observed.

TABLE VIII - STATORETTE INITIAL MEASUREMENTS - DC LEAKAGE CURRENT

Test/Component Position, Measurement		DC Leakage, micro-amperes																													
		Statorette No. 1						Statorette No. 2						Statorette No. 3						Statorette No. 4						Statorette No. 6					
		23°C						23°C						23°C						23°C						23°C					
		Volts, dc						Volts, dc						Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T					.5	.75																								
	2T																														
	3T					.5	.75																								
	4T																														
	5T		All measurements zero						All measurements zero						All measurements zero												All measurements zero				
	6T		except as shown						except as shown						except as shown						All measurements zero						except as shown				
	7T																				except as shown										
	8T																														
	9T																														
	10T																														
	11T																														
	1B																														
	2B						.5																								
	3B																														
	4B																														
	5B		All measurements zero						All measurements zero						All measurements zero																
	6B		except as shown						except as shown						except as shown																
	7B																				All measurements zero						All measurements zero				
	8B																				except as shown						except as shown				
	9B																														
	10B																														
	11B																														
Armature Conductor-to-Conductor	1T-1B																														
	2T-2B																														
	3T-3B																														
	4T-4B																														
	5T-5B		All measurements zero						All measurements zero						All measurements zero																
	6T-6B		except as shown						except as shown						except as shown						All measurements zero						All measurements zero				
	7T-7B																				except as shown						except as shown				
	8T-8B																														
	9T-9B																														
	10T-10B																														
	11T-11B																														

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

TABLE IX - STATORETTE THERMAL STABILIZATION, AFTER
24 HOURS AT 200°C
DC LEAKAGE CURRENT
MEASURED AT 200°C

Test Component Position, Measurement	Cond. No.	DC Leakage, Microamperes																	
		Statorette No. 1						Statorette No. 2						Statorette No. 3					
		Volts, dc						Volts, dc						Volts, dc					
		200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	All measurements zero except as shown				.5	.75		All measurements zero except as shown						All measurements zero except as shown				
	7T																		
	8T					.5	.75												
	6B																		
	7B						.5												.5
	8B																		
Armature Cond.-to-Cond.	6T-6B	All measurements zero except as shown							All measurements zero except as shown						All measurements zero except as shown				
	7T-7B																		
	8T-8B																		

Test Component Position, Measurement	Cond. No.	DC Leakage Microamperes											
		Statorette No. 4						Statorette No. 6					
		Volts, dc						Volts, dc					
		200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	All measurements zero except as shown						0	0	0	0	0	.5
	7T							0	.25	.5	.75	1.0	1.0
	8T							0	0	0	.5	.75	1.0
	6B							0	0	0	0	.75	1.0
	7B							0	0	0	.5	.75	1.25
	8B							0	0	0	0	.75	1.0
Armature Cond.-to-Cond.	6T-6B	All measurements zero except as shown						0	0	0	0	0	0
	7T-7B							F	-	-	-	-	-
	8T-8B							F	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

TABLE X - STATORETTE THERMAL STABILIZATION, AFTER
24 HOURS AT 200°C
INSULATION RESISTANCE AT 500 Vdc
MEASURED AT 200°C

Test Component Position, Measurement		Insulation Resistance - ohms					
	Cond. No.	Statorette No. 1	Statorette No. 2	Statorette No. 3	Statorette No. 4	Statorette No. 5	Statorette No. 6
Armature Conductor-to-Frame	6T						
	7T						
	8T						
	6B		ALL MEASUREMENTS INFINITY EXCEPT AS SHOWN				
	7B						
	8B						
Armature Cond.-to-Cond.	6T-6B						0
	7T-7B						0
	8T-8B						0

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

TABLE XI - STATORETTE INITIAL MEASUREMENTS - CORONA ONSET VOLTAGE AT ROOM TEMPERATURE AND SIMULATED ALTITUDE

Test Component Position, Measurement		Corona Onset Voltage, Volts AC RMS					
		Statorette No. 1		Statorette No. 2		Statorette No. 3	
		Pressure at 23°C		Pressure at 23°C		Pressure at 23°C	
	Cond. No.	Sea Level	4.5 TORR*	Sea Level	4.5 TORR*	Sea Level	4.5 TORR*
Armature Conductor-to-Frame	6T	650	450	700**	450	450	300
	7T	700**	550	500	300	700**	550
	8T	700**	550	500	250	550	350
	6B	350	200	650	500	650	0
	7B	500	300	700**	650	350	200
	8B	600	450	700**	600	450	300
Armature Cond.-to-Cond.	6T-6B	700**	500	700**	650	650	450
	7T-7B	650	550	700**	200	550	400
	8T-8B	700**	600	700**	650	700**	550

Test Component Position Measurements		Corona Onset Voltage, Volts AC RMS			
		Statorette No. 4		Statorette No. 6	
		Pressure at 23°C		Pressure at 23°C	
	Cond. No.	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *
Armature Conductor-to-Frame	6T	700**	650	700**	550
	7T	700**	600	350	200
	8T	550	350	450	300
	6B	250	200	600	500
	7B	300	200	650	450
	8B	200	0	700**	500
Armature Cond.-to-Cond.	6T-6B	400	200	700**	500
	7T-7B	350	200	700**	550
	8T-8B	700**	450	650	600

* Equivalent pressure for 100,000 feet at 250°C

** 700 volt AC application limit to prevent possible insulation damage; corona was not observed.

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

TABLE XII - STATORETTE ACCELERATED AGING - 350°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 1

Sheet 1 of 8

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	1						2						3					
	Accumulated Hours	4						8						12					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	7T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8B	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	.25	.5
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.5
Armature Conductor-to-Conductor	1T-1B	0	0	0	0	0	.25	0	0	0	0	0	.5	0	0	0	0	.25	.5
	2T-2B	0	0	0	0	0	0	0	0	0	0	0	.5	0	0	0	0	0	.5
	3T-3B	0	0	0	0	0	.25	0	0	0	0	0	.5	0	0	0	0	0	.75
	4T-4B	0	0	0	0	0	.25	0	0	0	0	0	.5	0	0	0	0	.25	.5
	5T-5B	0	0	0	0	0	0	0	0	0	0	0	.5	0	0	0	0	.25	.5
	6T-6B	0	0	0	0	0	0	0	0	0	0	.5	.75	0	0	0	0	.5	.75
	7T-7B	0	0	0	0	0	0	0	0	0	0	0	.5	0	0	0	0	.25	.5
	8T-8B	0	0	0	0	0	0	0	0	0	.5	.75	.75	0	0	0	.25	1.0	1.5
	9T-9B	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	.5	.75
	10T-10B	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	.25	.5
	11T-11B	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	.25	.5

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XII - STATORETTE ACCELERATED AGING - 350°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 1

Sheet 2 of 8

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	4						5						6					
	Accumulated Hours	16						20						24					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6T	0	0	0	0	0	.25	0	0	0	0	0	.25	0	0	0	0	0	.25
	7T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8T	0	0	0	0	0	.25	0	0	0	0	0	.25	0	0	0	0	0	0
	9T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T	0	0	0	0	0	.25	0	0	0	0	.25	.5	0	0	0	.25	.5	.75
	11T	0	0	0	0	0	.25	0	0	0	.25	.5	.75	0	0	0	.5	.75	1.0
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8B	0	0	0	0	0	.25	0	0	0	0	.25	.5	0	0	0	.25	.5	.75
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	.25	.75	0	0	0	0	.25	.5	0	0	0	0	0	.75
Armature Conductor-to-Conductor	1T-1B	0	0	0	0	.5	.75	0	0	0	0	.5	.75	0	0	0	.25	.5	.75
	2T-2B	0	0	0	0	.25	.75	0	0	0	0	.5	.75	0	0	0	0	.5	.75
	3T-3B	0	0	0	.25	.5	.75	0	0	0	.25	.5	1.0	0	0	0	.25	.5	1.5
	4T-4B	0	0	0	0	.5	.75	0	0	.25	.5	.75	.75	0	0	.25	.5	.75	1.5
	5T-5B	0	0	0	0	.5	.75	0	0	0	0	.5	.75	0	0	0	.5	.75	1.0
	6T-6B	0	0	0	0	.25	.5	0	0	0	0	.25	.5	0	0	0	0	.5	1.0
	7T-7B	0	0	0	0	.25	.75	0	0	0	.25	.5	.75	0	0	0	.25	.5	.75
	8T-8B	0	0	0	0	1.0	1.25	0	0	0	.5	.75	1.0	0	0	0	.5	.75	1.5
	9T-9B	0	0	0	0	.5	.75	0	0	0	0	.5	.75	0	0	0	0	.5	.75
	10T-10B	0	0	0	0	.25	.5	0	0	0	0	.25	.5	0	0	0	0	.25	.5
	11T-11B	0	0	0	0	.25	.5	0	0	0	0	.5	.75	0	0	0	0	.5	.75

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XII - STATORETTE ACCELERATED AGING - 350°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 1

Sheet 3 of 8

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	7						8						9					
	Accumulated Hours	28						32						36					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6T	0	0	0	0	0	.25	0	0	0	0	0	.25	0	0	0	0	0	0
	7T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T	0	0	0	.25	.5	1.0	0	0	0	.25	.5	1.0	0	0	0	0	0	0
	11T	0	0	0	.5	.75	1.5	0	0	0	.5	.75	1.5	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8B	0	0	0	.25	.5	.75	0	0	0	.25	.5	.75	0	0	0	0	0	0
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	.5	.75	0	0	0	0	.25	.75	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	0	0	0	.25	.5	1.0	0	0	0	.25	.5	1.25	0	0	0	0	.25	.5
	2T-2B	0	0	0	0	.5	1.0	0	0	0	0	.25	1.25	F	-	-	-	-	-
	3T-3B	0	0	0	.5	.75	1.5	0	0	0	.25	.5	1.0	40	750	F	-	-	-
	4T-4B	0	0	.25	.5	1.0	1.5	0	0	0	.5	1.25	1.5	0	0	0	.5	1.5	2.0
	5T-5B	0	0	0	.5	1.0	1.5	0	0	0	.5	1.0	1.25	0	0	0	.25	1.0	1.5
	6T-6B	0	0	0	0	.25	.75	0	0	0	.25	.5	.75	0	0	0	0	0	0
	7T-7B	0	0	0	.25	.5	.75	0	0	0	.25	.5	.75	0	0	0	0	0	0
	8T-8B	0	0	0	.5	.75	1.0	0	0	0	.5	.75	1.5	0	0	0	0	0	.25
	9T-9B	0	0	0	0	.75	1.0	0	0	0	0	.5	1.0	0	0	0	0	.25	.5
	10T-10B	0	0	0	0	.25	.75	0	0	0	0	.5	.75	0	0	0	0	.5	1.0
	11T-11B	0	0	0	0	.5	.75	0	0	0	.25	.5	.75	0	0	0	0	.25	.5

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XII - STATORETTE ACCELERATED AGING - 350°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 1

Sheet 4 of 8

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	10						11						12					
	Accumulated Hours	40						44						48					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	.25	.5	0	0	.75	1.5	4.0	6.0	0	0	.5	1.75	3.0	4.5
	6T	0	0	0	0	0	.25	0	0	0	.75	16	40	0	0	0	0	0	F
	7T	0	0	0	0	0	.5	0	0	0	0	0	.75	0	0	0	0	F	-
	8T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	125	F
	9T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	0	0	0	0	.25	.75	0	0	0	0	0	.5	0	0	0	0	0	0
	5B	0	0	0	0	0	.5	0	0	0	.75	1.5	4.0	0	0	0	.25	6.0	15
	6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	50	165	F
	7B	0	0	0	0	0	.25	0	0	0	0	0	.5	0	0	0	.5	.75	6.0
	8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	35	1300
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10B	0	0	0	0	0	0	0	0	0	0	.25	.75	0	0	.25	1.5	3.0	8.0
	11B	0	0	0	0	0	0	0	0	0	.5	40	15	0	.5	.75	40	185	F
Armature Conductor-to-Conductor	1T-1B	0	0	0	.25	.5	.75	0	0	6.0	35	60	1300	0	0	.5	F	-	-
	2T-2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T-3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T-4B	0	.5	20	85	95	120	0	25	150	350	1000	1600	0	.5	.75	160	F	-
	5T-5B	0	0	.5	.75	1.0	1.75	0	0	1.5	1.75	2.0	2.5	0	0	2.0	30	180	F
	6T-6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5	.75	1.0	15
	7T-7B	0	0	0	0	0	.25	0	0	0	0	.5	.75	0	25	40	85	165	320
	8T-8B	0	0	0	0	0	.25	0	0	0	0	.25	.75	0	0	0	.5	3.5	7.0
	9T-9B	0	0	0	.5	.75	1.5	0	0	0	.5	1.5	2.0	0	0	0	1.75	F	-
	10T-10B	0	0	0	0	.5	1.5	0	0	0	1.0	3.0	F	0	0	.5	.75	F	-
	11T-11B	0	0	0	.25	.75	3.0	0	0	0	0	0	F	0	0	0	.5	.75	F

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XII - STATORETTE ACCELERATED AGING - 350°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 1

Sheet 5 of 8

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	13						14						15					
	Accumulated Hours	52						56						60					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	0	0	0	0	0	F	-	-	-	-	-	-	-	-
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T	0	0	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T	0	0	0	.5	F	-	0	0	0	F	-	-	-	-	-	-	-	-
	9T	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	0	0
	10T	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	.25	.5
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	0	0	0	0	F	-	-	-	-	-	-	-	-
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5B	0	.25	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6B	0	50	650	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7B	0	0	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	0	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10B	0	500	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11B	0	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Armature Conductor-to-Conductor	1T-1B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2T-2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T-3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T-4B	0	0	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5T-5B	0	0	0	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T-6B	0	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T-7B	0	500	1300	1800	F	-	0	1600	F	-	-	-	-	-	-	-	-	-
	8T-8B	0	0	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T-9B	0	500	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T-10B	200	800	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T-11B	0	0	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XII - STATORETTE ACCELERATED AGING - 350°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 1

Sheet 6 of 8

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	16						17						18					
	Accumulated Hours	64						68						72					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2T	30	80	100	150	F	-	65	80	F	-	-	-	-	-	-	-	-	-
	3T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	5T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T	0	0	0	0	0	F	0	0	0	0	0	F	0	0	0	0	F	-
	10T	0	0	0	0	0	.5	0	0	0	0	.25	.5	0	0	0	0	.5	1.25
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.5	1.0
	1B	0	0	0	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2B	0	0	0	0	F	-	0	0	0	0	F	-	.5	.75	6.5	F	-	-
	3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4B	0	0	0	0	0	F	0	0	0	0	0	F	0	.25	.5	1.5	2.0	F
	5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9B	0	0	0	0	0	F	0	0	0	0	F	-	0	0	0	F	-	-
	10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Armature Conductor-to-Conductor	1T-1B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2T-2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T-3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T-4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5T-5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T-7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T-9B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T-10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T-11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XII - STATORETTE ACCELERATED AGING - 350°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 1

Sheet 7 of 8

DC Leakage, Micro-amperes

Test Component Position, Measurement	Cycle	19						20						21					
	Accumulated Hours	76						80						84					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T	0	0	0	0	F	-	0	0	F	-	-	-	-	-	-	-	-	-
	5T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T	0	0	0	0	F	-	0	0	0	F	-	-	-	-	-	-	-	-
	10T	0	0	0	0	.75	1.5	0	.5	80	150	175	220	0	.25	10	185	350	375
	11T	0	0	.25	.5	.75	2.0	0	0	.75	1.5	2.0	3.5	0	.5	.75	2.25	40	150
	1B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4B	0	.25	.5	1.5	3.0	F	0	0	.5	F	-	-	-	-	-	-	-	-
	5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Armature Conductor-to-Conductor	1T-1B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2T-2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T-3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T-4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5T-5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T-7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T-9B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T-10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T-11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XII - STATORETTE ACCELERATED AGING - 350°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 1

Sheet 8 of 8

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	22						23											
	Accumulated Hours	88						92											
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	-	-	-	-	-	-	-											
	2T	-	-	-	-	-	-	-											
	3T	-	-	-	-	-	-	-											
	4T	-	-	-	-	-	-	-											
	5T	-	-	-	-	-	-	-											
	6T	-	-	-	-	-	-	-											
	7T	-	-	-	-	-	-	-											
	8T	-	-	-	-	-	-	-											
	9T	-	-	-	-	-	-	-											
	10T	0	15	65	185	650	1300	F											
	11T	0	1.5	3.0	35	65	1800	F											
	1B	-	-	-	-	-	-	-											
	2B	-	-	-	-	-	-	-											
	3B	-	-	-	-	-	-	-											
	4B	-	-	-	-	-	-	-											
	5B	-	-	-	-	-	-	-											
	6B	-	-	-	-	-	-	-											
	7B	-	-	-	-	-	-	-											
	8B	-	-	-	-	-	-	-											
	9B	-	-	-	-	-	-	-											
	10B	-	-	-	-	-	-	-											
	11B	-	-	-	-	-	-	-											
Armature Conductor-to-Conductor	1T-1B	-	-	-	-	-	-	-											
	2T-2B	-	-	-	-	-	-	-											
	3T-3B	-	-	-	-	-	-	-											
	4T-4B	-	-	-	-	-	-	-											
	5T-5B	-	-	-	-	-	-	-											
	6T-6B	-	-	-	-	-	-	-											
	7T-7B	-	-	-	-	-	-	-											
	8T-8B	-	-	-	-	-	-	-											
	9T-9B	-	-	-	-	-	-	-											
	10T-10B	-	-	-	-	-	-	-											
	11T-11B	-	-	-	-	-	-	-											

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XIII - STATORETTE ACCELERATED AGING - 350°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 1

Sheet 1 of 4

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	1						2					
	Accumulated Hours	4						8					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	250	400	475	525	700	F	165	45	55	65	85	110
	7T	550	825	900	1000	1250	1500	17	60	90	F	-	-
	8T	550	950	1350	F	-	-	18	60	85	105	180	390
	6B	500	950	1150	1200	1500	1900	16.5	48	60	70	110	160
	7B	250	500	700	1200	1800	1950	14.5	40	50	60	78	110
	8B	F	-	-	-	-	-	14.5	45	55	68	100	165
Armature Cond.-to Cond.	6T-6B	350	625	700	825	1150	1450	44	80	95	113	150	195
	7T-7B	300	700	F	-	-	-	28	50	63	72	95	120
	8T-8B	725	1300	1450	1975	F	-	143	400	575	700	1000	1400

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	3						4					
	Accumulated Hours	12						16					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	8.5	16.25	28	32	48	60	2.5	3.5	5.5	7.0	8.5	12
	7T	34	110	F	-	-	-	2.0	3.5	F	-	-	-
	8T	15	54	70	80	120	170	3.5	6.5	9.0	11.0	18	30
	6B	11	30	38	45	65	87	4.0	6.5	7.25	9.0	12.5	18
	7B	7	15.5	35	40	45	60	4.0	6.0	6.75	12.0	15.0	22
	8B	10	32	35	42	65	90	3.5	5.0	7.0	8.5	12.5	18.5
Armature Cond.-to-Cond.	6T-6B	12	35	40	50	68	90	6.0	8.5	10.75	13.5	23	35
	7T-7B	8	22	28	35	48	60	2.75	4.75	5.75	7.0	9.5	150
	8T-8B	65	125	155	187	350	750	18.0	55.0	65	92	135	240

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XIII - STATORETTE ACCELERATED AGING - 350°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 1

Sheet 2 of 4

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	5						6					
	Accumulated Hours	20						24					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	2.25	2.5	2.75	3.0	85	4.5	1.5	2.75	7.5	16	40	1300
	7T	.75	1.25	2.25	2.75	F	-	4.75	5.0	7.5	150	320	F
	8T	1.0	2.0	2.6	3.25	5.0	8.25	1.5	2.0	2.25	3.5	4.5	8
	6B	.75	1.75	2.25	2.75	3.75	5.0	.75	1.5	1.5	1.75	2.5	2.75
	7B	.75	1.0	1.5	1.75	2.5	3.25	.5	.75	1.0	1.5	2.0	2.5
	8B	1.0	1.75	2.0	2.75	3.5	5.0	.75	1.0	1.25	1.5	2.0	2.5
Armature Cond.-to-Cond	6T-6B	2.0	3.5	4.5	5.25	7.5	10	1.0	1.5	1.75	2.0	2.25	3.0
	7T-7B	.75	1.5	1.75	2.0	3.0	4.25	.5	.75	1.0	1.5	1.75	2.0
	8T-8B	5.25	10.5	13.5	22.0	32.0	4.7	1.5	2.0	3.5	4.0	6.0	7.5

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	7						8					
	Accumulated Hours	28						32					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	1.75	2.5	7.5	9.0	150	F	2.5	5.5	7.0	8.75	13.5	F
	7T	5.0	5.75	185	F	-	-	11.0	50	75	110	F	-
	8T	.75	1.0	2.5	3.0	3.75	5.0	1.0	1.75	2.5	3.0	6.0	9.5
	6B	.5	.75	1.5	1.75	2.0	2.5	F	-	-	-	-	-
	7B	.5	.75	1.0	1.75	2.5	3.0	1.25	14.5	F	-	-	-
	8B	.25	.5	.75	1.0	1.5	2.0	1.5	3.75	5.0	8.5	F	-
Armature Cond.-to-Cond.	6T-6B	.5	.75	.75	.75	1.0	1.25	1.5	3.75	5.25	7.0	14.25	35
	7T-7B	.25	.5	.75	1.0	1.5	1.75	8.0	30	70	110	F	-
	8T-8B	.75	1.5	2.25	3.0	4.75	7.0	F	-	-	-	-	-

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XIII - STATORETTE ACCELERATED AGING - 350°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 1

Sheet 3 of 4

Test Component Position, Measurement	Cond. No.	DC Leakage, Micro-amperes											
	Cycle	9						10					
	Accumulated Hours	36						40					
		Volts, dc						Volts, dc					
		200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	0	.75	1.0	1.25	1.5	3.0	15	65	120	210	F	-
	7T	.5	1.0	1.5	1.75	2.75	3.75	8	15	17.5	50	90	1650
	8T	.25	1.0	1.25	1.75	2.75	4.0	4	35	F	-	-	-
	6B	.5	1.5	2.0	3.0	4.75	7.5	.75	1.25	2.0	2.5	3.75	6.0
	7B	.75	1.75	2.5	3.25	4.75	7.25	.75	1.5	1.75	2.25	3.75	5.5
	8B	.75	1.75	2.5	3.5	4.75	9.0	.6	1.5	1.75	2.0	3.5	6.0
Armature Cond.-to-Cond.	6T-6B	.5	.75	.75	1.0	1.5	1.75	.5	1.5	2.0	2.25	3.75	5.75
	7T-7B	.25	.75	1.0	1.25	1.5	15	.5	1.25	1.75	2.0	3.5	5.0
	8T-8B	.5	1.25	1.6	2.0	2.25	2.25	.65	1.25	1.5	2.0	3.25	5.0

Test Component Position, Measurement	Cond. No.	DC Leakage, Micro-amperes											
	Cycle	11						12					
	Accumulated Hours	44						48					
		Volts, dc						Volts, dc					
		200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	.85	3.0	4	7	18	25	0	.5	1.75	F	-	-
	7T	1.5	3.0	6.5	9.0	25	F	50	F	-	-	-	-
	8T	F	-	-	-	-	-	-	-	-	-	-	-
	6B	.5	1.5	2.0	2.5	4.0	6.25	0	0	.25	1.5	F	-
	7B	.75	1.5	2.25	3.0	4.5	6.0	0	.25	.5	.75	6.5	10
	8B	F	-	-	-	-	-	-	-	-	-	-	-
Armature Cond.-to-Cond.	6T-6B	.5	1.25	2.0	2.5	3.5	5.0	0	1.5	2.0	4	10	25
	7T-7B	.75	1.5	2.0	2.5	4.25	5.5	.25	.75	12	20	F	-
	8T-8B	.75	1.75	2.25	2.5	4.0	5.25	0	0	.5	.75	4.5	6

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XIII - STATORETTE ACCELERATED AGING - 350°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 1

Sheet 4 of 4

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	13						14					
	Accumulated Hours	52						56					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	0	.75	1.0	F	-	-	F	-	-	-	-	-
	7T	75	F	-	-	-	-	8.0	45	F	-	-	-
	8T	10	F	-	-	-	-	1800	F	-	-	-	-
	6B	0	.5	.5	F	-	-	110	350	F	-	-	-
	7B	0	.5	.6	1.5	6.0	15	250	950	F	-	-	-
	8B	.5	6.0	10	1350	F	-	750	F	-	-	-	-
Armature Cond.-to-Cond.	6T-6B	0	2	3.5	5.5	11.0	30	135	F	-	-	-	-
	7T-7B	.5	.75	13	25	F	-	350	1850	F	-	-	-
	8T-8B	0	.5	.5	3	4.5	6	F	-	-	-	-	-

Measurements Discontinued After the 14th Cycle

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XIV - STATORETTE ACCELERATED AGING - 350°C.
INSULATION RESISTANCE
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 1

Sheet 1 of 2

Test Component Position, Measurement	Cond. No.	Cycle / Accumulated Hours: 0 / 0	1 / 4	2 / 8	3 / 12	4 / 16	5 / 20
		Insulation Resistance at 500 Vdc, ohms					
Armature Conductor-to-Frame	6T	Infinity	0.9×10^6	10×10^6	20×10^6	150×10^6	$200+ \times 10^6$
	7T	Infinity	0.6×10^6	8×10^6	0	50×10^6	$200+ \times 10^6$
	8T	Infinity	0.4×10^6	6×10^6	13×10^6	60×10^6	$200+ \times 10^6$
	6B	Infinity	0.7×10^6	8×10^6	18×10^6	75×10^6	$200+ \times 10^6$
	7B	Infinity	1.25×10^6	10×10^6	25×10^6	125×10^6	$200+ \times 10^6$
	8B	Infinity	0	8×10^6	18×10^6	75×10^6	$200+ \times 10^6$
Armature Cond.-to-Cond.	6T-6B	Infinity	0.7×10^6	5×10^6	15×10^6	40×10^6	150×10^6
	7T-7B	Infinity	0.8×10^6	7.5×10^6	25×10^6	100×10^6	$200+ \times 10^6$
	8T-8B	Infinity	0.4×10^6	1×10^6	2.75×10^6	7×10^6	$200+ \times 10^6$

Test Component Position, Measurement	Cond. No.	Cycle / Accumulated Hours: 6 / 24	7 / 28	8 / 32	9 / 36	10 / 40	11 / 44
		Insulation Resistance at 500 Vdc, ohms					
Armature Conductor-to-Frame	6T	$200+ \times 10^6$	$200+ \times 10^6$	40×10^6	Infinity	1.25×10^6	13×10^6
	7T	$200+ \times 10^6$	28×10^6	0.5×10^6	$200+ \times 10^6$	0.9×10^6	5.5×10^6
	8T	$200+ \times 10^6$	Infinity	5×10^6	Infinity	0	0
	6B	$200+ \times 10^6$	Infinity	0	$200+ \times 10^6$	Infinity	$200+ \times 10^6$
	7B	Infinity	Infinity	$.05 \times 10^6$	$200+ \times 10^6$	Infinity	$200+ \times 10^6$
	8B	Infinity	Infinity	0.1×10^6	$200+ \times 10^6$	Infinity	0
Armature Cond.-to-Cond.	6T-6B	$200+ \times 10^6$	Infinity	80×10^6	Infinity	Infinity	$200+ \times 10^6$
	7T-7B	Infinity	Infinity	7×10^6	Infinity	Infinity	$200+ \times 10^6$
	8T-8B	185×10^6	Infinity	0	Infinity	Infinity	$200+ \times 10^6$

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

TABLE XIV - STATORETTE ACCELERATED AGING - 350°C
INSULATION RESISTANCE
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 1

Sheet 2 of 2

Test Component Position, Measurement	Cond. No.	Insulation Resistance at 500 Vdc, ohms						
		Cycle	12	13				
		Accumulated Hours	48	52				
Armature Conductor-to-Frame	6T		0	0	Measurements Discontinued After the 13th Cycle			
	7T		0	0				
	8T		0	0				
	6B		Infinity	Infinity				
	7B		Infinity	Infinity				
	8B		10×10^6	50×10^6				
Armature Cond.-to-Cond.	6T-6B		$200+ \times 10^6$	$200+ \times 10^6$				
	7T-7B		50×10^6	80×10^6				
	8T-8B		Infinity	Infinity				

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

TABLE XV -STATORETTE ACCELERATED AGING - 350°C
CORONA ONSET VOLTAGE AT ROOM TEMPERATURE AND SIMULATED ALTITUDE
AFTER AGING AT 350°C
STATORETTE NO. 1

Sheet 1 of 2

Test Component Position, Measurement		Corona Onset Voltage, Volts AC RMS					
	Cycle	3		4		5	
	Accumulated Hours	12		16		20	
		Pressure at 23°C		Pressure at 23°C		Pressure at 23°C	
	Cond. No.	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *
Armature Conductor-to-Frame	6T	700**	650	700**	650	700**	650
	7T	700**	600	700**	600	700**	600
	8T	500	450	450	350	350	300
	6B	700**	550	700**	600	700**	600
	7B	650	400	650	350	700**	450
	8B	600	350	650	350	600	350
Armature Cond.-to-Cond.	6T-6B	550	450	600	450	650	400
	7T-7B	700**	500	700**	400	700**	400
	8T-8B	450	350	400	300	350	300

Test Component Position, Measurement		Corona Onset Voltage, Volts AC RMS					
	Cycle	6		7		8	
	Accumulated Hours	24		28		32	
		Pressure at 23°C		Pressure at 23°C		Pressure at 23°C	
	Cond. No.	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *
Armature Conductor-to-Frame	6T	700**	650	700**	600	700**	600
	7T	700**	600	700**	650	700**	650
	8T	300	275	300	200	200	200
	6B	700**	550	700**	600	700**	600
	7B	700**	500	700**	650	700**	600
	8B	650	400	600	400	650	450
Armature Cond.-to-Cond.	6T-6B	500	350	500	300	550	350
	7T-7B	600	400	650	350	650	450
	8T-8B	275	200	200	200	200	200

* Equivalent pressure for 100,000 feet at 250°C

** 700 volt AC application limit to prevent possible insulation damage; corona was not observed.

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

TABLE XV - STATORETTE ACCELERATED AGING - 350°C
CORONA ONSET VOLTAGE AT ROOM TEMPERATURE AND SIMULATED ALTITUDE
AFTER AGING AT 350°C
STATORETTE NO. 1

Sheet 2 of 2

Test Component Position, Measurement		Corona Onset Voltage, Volts AC RMS					
	Cycle	9		10		16	
	Accumulated Hours	36		40		64	
		Pressure at 23°C		Pressure at 23°C		Pressure at 23°C	
	Cond. No.	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *
Armature Conductor-to-Frame	6T	700**	550	700**	500	200	200
	7T	700**	600	700**	600	200	200
	8T	200	200	200	200	500	350
	6B	700**	600	700**	550	350	200
	7B	625	600	600	500	400	200
	8B	600	400	600	300	350	200
Armature Cond.-to-Cond.	6T-6B	500	300	550	300	300	200
	7T-7B	600	400	550	350	400	300
	8T-8B	200	200	200	200	200	200

Test Component Position, Measurement		Corona Onset Voltage, Volts AC RMS					
	Cycle	17					
	Accumulated Hours	68					
		Pressure at 23°C		Pressure at 23°C		Pressure at 23°C	
	Cond. No.	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *
Armature Conductor-to-Frame	6T	200	200				
	7T	200	200				
	8T	450	200				
	6B	350	200		- Measurements discontinued after 17th cycle -		
	7B	350	200				
	8B	350	200				
Armature Cond.-to-Cond.	6T-6B	300	200				
	7T-7B	350	300				
	8T-8B	200	200				

* Equivalent pressure for 100,000 feet at 250°C

** 700 volt AC application limit to prevent possible insulation damage; corona was not observed.

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

TABLE XVI - STATORETTE ACCELERATED AGING - 325°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 6

Sheet 1 of 9

Test Component Position, Measurement	Cond. No.	Cycle 1, 24 Accumulated Hours, Volts dc 200	400	500	600	800	1000	Cycle 2, 48 Accumulated Hours, Volts dc 200	400	500	600	800	1000	Cycle 3, 72 Accumulated Hours, Volts dc 200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T-2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T-3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T-4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.5	1.5
	5T-5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	6T-6B	0	0	.25	2.0	4.5	5.0	0	0	0	0	0	0	0	0	0	0	0	0
	7T-7B	0	0	0	.5	.25	1.5	0	0	0	0	0	0	0	0	0	0	0	.5
	8T-8B	0	0	0	0	350	800	0	0	0	.5	10	0	0	.25	.5	1.0	3.0	50
	9T-9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T-10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T-11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5

DC Leakage, Micro-amperes

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XVI - STATORETTE ACCELERATED AGING - 325°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 6

Sheet 2 of 9

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	4						5						6					
	Accumulated Hours	96						120						144					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	3T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5	.75
	6T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5	.85	25
	7T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.75	1.0
	8T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5	.75
	9T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.8	1.5
	7B	0	0	0	0	0	25	0	0	0	0	.25	5	0	0	0	0	.5	.75
	8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5	25	150
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.5	.85	2.0	6.0
Armature Conductor-to-Conductor	1T-1B	0	0	0	0	.5	.75	0	0	0	0	.25	.5	0	0	0	.5	.75	1.0
	2T-2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.5	.75
	3T-3B	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.5	.5	.75	1.0
	4T-4B	0	0	0	.25	.5	.75	0	0	0	0	.25	.75	0	0	0	0	50	160
	5T-5B	0	0	0	.25	.75	1.5	0	0	0	0	.25	.5	0	0	F	-	-	-
	6T-6B	0	0	0	0	0	0	0	0	0	0	0	0	0	F	-	-	-	-
	7T-7B	0	0	0	0	.25	.5	0	0	0	0	.25	.5	0	0	.5	15	F	0
	8T-8B	0	.25	1.0	1.5	3.0	45	0	.25	.5	1.5	6.0	50	0	0	.85	180	F	0
	9T-9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	1.5	25
	10T-10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5	1.5
	11T-11B	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	1.0	6.0	30	55

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XVI - STATORETTE ACCELERATED AGING - 325°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 6

Sheet 3 of 9

Test Component Position, Measurement	Cond. No.	DC Leakage, Micro-amperes																	
	Cycle	7						8						9					
	Accumulated Hours	168						192						216					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	.25	.5	1.5	0	0	0	.25	.5	1.5	0	0	0	.25	.5	1.5
	3T	0	0	0	0	.75	2.5	0	0	0	.25	.3	.5	0	0	0	0	.25	.5
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.5
	5T	0	0	.5	.75	1.5	2.0	0	0	.25	.75	1.75	1.75	0	0	0	1.0	1.25	1.5
	6T	0	0	0	.75	1.0	65	0	0	.5	.75	3.6	70	0	.25	5	20	35	50
	7T	0	0	.25	1.0	1.5	2.5	0	0	.5	.75	1.5	1.5	.25	.25	.75	2.5	15	70
	8T	0	0	0	.25	.5	1.0	0	0	0	.25	.3	.75	0	.25	.5	.6	1.5	35
	9T	0	0	0	0	.5	.75	0	0	0	.5	.75	1.0	0	0	0	0	.25	.5
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T	0	0	0	0	.5	.75	0	0	0	0	0	.5	0	0	0	0	0	.25
	1B	0	0	0	0	.5	.6	0	0	0	0	.5	.75	0	0	0	0	0	.5
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.5	1.25	2.5	5.25
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5B	0	0	0	0	0	0	0	0	0	0	0	0	.5	1.5	F	-	-	-
	6B	0	0	0	.25	1.0	1.5	0	0	0	.25	.75	50	0	0	0	0	.5	.75
	7B	.75	1.0	1.5	3.5	15	35	.75	5.0	35	F	-	-	-	-	-	-	-	-
	8B	0	0	.5	.75	3.5	1300	0	0	.5	.75	6.0	1500	15	F	-	-	-	-
	9B	0	0	0	0	.25	.5	0	0	0	0	0	.25	0	0	0	0	0	.5
	10B	0	0	0	.25	.5	.6	0	0	0	.25	.3	.5	0	0	0	0	0	.25
	11B	0	.25	.75	1.5	3.0	3.5	0	0	.25	.5	.6	4.0	0	0	0	.5	2.0	3.0
Armature Conductor-to-Conductor	1T-1B	0	0	.5	.6	.75	1.5	0	0	.5	.6	.6	1.0	0	0	0	0	0	0
	2T-2B	0	0	0	.5	.75	3.0	0	0	0	.25	.75	2.5	F	-	-	-	-	-
	3T-3B	0	.25	.25	.5	.75	1.5	0	0	.25	.25	.5	.75	0	0	0	0	0	.5
	4T-4B	0	0	.5	35	85	300	0	0	.25	60	110	500	F	-	-	-	-	-
	5T-5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T-7B	.25	.5	.75	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T-8B	0	.75	1.5	350	F	0	0	F	-	-	-	-	-	-	-	-	-	-
	9T-9B	0	0	0	.25	1.75	40	0	0	0	0	.25	75	480	F	-	-	-	-
	10T-10B	0	0	0	0	.25	3.0	0	0	0	0	.5	.75	0	.5	1.75	3.0	4.5	50
	11T-11B	0	.25	.3	.5	.75	120	0	.25	.5	.75	135	185	F	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XVI - STATORETTE ACCELERATED AGING - 325°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 6

Sheet 4 of 9

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	11						12						13					
	Accumulated Hours	264						288						312					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	.5	1.5	0	0	.5	20	35	45
	2T	0	0	0	0	0	0	0	0	0	0	.25	.5	0	0	F	-	-	-
	3T	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	.5	.75
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	5T	0	0	0	0	0	0	0	0	0	0	5	.6	0	0	0	0	.25	.75
	6T	0	0	0	0	0	0	2.5	4.0	8.0	12	150	175	3.0	8.5	15	35	185	500
	7T	0	0	0	0	0	0	3.5	6.0	15	175	F	0	6.0	35	F	-	-	-
	8T	0	0	0	0	0	0	6.0	45	65	135	250	275	8.5	50	135	F	-	-
	9T	0	0	0	0	0	0	0	0	15	25	F	0	F	-	-	-	-	-
	10T	0	0	0	0	0	0	0	0	0	0	.25	.5	0	0	0	.25	.5	.75
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	3.5
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	500	F	-	-
	3B	0	0	0	0	0	.5	0	0	0	.5	1.0	1.5	0	0	175	350	F	0
	4B	0	0	.5	5	7	16	0	.25	.5	15	25	40	0	6.5	65	185	350	700
	5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6B	5	35	45	65	130	F	25	50	85	F	-	-	-	-	-	-	-	-
	7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9B	0	0	0	0	0	0	0	0	0	0	0	.5	0	0	0	.25	.75	4.0
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5	.6
Armature Conductor-to-Conductor	1T-1B	10	15	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2T-2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T-3B	2	12	18	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T-4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5T-5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T-7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T-9B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T-10B	25	.150	175	350	F	0	185	500	F	-	-	-	-	-	-	-	-	-
	11T-11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XVI - STATORETTE ACCELERATED AGING - 325°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 6

Sheet 5 of 9

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	14						15						16					
	Accumulated Hours	336						360						384					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	1.5	55	95	185	0	0	35	50	75	150	0	0	30	65	85	130
	2T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T	0	0	0	0	2.5	5.0	0	0	0	0	0	3.5	0	0	0	0	0	5.0
	4T	0	0	0	0	2.5	.6	0	0	0	0	0	.5	0	0	0	0	0	.25
	5T	0	0	2.5	6.0	15	35	0	0	5	15	25	50	0	0	20	35	185	300
	6T	6.0	40	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T	0	.25	8.0	25	135	185	10	20	35	75	125	150	25	0	0	0	0	0
	11T	0	0	0	6.0	15	25	0	0	0	5	20	25	0	0	0	0	0	0
	1B	0	0	0	0	.25	1.5	0	0	0	1.5	1.5	2.0	0	0	.25	1.5	1.75	2.5
	2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3B	0	185	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4B	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9B	0	0	0	0	1.5	.25	0	0	0	0	.75	1.0	0	0	.25	.75	1.5	3.0
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5	.6
	11B	0	.25	.5	12	35	80	0	0	.25	.75	25	35	0	0	.25	.5	1.5	20
Armature Converter-to-Converter	1T-1B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2T-2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T-3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T-4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5T-5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T-7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T-9B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T-10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T-11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XVI - STATORETTE ACCELERATED AGING - 325°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 6

Sheet 6 of 9

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	17						18						19					
	Accumulated Hours	408						432						456					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	65	180	F	0	0	0	0	185	F	0	0	350	F	-	-
	2T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T	0	0	0	0	0	15	0	0	0	0	0	9.5	0	0	0	2.5	3.0	12
	4T	0	0	0	0	0	5	0	0	0	0	.6	1.0	0	0	0	.5	1.5	150
	5T	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T	0	0	0	25	150	185	0	0	50	110	125	165	0	35	75	F	-	-
	1B	0	0	1.5	2.0	6.0	15	0	0	1.0	1.0	4.5	6.0	0	0	2.5	4.0	6.5	15
	2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9B	0	0	.5	1.0	1.5	3.0	0	0	0	25	.5	2.5	0	0	.25	.5	.75	4.5
	10B	0	0	0	.5	.75	.9	0	0	0	0	25	.5	0	0	.5	.75	1.5	6.0
	11B	0	0	.5	1.5	1.5	F	0	0	.25	6.0	25	F	0	0	0	150	F	-
Armature Conductor-to-Conductor	1T-1B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2T-2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T-3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T-4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5T-5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T-7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T-9B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T-10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T-11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XVI - STATORETTE ACCELERATED AGING - 325°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 6

Sheet 7 of 9

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	20						21						22					
	Accumulated Hours	480						504						528					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T	0	0	25	6.0	25	35	.5	50	185	F	-	-	-	-	-	-	-	-
	4T	0	0	4 0	6.5	9.0	350	F	-	-	-	-	-	-	-	-	-	-	-
	5T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1B	0	.25	3.0	8.5	17	75	0	.25	3.5	6.0	85	125	0	.25	1.5	1.75	165	250
	2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9B	0	.25	.75	1.0	1.5	8.0	0	.25	.75	1.5	6.5	13	0	.5	1.5	3.0	6.5	15
	10B	0	.25	.5	1.0	3.5	15	0	0	.5	1.75	4.0	9	.25	.25	.5	.75	9.5	12
	11B	0	.25	150	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Armature Conductor-to-Conductor	1T-1B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2T-2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T-3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T-4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5T-5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T-7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T-9B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T-10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T-11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XVI - STATORETTE ACCELERATED AGING - 325°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 6

Sheet 8 of 9

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	23						24						25					
	Accumulated Hours	552						576						600					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1B	0	1.5	35	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9B	0	1.5	6.0	25	150	185	0	35	60	110	125	190	.25	40	65	185	F	0
	10B	1.0	1.5	3.0	16	25	50	.5	7.0	15	35	50	65	.75	25	75	175	350	F
	11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Armature Conductor-to-Conductor	1T-1B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2T-2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T-3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T-4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5T-5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T-7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T-9B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T-10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T-11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XVI - STATORETTE ACCELERATED AGING - 325°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 6

Sheet 9 of 9

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	26						27											
	Accumulated Hours	624						648											
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	-	-	-	-	-	-	-	-	-	-	-	-						
	2T	-	-	-	-	-	-	-	-	-	-	-	-						
	3T	-	-	-	-	-	-	-	-	-	-	-	-						
	4T	-	-	-	-	-	-	-	-	-	-	-	-						
	5T	-	-	-	-	-	-	-	-	-	-	-	-						
	6T	-	-	-	-	-	-	-	-	-	-	-	-						
	7T	-	-	-	-	-	-	-	-	-	-	-	-						
	8T	-	-	-	-	-	-	-	-	-	-	-	-						
	9T	-	-	-	-	-	-	-	-	-	-	-	-						
	10T	-	-	-	-	-	-	-	-	-	-	-	-						
	11T	-	-	-	-	-	-	-	-	-	-	-	-						
	1B	-	-	-	-	-	-	-	-	-	-	-	-						
	2B	-	-	-	-	-	-	-	-	-	-	-	-						
	3B	-	-	-	-	-	-	-	-	-	-	-	-						
	4B	-	-	-	-	-	-	-	-	-	-	-	-						
	5B	-	-	-	-	-	-	-	-	-	-	-	-						
	6B	-	-	-	-	-	-	-	-	-	-	-	-						
	7B	-	-	-	-	-	-	-	-	-	-	-	-						
	8B	-	-	-	-	-	-	-	-	-	-	-	-						
	9B	250	F	-	-	-	-	-	-	-	-	-	-						
	10B	25	50	500	850	F	0	185	350	F	-	-	-						
	11B	-	-	-	-	-	-	-	-	-	-	-	-						
Armature Conductor-to-Conductor	1T-1B	-	-	-	-	-	-	-	-	-	-	-	-						
	2T-2B	-	-	-	-	-	-	-	-	-	-	-	-						
	3T-3B	-	-	-	-	-	-	-	-	-	-	-	-						
	4T-4B	-	-	-	-	-	-	-	-	-	-	-	-						
	5T-5B	-	-	-	-	-	-	-	-	-	-	-	-						
	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-						
	7T-7B	-	-	-	-	-	-	-	-	-	-	-	-						
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-						
	9T-9B	-	-	-	-	-	-	-	-	-	-	-	-						
	10T-10B	-	-	-	-	-	-	-	-	-	-	-	-						
	11T-11B	-	-	-	-	-	-	-	-	-	-	-	-						

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XVII - STATORETTE ACCELERATED AGING - 325°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 6

Sheet 1 of 3

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	1						2					
	Accumulated Hours	24						48					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	15	130	150	165	250	400	3	7.5	9.75	12.5	30	40.25
	7T	90	175	325	400	600	850	10	13	18	25	35	45
	8T	35	100	155	185	450	625	6	10.5	14.5	17.5	30	42
	6B	75	180	300	375	525	725	5	11.25	14	22	30	40
	7B	80	170	285	350	500	725	6	11	15	20	32	45
	8B	38	80	130	165	400	550	2	6.5	16.5	18	25	35
Armature Cond.-to-Cond.	6T-6B	35	85	130	F	-	-	35	F	-	-	-	-
	7T-7B	1500	F	-	-	-	-	3	45	650	1800	F	-
	8T-8B	1650	F	-	-	-	-	.5	4.5	12	F	-	-

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	3						4					
	Accumulated Hours	72						96					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	.5	1.0	1.5	1.85	11	25	.5	.75	1.25	1.5	2.5	3.5
	7T	.5	1.25	1.5	2.0	2.75	8	.5	1.0	1.25	11.0	20	F
	8T	.75	2.25	9.0	F	-	-	2.0	10	13.5	115	F	-
	6B	0	.5	.6	.75	1.5	2.25	F	-	-	-	-	-
	7B	0	.5	.6	.75	1.0	1.75	.5	1.25	1.5	2.0	2.25	3.0
	8B	.25	.5	.6	.75	F	-	.25	.5	.75	1.0	2.0	16.0
Armature Cond.-to-Cond.	6T-6B	0	.5	.5	.5	F	-	.25	13	35	350	F	-
	7T-7B	.5	1.0	1.25	18	50	160	6.0	4.5	6.5	10	18	185
	8T-8B	0	.5	.6	.75	1.0	1.5	0	.25	.25	.5	1.5	9

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XVII - STATORETTE ACCELERATED AGING - 325°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 6

Sheet 2 of 3

Test Component Position, Measurement	Cond. No.	DC Leakage, Micro-amperes											
	Cycle	5						6					
	Accumulated Hours	120						144					
		Volts, dc						Volts, dc					
		200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	.5	1.25	1.65	2.0	3.25	5.0	.75	1.75	2.25	2.75	4.5	1600
	7T	.75	1.5	2.0	2.5	3.75	5.25	.75	1.5	2.25	3.0	5.0	30
	8T	.5	1.25	1.75	2.25	3.25	7.0	.5	1.75	2.25	3.0	7.0	20
	6B	.75	1.5	1.75	2.25	4.5	F	.5	1.5	2.5	3.0	F	-
	7B	.5	1.5	2.0	2.5	3.75	7.0	.65	1.5	2.25	3.5	65	F
	8B	0	.5	1.0	2.8	F	-	.6	1.6	2.0	4.0	F	-
Armature Cond.-to-Cond.	6T-6B	15	F	-	-	-	-	15	F	-	-	-	-
	7T-7B	550	850	F	-	-	-	F	-	-	-	-	-
	8T-8B	.4	3.5	5.0	11.5	35	350	F	-	-	-	-	-

Test Component Position, Measurement	Cond. No.	DC Leakage, Micro-amperes											
	Cycle	7						8					
	Accumulated Hours	168						192					
		Volts, dc						Volts, dc					
		200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	.8	2.5	3.0	6.0	8.5	1250	55	F	-	-	-	-
	7T	.75	1.75	3.5	4.5	6.5	35	3.5	10	45	80	F	-
	8T	.75	1.5	2.75	3.5	15	45	1.5	3.5	7.5	10	F	-
	6B	.25	.5	3.0	6.5	F	-	1.0	3.0	5.0	F	-	-
	7B	.75	1.5	3.0	8.0	F	-	1.0	3.25	6.0	F	-	-
	8B	.5	1.75	3.0	19	F	-	1.0	3.0	5.75	9.0	3.5	F
Armature Cond.-to-Cond.	6T-6B	F	-	-	-	-	-	F	-	-	-	-	-
	7T-7B	F	-	-	-	-	-	F	-	-	-	-	-
	8T-8B	F	-	-	-	-	-	F	-	-	-	-	-

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XVII-STATORETTE ACCELERATED AGING - 325°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 6

Sheet 3 of 3

Test Component Position, Measurement		DC Leakage, Micro-amperes											
		Cycle 9						Cycle 10					
		Accumulated Hours 216						Accumulated Hours 240					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	1.25	8.0	50	125	F	-	3.0	4.5	5.0	F	-	-
	7T	60.5	F	-	-	-	-	F	-	-	-	-	-
	8T	1.0	2.25	4.0	7.25	F	-	2.5	3.0	8.0	F	-	-
	6B	.75	2.25	4.0	8.5	F	-	1.75	2.5	F	-	-	-
	7B	.75	1.75	5.5	8.6	F	-	2.0	3.5	F	-	-	-
	8B	.5	2.0	5.0	8.5	F	-	3.0	4.0	7.0	F	-	-
Armature Cond.-to-Cond.	6T-6B	F	-	-	-	-	-	F	-	-	-	-	-
	7T-7B	F	-	-	-	-	-	F	-	-	-	-	-
	8T-8B	F	-	-	-	-	-	F	-	-	-	-	-

Measurements Discontinued
After the 10th Cycle

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XVIII - STATORETTE ACCELERATED AGING - 325°C
INSULATION RESISTANCE
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 6

Sheet 1 of 1

Test Component Position, Measurement	Cond. No.	Cycle / Accumulated Hours	0 / 0	1 / 24	2 / 48	3 / 72	4 / 96	5 / 120
			Insulation Resistance at 500 Vdc, ohms					
Armature Conductor-to-Frame	6T		Infinity	1.5 x 10^6	80 x 10^6	200 x 10^6	200 x 10^6	200 x 10^6
	7T		Infinity	1.25 x 10^6	75 x 10^6	200 x 10^6	200 x 10^6	200 x 10^6
	8T		Infinity	2.0 x 10^6	75 x 10^6	10 x 10^6	150 x 10^6	200 x 10^6
	6B		Infinity	1.25 x 10^6	75 x 10^6	-	0	200 x 10^6
	7B		Infinity	1.5 x 10^6	75 x 10^6	-	200 x 10^6	200 x 10^6
	8B		Infinity	2.5 x 10^6	200 x 10^6	-	200 x 10^6	200 x 10^6
Armature Cond.-to-Cond.	6T-6B		Infinity	0.01 x 10^6	0	-	11 x 10^6	0
	7T-7B		Infinity	0	30 x 10^6	200 x 10^6	15 x 10^6	0
	8T-8B		Infinity	0	85 x 10^6	-	200 x 10^6	20 x 10^6

Test Component Position, Measurement	Cond. No.	Cycle / Accumulated Hours	6 / 144	7 / 168	8 / 192	9 / 216	10 / 240	
			Insulation Resistance at 500 Vdc, ohms					
Armature Conductor-to-Frame	6T		150 x 10^6	150 x 10^6	-	100 x 10^6	-	Measurements discontinued after the 9th Cycle
	7T		150 x 10^6	100 x 10^6	-	0	-	
	8T		150 x 10^6	150 x 10^6	-	150 x 10^6	-	
	6B		100 x 10^6	150 x 10^6	-	150 x 10^6	-	
	7B		100 x 10^6	150 x 10^6	-	150 x 10^6	-	
	8B		100 x 10^6	150 x 10^6	-	150 x 10^6	-	
Armature Cond.-to-Cond.	6T-6B		0	0	-	-	-	
	7T-7B		0	0	-	-	-	
	8T-8B		0	0	-	-	-	

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

TABLE XIX - STATORETTE ACCELERATED AGING - 300°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 4

Sheet 1 of 11

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	1						2						3					
	Accumulated Hours	68						136						204					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	0	.25	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T-2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T-3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T-4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T-5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6T-6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7T-7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8T-8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9T-9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T-10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T-11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XIX - - STATORETTE ACCELERATED AGING - 300°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 4

Sheet 2 of 11

Test Component Position, Measurement	Cond. No.	Cycle 4, 272 Hours, 200 V dc	400	500	600	800	1000	Cycle 5, 340 Hours, 200 V dc	400	500	600	800	1000	Cycle 6, 408 Hours, 200 V dc	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	0	0	0	0	0	0	0	.5	0	0	0	0	0	0
	6T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T	0	0	0	0	0	0	0	0	0	0	.5	.75	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6B	0	0	0	0	0	0	0	0	0	0	.25	.5	0	0	0	0	0	0
	7B	0	0	0	0	0	0	0	0	0	0	0	.5	0	0	0	0	0	0
	8B	0	0	0	0	0	0	0	0	0	0	.5	.75	0	0	0	0	0	.25
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	0	0	0	0	0	0	0	0	0	.5	.75	1	0	0	0	0	0	0
	2T-2B	0	0	0	0	0	0	0	0	0	0	.25	.5	0	0	0	0	0	0
	3T-3B	0	0	0	0	0	0	0	0	0	0	0	.5	0	0	0	0	0	0
	4T-4B	0	0	0	0	0	0	0	0	0	.25	.25	.5	0	0	0	0	0	.5
	5T-5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6T-6B	0	0	0	0	0	.25	0	0	0	0	0	.5	0	0	0	0	0	.5
	7T-7B	0	0	0	0	0	0	0	0	0	0	0	.75	0	0	0	0	0	.5
	8T-8B	0	0	0	0	.5	.75	0	0	.5	.6	.75	1.5	0	0	0	0	.5	1
	9T-9B	0	0	0	0	0	0	0	0	0	0	0	.5	0	0	0	0	0	0
	10T-10B	0	0	0	0	0	0	0	0	0	0	.25	.5	0	0	0	0	0	0
	11T-11B	0	0	0	0	0	0	0	0	0	0	0	.5	0	0	0	0	0	0

DC Leakage, Micro-amperes

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XIX - STATORETTE ACCELERATED AGING - 300°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 4

Sheet 3 of 11

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	7						8						9					
	Accumulated Hours	476						544						612					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	0	0	0	0	0	0	.25	.5	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6T	0	0	0	0	0	.5	0	0	0	.5	.75	1	0	0	0	0	.75	1
	7T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8T	0	0	0	0	0	0	0	0	0	0	.5	.75	0	0	0	0	0	.5
	9T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	0	.25
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8B	0	0	0	0	0	0	0	0	0	.5	.75	.85	0	0	0	0	0	0
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10B	0	0	0	0	0	0	0	0	0	0	0	.5	0	0	0	0	0	.25
	11B	0	0	0	0	0	0	0	0	0	.25	.5	.5	0	0	0	0	.25	.75
Armature Conductor-to-Conductor	1T-1B	0	0	0	0	0	0	0	0	0	0	0	.5	0	0	0	0	0	0
	2T-2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T-3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T-4B	0	0	0	0	.75	1.5	0	0	0	.5	.75	1.5	0	0	0	0	0	.75
	5T-5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6T-6B	0	0	0	0	0	.5	0	0	0	0	.5	1	0	0	0	.5	.75	1
	7T-7B	0	0	0	0	.25	.5	0	0	.5	.75	.85	1	0	0	0	.25	.5	.75
	8T-8B	0	0	0	.5	.75	1.5	0	0	0	.5	.75	1.5	0	0	0	.25	.5	.75
	9T-9B	0	0	0	0	0	.25	0	0	0	0	.25	.5	0	0	0	0	0	0
	10T-10B	0	0	0	0	.25	.5	0	0	0	0	.5	1	0	0	0	0	0	1
	11T-11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XIX - STATORETTE ACCELERATED AGING - 300°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 4

Sheet 4 of 11

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	10						11						12					
	Accumulated Hours	680						748						816					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	9T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8B	0	0	0	0	0	0	0	0	0	.25	.5	.75	0	0	0	0	0	0
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T-2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T-3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T-4B	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	0	0
	5T-5B	0	0	0	0	0	0	0	0	0	0	0	0	0	.5	F	-	-	-
	6T-6B	0	0	0	0	0	0	0	0	0	.5	.75	1.5	0	0	F	-	-	-
	7T-7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2.5	5	10
	8T-8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9T-9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T-10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T-11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XIX - STATORETTE ACCELERATED AGING - 300-C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 4

Sheet 5 of 11

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	13						14						15					
	Accumulated Hours	884						952						1020					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5
	7T	0	0	0	0	0	0	0	0	0	0	.25	.5	0	0	0	.25	.5	.6
	8T	0	0	0	0	5	.75	0	0	0	0	0	0	0	0	0	0	.75	1.5
	9T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T	0	0	0	0	0	.25	0	0	0	.25	.6	.75	0	0	0	.25	.5	.6
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.5
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	0	0	0	0	.5	.75	1.25	0	0	0	0	0	0
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5B	0	0	0	0	0	0	0	0	.5	.75	1	1.5	0	0	0	0	0	0
	6B	0	0	0	0	0	.25	0	0	0	0	0	.5	0	0	0	0	0	.5
	7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5
	9B	0	0	0	0	.25	.5	0	0	0	.25	.75	1.5	0	0	0	.5	.75	1.5
	10B	0	0	0	0	0	.5	0	0	.25	.25	.5	.75	0	0	0	.25	.5	.75
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	0	0	0	0	.25	.5	0	0	0	.25	.75	1	0	0	.25	.5	.6	.75
	2T-2B	0	0	0	0	.5	.75	0	0	0	0	.25	1	0	0	0	0	.25	.5
	3T-3B	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	.25	1.5
	4T-4B	0	0	0	0	0	0	0	0	0	0	.25	.75	0	0	0	0	0	0
	5T-5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T-7B	0	0	0	.25	.6	.25	0	0	.25	.5	.6	50	0	.25	.5	.6	.75	150
	8T-8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9T-9B	0	0	0	0	F	-	0	0	35	70	F	-	0	0	F	-	-	-
	10T-10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	11T-11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.5

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XIX - STATORETTE ACCELERATED AGING - 300°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 4

Sheet 6 of 11

Test Component Position, Measurement	Cond. No.	DC Leakage, Micro-amperes																	
	Cycle	16						17						18					
	Accumulated Hours	1088						1156						1224					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	.25	0	0	0	0	0	.5	0	0	0	.25	.5	1
	3T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	.5	1	1.5	0	0	.25	.5	1	1.5
	5T	0	0	0	0	0	0	.5	.5	1	1.5	2	6.25	1	1.5	3	4.5	8	25
	6T	0	0	0	0	0	1	0	0	.5	1.5	2	2.5	0	0	1	1.5	6	11
	7T	0	0	.5	.75	1	1.5	0	0	2	2.5	50	100	0	0	3.5	50	150	185
	8T	0	0	0	.75	1	1.25	.5	3	3.5	4	9	18	1	1.5	6	25	85	150
	9T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T	0	0	0	.25	.5	1	0	0	0	.5	.75	1	0	0	0	.75	1	2.5
	11T	0	0	0	0	.5	.75	0	0	0	0	.5	.75	0	0	0	.25	.5	1.5
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2B	0	0	0	0	0	.25	0	0	0	0	.25	.5	0	0	0	0	.25	.75
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	0	0	0	0	0	0	0	0	.25	1.5	2	2.5	.25	.6	.75	1	1	1.5
	5B	0	0	0	0	0	0	F	-	-	-	-	-	-	-	-	-	-	-
	6B	0	0	0	0	0	0	0	0	F	-	-	-	-	-	-	-	-	-
	7B	0	0	0	0	0	0	0	0	0	0	F	-	F	-	-	-	-	-
	8B	0	0	0	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9B	0	0	.25	1	1.25	1.25	0	0	.25	1	1.5	1.75	0	0	.5	1	1.5	3
	10B	0	0	.5	.75	3.5	6.0	0	0	.5	.75	2	4.5	0	.25	.75	1.5	6	12
	11B	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	.25	.3	.5	.75
Armature Conductor-to-Conductor	1T-1B	0	0	1	3	6.5	8	0	0	3.5	6	80	120	0	0	4	65	85	175
	2T-2B	0	0	0	0	.5	.75	0	0	F	-	-	-	-	-	-	-	-	-
	3T-3B	0	0	0	0	0	.25	0	0	50	75	185	300	0	.25	F	-	-	-
	4T-4B	0	0	0	0	0	0	0	0	25	50	120	185	.25	1	65	185	F	-
	5T-5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T-7B	0	.5	.75	1	1.5	3.5	F	-	-	-	-	-	-	-	-	-	-	-
	8T-8B	0	0	0	0	0	0	0	0	350	F	-	-	-	-	-	-	-	-
	9T-9B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T-10B	0	0	0	.5	.75	1	0	50	75	185	650	F	0	150	350	F	-	-
	11T-11B	0	0	0	.5	1	1.25	0	0	0	.25	6	25	0	0	0	1.5	6	150

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XIX - STATORETTE ACCELERATED AGING - 300°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 4

Sheet 7 of 11

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	19						20						21					
	Accumulated Hours	1292						1360						1428					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	.5	1
	2T	0	0	0	.5	.5	1	0	0	.25	.5	.75	1.5	0	0	.25	.75	1	1
	3T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	.25	.5	1	1.75	3.5	0	.5	.75	1.5	3	4.5	.25	.5	1.5	3	3	3
	5T	.5	1.5	6	15	75	130	.25	1.5	15	25	150	165	1	1.5	2	185	F	-
	6T	0	1	1.5	8	15	25	0	1.5	2.5	25	75	300	0	150	350	F	-	-
	7T	0	4	18	25	150	180	.25	6.5	25	135	185	300	10	25	150	F	-	-
	8T	2.5	3.5	6	18	120	350	4	18	35	600	F	-	150	F	-	-	-	-
	9T	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	0	.5
	10T	0	0	.5	.75	1.5	3	0	0	.25	.75	1.5	3	0	0	.25	.5	2	4.25
	11T	0	0	.25	7	12	35	0	0	.25	.5	15	35	0	.25	.5	1.5	3	20
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.5
	2B	0	0	0	.25	.5	1.5	0	0	.25	.5	1	2.5	0	0	.25	.25	.5	1.5
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	4B	.5	1.5	6	11	25	25	.75	1	1	1.5	1.5	85	5	25	150	320	F	-
	5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9B	0	0	0	0	0	0	.25	.5	1	2.5	3.5	3.5	1	1.75	5	6.5	15	35
	10B	0	0	.5	.75	1.5	3	0	.5	1	25	75	150	0	.25	75	85	120	120
	11B	0	0	.25	7	12	35	.5	.75	.75	1	1.5	2.5	.5	1.5	3.5	F	-	-
Armature Conductor-to-Conductor	1T-1B	0	0	4.5	75	120	185	0	0	3.5	8	150	250	0	0	10	15	350	F
	2T-2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T-3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T-4B	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5T-5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T-7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T-9B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T-10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T-11B	0	0	.25	.5	1.5	350	0	.25	.5	1.5	3.5	F	.25	.5	185	F	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XIX - STATORETTE ACCELERATED AGING - 300°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 4

Sheet 8 of 11

Test Component Position, Measurement	Cond. No.	Cycle 22, 1496 Accumulated Hours, Volts, dc: 200	400	500	600	800	1000	Cycle 23, 1564 Accumulated Hours, Volts, dc: 200	400	500	600	800	1000	Cycle 24, 1632 Accumulated Hours, Volts, dc: 200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	.5	1.5	0	0	0	0	.25	3	0	0	.25	.5	.75	4.5
	2T	0	.25	.5	.75	1.5	2.5	0	.5	.75	1.5	3	7.5	0	1	1.75	4.5	15	35
	3T	0	0	0	0	0	.25	0	0	0	0	0	.5	0	0	0	0	.5	.75
	4T	0	.25	.75	1.5	3.5	25	0	.5	1.5	3	25	50	5	20	35	45	50	65
	5T	.25	185	250	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T	0	0	.25	.5	.5	1.5	0	0	.25	.5	.75	1.5	.25	.75	1	1.5	1.75	2
	10T	0	.25	.5	1.75	4	8.5	0	.25	1	1.5	3.5	6	0	.5	1	1.5	1.75	3.5
	11T	0	0	.25	1.5	4.5	6	0	0	.25	1	1.5	4	0	0	.5	1	1.25	3.75
	1B	0	0	0	0	0	.5	0	0	0	0	0	.5	0	0	0	0	.25	.5
	2B	0	.25	.5	1	1.5	3	0	.25	.5	.75	1.5	3.5	0	.25	1.5	3	3.5	3.75
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	5	20	180	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9B	5	25	60	80	85	85	.5	1.0	4.5	35	85	120	15	35	65	150	165	320
	10B	.5	20	135	145	165	500	.5	.75	1.5	85	185	F	25	50	150	F	-	-
	11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Armature Conductor-to-Conductor	1T-1B	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2T-2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T-3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T-4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5T-5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T-7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T-9B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T-10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T-11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XIX - STATORETTE ACCELERATED AGING - 300°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 4

Sheet 9 of 11

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	25						26						27					
	Accumulated Hours	1700						1768						1836					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	.5	.75	1.5	3.5	6	0	1.5	3.5	7	8.5	12	0	.25	1	4.5	6.5	10
	2T	.25	1.5	5	15	40	45	1	1.5	40	120	135	150	.75	1.5	35	100	115	135
	3T	0	0	0	.25	.5	.75	0	0	0	.5	.75	1	0	0	0	.25	.5	1
	4T	7.5	15	45	75	120	165	10	35	60	120	135	170	25	50	65	95	165	185
	5T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T	.5	1	1.5	1.75	3	4	.5	1	1.75	3.5	4	4.25	.25	.75	1.5	3	5	6
	10T	.5	1.5	2	3.5	10	15	1	7.5	15	25	120	115	15	25	50	85	100	135
	11T	0	0	1	1.5	3	3.5	0	.25	1	3	3.5	4.5	0	1	1.5	2.5	3.5	4
	1B	0	0	0	0	.25	1	0	0	0	0	.25	.75	0	0	0	0	.5	1
	2B	.25	.75	1.5	3.5	4	4.25	.25	1	1.5	3.5	4.5	4.5	.5	1	3	4	5	6
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9B	25	75	130	320	380	F	25	65	185	F	-	-	-	-	-	-	-	-
	10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Armature Conductor-to-Conductor	1T-1B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2T-2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T-3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T-4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5T-5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T-7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T-9B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T-10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T-11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XIX - STATORETTE ACCELERATED AGING - 300°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 4

Sheet 10 of 11

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	28						29						30					
	Accumulated Hours	1904						1972						2040					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	.5	1	3.5	.7	12	1.5	3.5	4.5	7	9.5	15	3	6.5	9	12	20	35
	2T	1.5	3	25	120	185	300	10	25	150	350	600	1800	25	50	75	F	-	-
	3T	0	0	0	.5	.75	1.5	0	0	0	.25	1.5	2	0	0	0	.5	1.5	2.5
	4T	25	40	60	185	420	600	75	150	300	500	650	1200	160	F	-	-	-	-
	5T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T	1	3	4.5	6	8.5	12	2	4	6.5	8	15	25	6	9.5	12	18	20	35
	10T	25	50	85	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T	0	.5	1.75	3.5	12	25	.5	1.75	4	6.5	12	30	1	2.5	4	6.5	20	35
	1B	0	0	0	.5	1.5	3	0	0	0	1	1.75	3.5	0	0	0	2.5	3	4
	2B	1	1.5	3	7.5	12	25	2.5	4	9	15	22	30	9.5	18	20	35	40	55
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Armature Conductor-to-Conductor	1T-1B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2T-2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T-3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T-4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5T-5B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7T-7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T-9B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10T-10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T-11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XIX - STATORETTE ACCELERATED AGING - 300°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 4

Sheet 11 of 11

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	31						32											
	Accumulated Hours	2108						2176											
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	12	18	20	35	40	50	25	30	45	60	85	90						
	2T	-	-	-	-	-	-	-	-	-	-	-	-						
	3T	0	0	0	.75	2.5	4	0	0	0	.5	1.5	3.5						
	4T	-	-	-	-	-	-	-	-	-	-	-	-						
	5T	-	-	-	-	-	-	-	-	-	-	-	-						
	6T	-	-	-	-	-	-	-	-	-	-	-	-						
	7T	-	-	-	-	-	-	-	-	-	-	-	-						
	8T	-	-	-	-	-	-	-	-	-	-	-	-						
	9T	8.5	15	22	28	35	40	12.5	15	22	30	40	55						
	10T	-	-	-	-	-	-	-	-	-	-	-	-						
	11T	7.5	10	15	20	35	40	15	25	40	55	60	85						
	1B	0	0	0	3.5	8	12	.5	5	6.5	9	12	15						
	2B	15	25	30	50	65	85	25	35	45	95	185	350						
	3B	0	0	0	0	0	.25	0	0	0	0	0	.5						
	4B	-	-	-	-	-	-	-	-	-	-	-	-						
	5B	-	-	-	-	-	-	-	-	-	-	-	-						
	6B	-	-	-	-	-	-	-	-	-	-	-	-						
	7B	-	-	-	-	-	-	-	-	-	-	-	-						
	8B	-	-	-	-	-	-	-	-	-	-	-	-						
	9B	-	-	-	-	-	-	-	-	-	-	-	-						
	10B	-	-	-	-	-	-	-	-	-	-	-	-						
	11B	-	-	-	-	-	-	-	-	-	-	-	-						
Armature Conductor-to-Conductor	1T-1B	-	-	-	-	-	-	-	-	-	-	-	-						
	2T-2B	-	-	-	-	-	-	-	-	-	-	-	-						
	3T-3B	-	-	-	-	-	-	-	-	-	-	-	-						
	4T-4B	-	-	-	-	-	-	-	-	-	-	-	-						
	5T-5B	-	-	-	-	-	-	-	-	-	-	-	-						
	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-						
	7T-7B	-	-	-	-	-	-	-	-	-	-	-	-						
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-						
	9T-9B	-	-	-	-	-	-	-	-	-	-	-	-						
	10T-10B	-	-	-	-	-	-	-	-	-	-	-	-						
	11T-11B	-	-	-	-	-	-	-	-	-	-	-	-						

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XX -- STATORETTE ACCELERATED AGING - 300°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 4

Sheet 1 of 4

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	1						2					
	Accumulated Hours	68						136					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to Frame	6T	3	6	7.5	8.5	12	14	0	5	.75	1	1.5	2
	7T	2	5	6	8	11	15	0	0	0	.5	.75	1.5
	8T	2.5	4	5	6	8.5	11.5	0	0	0	0	.5	1
	6B	16	35	50	80	115	150	0	0	.5	.75	2	3
	7B	2	4.25	35	60	90	120	0	0	.5	1	1.5	2
	8B	15	40	50	60	85	105	0	.5	.75	1.5	2.5	3
Armature Cond.-to-Cond.	6T-6B	3	6	8	9	12	15	0	0	.5	.75	1	1.5
	7T-7B	3	5.75	6.5	8	10	13	0	0	0	0	.75	1.5
	8T-8B	2	4	5.5	6.5	9	12	0	0	0	.5	1.5	2

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	3						4					
	Accumulated Hours	204						272					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	0	.5	.75	1	1.5	2	0	.5	1	1.5	1.75	2.5
	7T	0	.5	.75	1	1.5	1.75	0	0	.75	1	1.5	1.75
	8T	0	.75	1	1.25	1.5	1.75	0	.5	.75	1.5	1.75	2
	6B	.5	.75	.85	1	1.5	2	0	.5	1	1.25	1.5	1.75
	7B	0	.5	.75	1	1.5	2	0	0	.5	1	1.5	2
	8B	.5	.5	.75	1	1.5	2	.5	.75	1	1.25	1.5	2
Armature Cond.-to-Cond.	6T-6B	.75	1.25	1.5	2	3	5.5	.75	1.25	1.5	1.75	2	6
	7T-7B	.5	1.25	1.75	2	3.5	4.5	.5	.75	1.25	2.5	3	4.5
	8T-8B	.75	1	1.5	2	3	4	.75	1.25	1.5	2.5	3.5	6

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XX -- STATORETTE ACCELERATED AGING - 300°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 4

Sheet 2 of 4

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	5						6					
	Accumulated Hours	340						408					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	0	1	1.5	2	2.5	3	.25	.5	.5	.75	1.75	3
	7T	0	0	.75	1.5	2	2.75	.25	.75	1	1.25	2	3
	8T	0	.75	1	1.5	2.5	3	.25	.75	1	1.25	2	2.5
	6B	0	.5	1	1.5	1.75	2.25	.5	1.5	1.75	2.5	4	11.5
	7B	0	0	.5	.75	1	1.5	1	2.25	3.25	4	7	14
	8B	.75	1	1.5	1.75	1.85	2.25	.75	1.5	2	2.5	4.25	8.5
Armature Cond.-to-Cond.	6T-6B	1	1.25	1.5	2	2.25	3	1	2	2.75	3.6	6.25	10.75
	7T-7B	.75	1	1.25	1.75	2	2.25	1.75	3.75	5	6.25	9.75	14.5
	8T-8B	.75	1.25	1.5	2.25	2.5	4	1.25	2.75	3.75	5	7.25	10.25

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	7						8					
	Accumulated Hours	476						544					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	.25	.75	1.25	1.5	2.5	7.75	.25	.5	.75	1.75	2.75	3
	7T	1	2	2.5	3	5	7.5	.5	.75	1	1.5	2	3
	8T	1	2	2.75	3.25	4.75	7.75	.25	.75	1	1.25	1.75	2.5
	6B	1.5	3	4.25	5.5	12	25	.5	1.25	1.75	2.25	3.5	11
	7B	1.5	3	4	5	8.5	15	.75	1.75	2	3	5	8.5
	8B	1	2	3.75	5	8.75	13.5	.5	.75	.85		1.75	3
Armature Cond.-to-Cond.	6T-6B	1.5	3.5	13.25	30	F	-	1	2.5	3.5	5	8.5	35
	7T-7B	1.5	5.75	10	17.5	185	F	3.5	9.5	16	22	50	F
	8T-8B	16	35	45	1300	F	-	.25	1.5	2.5	4	12	18

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XX - STATORETTE ACCELERATED AGING - 300°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 4

Sheet 3 of 4

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	9						10					
	Accumulated Hours	612						680					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	.25	.75	1	2.5	3.0	3.5	.5	1	1.25	1.65	2.75	4.25
	7T	.75	1	1.25	2	2	3	.6	1.25	1.75	2	3.25	5
	8T	.5	.75	1	1.25	2.5	3	.5	1.25	1.75	2	3.25	4.5
	6B	.75	1.25	2	2.25	12	18	.85	1.75	2.5	3.5	6	18
	7B	.5	.75	1.5	2.75	3.5	9	1	2.5	3.25	4.25	8	15
	8B	.5	.75	.95	1	1.5	2.5	0	.25	.5	1	1.5	2.5
Armature Cond.-to-Cond.	6T-6B	1	1.5	2	3.5	12	25	2	4.5	7	9.5	35	F
	7T-7B	2.75	15	18	35	75	F	5	10	15	25	50	1000
	8T-8B	.25	1	2	6	8.5	15	.25	.75	1.5	1.75	2	2.25

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	11						12					
	Accumulated Hours	748						816					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	.25	.75	1	1.5	3	4.5	.25	6	1	2	30	F
	7T	.5	1.25	1.5	2	2.75	4	.5	1.5	2	3.75	7.5	13.5
	8T	.5	1	1.5	2	2.75	4	1	2.25	3	4	6.25	10
	6B	.5	1.5	2	2.5	3.75	8	1.25	3.25	5	7.75	F	-
	7B	.9	1.5	2	2.5	5	9	.6	1.5	2	3	F	-
	8B	1	2	2.5	3.25	5.25	8	-- Broken Lead --					
Armature Cond.-to-Cond.	6T-6B	5.5	14.5	F	-	-	-	12	F	-	-	-	-
	7T-7B	7.5	28	42	65	F	-	100	F	-	-	-	-
	8T-8B	28	60	85	150	F	-	-- Broken Lead --					

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XX -- STATORETTE ACCELERATED AGING - 300°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 4

Sheet 4 of 4

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	13						14					
	Accumulated Hours	884						952					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	.5	1	1.5	F	-	-						
	7T	1	2.5	4.5	25	65	160						
	8T	1	2.5	4	6	15	25						
	6B	1.5	3	10	15	F	-		-- Measurements Discontinued After 13th Cycle --				
	7B	2	6.5	15	F	-	-						
	8B	2	3.5	6	15	25	40						
Armature Cond.-to-Cond.	6T-6B	F	-	-	-	-	-						
	7T-7B	F	-	-	-	-	-						
	8T-8B	.5	7	12	25	30	55						

* Broken Lead Repaired

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle												
	Accumulated Hours												
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T												
	7T												
	8T												
	6B												
	7B												
	8B												
Armature Cond.-to-Cond.	6T-6B												
	7T-7B												
	8T-8B												

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XXI - STATORETTE ACCELERATED AGING - 300°C
INSULATION RESISTANCE
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 4

Sheet 1 of 2

Test Component Position, Measurement		Insulation Resistance at 500 Vdc, ohms						
		Cycle	0	1	2	3	4	5
	Cond. No.	Accumulated Hours	0	68	136	204	272	340
Armature Conductor-to-Frame	6T		Infinity	50×10^6	Infinity	-	$200+ \times 10^6$	$200+ \times 10^6$
	7T		Infinity	65×10^6	Infinity	-	-	-
	8T		Infinity	80×10^6	Infinity	-	-	-
	6B		Infinity	6×10^6	Infinity	-	$200+ \times 10^6$	$200+ \times 10^6$
	7B		Infinity	7×10^6	Infinity	-	-	$200+ \times 10^6$
	8B		Infinity	6×10^6	Infinity	-	$200+ \times 10^6$	$200+ \times 10^6$
Armature Cond.-to-Cond.	6T-6B		Infinity	60×10^6	Infinity	$200+ \times 10^6$	$200+ \times 10^6$	$200+ \times 10^6$
	7T-7B		Infinity	80×10^6	Infinity	$200+ \times 10^6$	$200+ \times 10^6$	$200+ \times 10^6$
	8T-8B		Infinity	100×10^6	Infinity	$200+ \times 10^6$	$200+ \times 10^6$	$200+ \times 10^6$

Test Component Position, Measurement		Insulation Resistance at 500 Vdc, ohms						
		Cycle	6	7	8	9	10	11
	Cond. No.	Accumulated Hours	408	476	544	612	680	748
Armature Conductor-to-Frame	6T		Infinity	$200+ \times 10^6$	-	$200+ \times 10^6$	$200+ \times 10^6$	$200+ \times 10^6$
	7T		$200+ \times 10^6$	200×10^6	$200+ \times 10^6$	$200+ \times 10^6$	$200+ \times 10^6$	$200+ \times 10^6$
	8T		$200+ \times 10^6$	175×10^6	$200+ \times 10^6$	$200+ \times 10^6$	$200+ \times 10^6$	$200+ \times 10^6$
	6B		200×10^6	150×10^6	$200+ \times 10^6$	200×10^6	200×10^6	$200+ \times 10^6$
	7B		150×10^6	150×10^6	100×10^6	$200+ \times 10^6$	200×10^6	$200+ \times 10^6$
	8B		200×10^6	$200+ \times 10^6$	$200+ \times 10^6$	$200+ \times 10^6$	$200+ \times 10^6$	$200+ \times 10^6$
Armature Cond.-to-Cond.	6T-6B		150×10^6	0	8×10^6	200×10^6	40×10^6	0
	7T-7B		100×10^6	0	0	1×10^6	35×10^6	7×10^6
	8T-8B		150×10^6	0	1×10^6	200×10^6	$200+ \times 10^6$	7×10^6

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

TABLE XXI - STATORETTE ACCELERATED AGING - 300°C
INSULATION RESISTANCE
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 4

Sheet 2 of 2

Test Component Position, Measurement		Insulation Resistance at 500 Vdc, ohms						
		Cycle	12	13				
	Cond. No.	Accumulated Hours	816	884				
Armature Conductor-to-Frame	6T		200+ x 10^6	Measurements discontinued after 12th Cycle				
	7T		200 x 10^6					
	8T		150+ x 10^6					
	6B		100+ x 10^6					
	7B		200 x 10^6					
	8B		Broken Lead					
Armature Cond.-to-Cond.	6T-6B		0					
	7T-7B		0					
	8T-8B		Broken Lead					

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

TABLE XXII - STATORETTE ACCELERATED AGING - 300°C
CORONA ONSET VOLTAGE AT ROOM TEMPERATURE AND SIMULATED ALTITUDE
AFTER AGING AT 300°C
STATORETTE NO. 4

Test Component Position, Measurement		Corona Onset Voltage, Volts AC RMS					
	Cycle	1		3		5	
	Accumulated Hours	68		204		340	
		Pressure at 23°C		Pressure at 23°C		Pressure at 23°C	
	Cond. No.	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *
Armature Conductor-to-Frame	6T	700**	600	700**	600	700**	550
	7T	700**	650	650	600	600	500
	8T	550	400	550	400	550	350
	6B	250	200	200	200	200	200
	7B	350	200	350	200	300	200
	8B	200	200	200	200	200	200
Armature Cond.-to-Cond.	6T-6B	400	300	400	300	400	300
	7T-7B	350	200	350	200	350	200
	8T-8B	700**	500	700**	400	650	300

Test Component Position, Measurement		Corona Onset Voltage, Volts AC RMS					
	Cycle	7		9		11	
	Accumulated Hours	476		612		748	
		Pressure at 23°C		Pressure at 23°C		Pressure at 23°C	
	Cond. No.	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *
Armature Conductor-to-Frame	6T	700**	375	700**	375	700**	350
	7T	550	500	550	450	600	400
	8T	500	300	500	300	500	300
	6B	200	200	200	200	200	200
	7B	300	200	250	200	200	200
	8B	200	200	200	200	200	200
Armature Cond.-to-Cond.	6T-6B	400	200	400	200	400	200
	7T-7B	350	200	350	200	350	200
	8T-8B	600	250	600	200	600	200

* Equivalent pressure for 100,000 feet at 250°C

** 700 volt AC application limit to prevent possible insulation damage; corona was not observed.

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

- Measurements discontinued after 11th cycle -

TABLE XXIII - STATORETTE ACCELERATED AGING - 275°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 3

Sheet 1 of 7

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	1					2						3						
	Accumulated Hours	168					336						504						
		Volts, dc					Volts, dc						Volts, dc						
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	F	-	-	-
	7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8B	0	0	0	0	0	0	0	0	0	0	.25	.5	0	.25	.5	.75	.75	1.0
	9B	0	0	0	0	0	0	0	0	0	0	0	.5	0	0	0	0	0	0
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T-2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T-3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T-4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T-5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6T-6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7T-7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8T-8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9T-9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T-10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T-11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XXIII - STATORETTE ACCELERATED AGING - 275°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 3

Sheet 2 of 7

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	4						5						6					
	Accumulated Hours	672						840						1008					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.5
	3T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7T	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	.25	.5
	8T	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	.25	.5	1.5
	9T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.5
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7B	0	0	0	0	0	0	0	0	0	0	25	35	0	0	10	25	75	135
	8B	0	.5	.75	1.5	2.5	3.5	0	0	0	0	0	0	0	0	5	15	25	35
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.75
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T-2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T-3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T-4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T-5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	6T-6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.5
	7T-7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5	1.5
	8T-8B	0	0	0	0	0	0	0	0	0	0	0	0	F	-	-	-	-	-
	9T-9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T-10B	0	0	0	0	0	0	0	.5	.75	3.0	7.5	12	0	0	0	0	0	0
	11T-11B	0	0	0	0	0	0	0	0	0	15	35	F	F	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XXIII - STATORETTE ACCELERATED AGING - 275°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 3

Sheet 3 of 7

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	7						8						9					
	Accumulated Hours	1176						1344						1512					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	0	.25
	2T	0	0	0	0	0	.25	0	0	0	0	0	.25	0	0	0	0	0	0
	3T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7T	0	0	0	0	.25	.3	0	0	0	.5	.75	.8	0	0	0	.25	.75	.75
	8T	0	0	0	.25	.3	1.0	0	0	0	.3	.5	1.25	0	0	0	.25	.75	1.5
	9T	0	0	0	0	.25	.75	0	0	0	0	.25	.3	0	0	0	0	.25	.5
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	.25	0	0	0	0	0	.3	0	0	0	0	0	.25
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7B	0	0	20	35	75	F	0	0	30	40	85	F	0	0	35	65	85	F
	8B	0	0	25	7	20	40	0	0	3.5	6.5	35	185	0	0	3.0	15	45	150
	9B	0	0	0	0	.25	.5	0	0	.25	.3	.75	.9	0	0	.25	.3	.75	1.5
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T-2B	0	0	0	0	0	0	0	0	0	0	.25	.3	0	0	0	.25	.25	.5
	3T-3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T-4B	0	0	0	0	0	0	0	0	0	.25	.5	.6	0	0	.25	.5	.6	.75
	5T-5B	0	0	0	.25	.5	.6	0	0	.3	.5	1.0	1.0	0	0	.3	.5	1.0	1.5
	6T-6B	0	0	0	0	.3	.3	0	0	0	.25	.5	1.5	0	0	.25	.75	3.0	3.5
	7T-7B	0	0	0	0	.3	.75	0	0	0	.25	.75	3.0	0	0	.25	.5	.6	5.0
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T-9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T-10B	0	0	0	0	.25	1.0	0	0	0	.25	.5	1.5	0	0	0	.5	.75	2.0
	11T-11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XXIII - STATORETTE ACCELERATED AGING - 275°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 3

Sheet 4 of 7

Test Component Position, Measurement	Cond. No.	Cycle 10, 1680 Accumulated Hours, Volts, dc: 200	400	500	600	800	1000	Cycle 11, 1848 Accumulated Hours, Volts, dc: 200	400	500	600	800	1000	Cycle 12, 2016 Accumulated Hours, Volts, dc: 200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	.5	0	0	0	0	.25	.5	0	0	0	0	.5	1.0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	0	.25	0	0	0	0	.2	.25	0	0	0	.25	.5	.75
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	0	0	0	0	0	0	.25	.5	0	0	0	.25	.3	.5
	6T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5
	7T	0	0	0	.5	.75	1.0	0	.25	.5	1.5	3.5	10	0	.5	.75	1.5	2.5	13
	8T	0	0	.25	.5	1.0	1.5	0	0	.5	1.5	2.5	3.0	0	.25	.75	1.25	3.5	6.0
	9T	0	0	0	0	.25	.3	0	0	0	.25	.75	.75	0	0	0	.5	.75	.8
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	3B	0	0	0	0	0	.25	0	0	0	0	.25	.5	0	.25	.5	.85	1.5	3.0
	4B	0	0	0	0	0	0	0	0	0	1.0	1.5	25	0	.75	1.5	20	35	45
	5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7B	0	0	60	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	0	0	3.5	25	50	185	0	0	15	25	250	500	0	350	F	-	-	-
	9B	0	.25	.5	1.5	2.5	4.0	0	.5	.75	1.5	3.5	5.0	.25	.5	1.5	3.5	15	35
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.6
	2T-2B	0	0	.5	1.0	1.5	3.0	0	0	.5	1.5	2.5	50	0	.25	.75	15	25	85
	3T-3B	0	0	0	0	0	0	0	0	0	.5	1.0	1.0	0	0	.25	.5	1.0	1.5
	4T-4B	0	0	.5	.75	1.0	2.5	0	0	.25	.5	1.5	3.5	0	.25	.75	15	25	60
	5T-5B	0	0	.5	1.0	2.5	6.0	0	.25	1.0	1.5	3.0	4.5	0	1.0	5.5	15	35	40
	6T-6B	0	0	.25	1.0	1.5	4.0	0	0	.25	.5	1.5	3.5	0	.25	.5	15	35	60.
	7T-7B	0	0	.5	.6	1.5	12	0	0	.5	.6	1.5	13.5	0	.25	.5	2.5	4.0	18
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T-9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T-10B	-0	0	0	1.0	1.5	3.0	0	0	.5	1.0	1.5	2.5	0	.5	.75	1.5	3.5	6.0
	11T-11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XXIII - STATORETTE ACCELERATED AGING - 275°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 3

Sheet 5 of 7

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	13						14						15					
	Accumulated Hours	2184						2352						2520					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	.5	1.0	1.5	0	0	0	.25	.5	1.0	0	0	0	.5	.75	1.5
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	.25	.5	.75	.85	0	0	.25	.5	.5	.75	0	0	.5	.75	.8	1.0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	.25	.5	.6	0	0	.25	.4	.5	.75	0	0	.25	.5	.75	1.0
	6T	0	0	0	.25	.75	1.5	0	0	.25	35	70	150	0	0	.5	40	65	135
	7T	0	.6	.75	1.5	3.5	25	0	.75	2.0	2.5	40	55	0	1	3.5	5.5	50	65
	8T	.25	150	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T	0	0	.25	.5	.85	1.0	0	.25	.5	1.0	3.5	5.0	0	.5	1.5	3.5	5.0	6.0
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2B	0	0	0	.5	.75	1.5	0	0	.25	.5	.75	1.5	0	0	.5	.6	1.0	1.5
	3B	.25	.25	.75	1.0	1.5	4.0	.5	.75	1.5	2.5	3.0	4.5	1.0	1.5	2.5	3.0	4.5	6.0
	4B	.5	15	35	60	85	90	.25	.5	20	60	85	120	15	60	85	115	145	165
	5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9B	.5	.75	25	75	120	185	F	-	-	-	-	-	-	-	-	-	-	-
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	0	0	0	.5	.75	1.5	0	0	.25	.75	1.0	1.5	0	1.5	3.0	3.5	5.5	7.0
	2T-2B	.25	.75	35	80	160	250	15	50	75	120	150	350	25	50	85	115	135	320
	3T-3B	0	0	.25	.75	3.0	4.5	0	.25	.75	3.5	6.0	7.5	0	0	.5	2.75	4.5	6.5
	4T-4B	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5T-5B	1.5	10	25	50	65	65	2.5	3.0	4.5	75	120	185	6.0	12.5	35	65	110	165
	6T-6B	.0	15	25	185	350	500	0	50	120	300	550	1200	15	25	65	375	850	1500
	7T-7B	25	35	45	60	75	100	.5	25	50	75	150	185	1.0	15	65	125	165	220
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T-9B	0	0	0	0	0	.5	0	0	0	.25	.5	.75	0	0	0	0	.25	.75
	10T-10B	25	75	500	800	F	0	0	F	-	-	-	-	-	-	-	-	-	-
	11T-11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XXIII - STATORETTE ACCELERATED AGING - 275°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 3

Sheet 6 of 7

Test Component Position, Measurement	Cond. No.	DC Leakage, Micro-amperes																	
	Cycle	16						17						18					
	Accumulated Hours	2688						2856						3024					
		Volts, dc						Volts, dc						Volts, dc					
		200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	1.0	1.5	2.5	0	0	0	1.5	2.5	4.0	0	0	0	1.0	3.5	6.0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	.75	1.0	1.25	1.5	0	0	.5	1.5	1.75	2.5	0	0	.25	1.5	2.0	2.5
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	.25	.5	.75	1.0	1.25	0	.25	.75	1.0	1.25	1.5	0	.75	1.0	1.0	1.0	1.5
	6T	0	.5	10	65	110	155	.5	1.5	85	160	250	600	3.5	15	75	150	250	500
	7T	.5	1.5	3.5	10	55	70	1.75	2.0	4.5	55	75	90	2.5	3.0	40	65	95	120
	8T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T	.25	1.5	4.0	5.5	6.5	9.0	1.5	3.0	4.5	8.0	12.5	15	.75	4.5	12	18	20	25
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2B	0	.25	.5	1.0	1.25	3.5	0	.5	1.0	2.5	3.5	3.5	0	.25	.75	2.0	3.5	4.0
	3B	2.5	4.0	12	18	25	40	7.5	15	20	45	55	65	15	20	35	40	55	70
	4B	25	65	115	135	160	250	15	55	75	250	350	500	35	75	150	300	500	650
	5B	0	0	0	0	0	0	0	0	0	0	.25	.5	0	0	0	0	0	.5
	6B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	.25	5.0	6.5	9.0	15	35	1.5	2.5	5.0	7.5	12	25	3.0	4.5	6.0	8.5	12	40
	2T-2B	25	55	115	135	500	700	20	50	120	130	450	500	.35	45	85	120	350	500
	3T-3B	0	.25	1.0	3.5	4.5	9.0	1.5	3.0	4.5	6.0	7.5	12	5	6.5	7.5	8.5	11	15
	4T-4B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5T-5B	8.5	15	40	85	130	185	15	25	60	75	115	165	25	35	80	110	135	165
	6T-6B	25	75	110	400	850	1350	50	85	F	-	-	-	-	-	-	-	-	-
	7T-7B	3.5	25	60	85	180	350	5.0	50	75	160	240	290	3.5	35	65	150	320	400
	8T-8B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	9T-9B	0	0	0	0	.5	1.5	0	0	0	0	1.0	1.5	0	0	0	0	1.25	1.5
	10T-10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T-11B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XXIII - STATORETTE ACCELERATED AGING - 275°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 3

Sheet 7 of 7

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
		Cycle		19															
		Accumulated Hours		3192															
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	1.5	4	8.5												
	2T	0	0	0	0	0	0												
	3T	0	0	.25	.5	1.5	3.0												
	4T	0	0	0	0	0	0												
	5T	0	1.5	2	2.25	2.5	3.0												
	6T	6	25	40	85	350	500												
	7T	4.5	40	75	165	185	220												
	8T		-	-	-	-	-												
	9T	.25	6	15	35	45	65												
	10T	0	0	0	0	0	0												
	11T	0	0	0	0	0	0												
	1B	0	0	0	0	0	0												
	2B	0	.5	.6	.75	1.5	8												
	3B	25	55	80	85	120	135												
	4B	85	165	F	-	-	-												
	5B	0	0	0	0	.25	.5												
	6B	-	-	-	-	-	-												
	7B	-	-	-	-	-	-												
	8B	-	-	-	-	-	-												
	9B	-	-	-	-	-	-												
	10B	0	0	0	0	0	0												
	11B	0	0	0	0	0	0												
Armature Conductor-to-Conductor	1T-1B	3.5	6	8.5	15	25	55												
	2T-2B	75	90	300	450	600	800												
	3T-3B	10	25	35	50	65	65												
	4T-4B	-	-	-	-	-	-												
	5T-5B	25	55	75	250	850	1300												
	6T-6B	-	-	-	-	-	-												
	7T-7B	6.5	40	85	185	350	600												
	8T-8B	-	-	-	-	-	-												
	9T-9B	0	0	0	.75	1.5	3.0												
	10T-10B	-	-	-	-	-	-												
	11T-11B	-	-	-	-	-	-												

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XXIV - STATORETTE ACCELERATED AGING - 275°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 3

Sheet 1 of 2

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	1						2					
	Accumulated Hours	168						336					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	1.25	2.25	2.75	3.5	4.75	6.5	0	.25	.5	.6	1.0	1.5
	7T	.5	1.0	1.25	1.5	2.25	3.25	.25	.75	1.0	1.25	2.0	4.5
	8T	.5	1.0	1.5	1.75	2.5	3.75	.5	1.0	1.5	2.0	4.0	12.0
	6B	F	-	-	-	-	-	-	-	-	-	-	-
	7B	.25	1.0	1.25	1.6	2.25	3.0	.75	2.5	3.0	4.5	8.0	12.0
	8B	.75	1.5	1.75	2.25	3.0	4.25	.5	1.0	1.25	1.5	F	-
Armature Cond.-to-Cond.	6T-6B	1.0	2.25	2.75	3.0	4.75	6.0	.5	1.0	1.25	1.5	3.0	4.5
	7T-7B	.75	1.5	2.0	2.5	3.75	5.25	2.5	7.0	11.0	.16	85	F
	8T-8B	.75	1.6	2.0	2.5	3.5	5.0	.6	1.75	2.0	2.5	6.0	7.5

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	3						4					
	Accumulated Hours	504						672					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	0	.5	.75	1.0	1.75	0	.5	1.5	2.0	2.75	6.0	9.75
	7T	1.0	2.75	4.5	6.5	18	F	50	150	F	-	-	-
	8T	4.5	10	18	F	-	-	75	180	F	-	-	-
	6B	-	-	-	-	-	-	-	-	-	-	-	-
	7B	.25	1.0	1.5	2.0	3.25	5.0	15	110	120	185	500	1300
	8B	1.0	3.5	15	F	-	-	.5	.75	1.25	-	-	-
Armature Cond.-to-Cond.	6T-6B	.6	1.5	1.65	2.0	3.0	5.0	.5	1.0	1.5	2.0	3.75	11.0
	7T-7B	3.0	8.5	15	30	35	45	55	F	-	-	-	-
	8T-8B	.5	1.5	2.5	3.0	6.0	11.0	3.0	6.5	F	-	-	-

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XXIV - STATORETTE ACCELERATED AGING - 275°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 3

Sheet 2 of 2

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	5						6					
	Accumulated Hours	840						1008					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	0	.25	.5	1.75	2.5	3.0	0	3.5	4.0	6.5	11	15
	7T	0	0	.25	.25	3.0	7.5	0	.25	3.5	8.0	12	14
	8T	.25	.5	.5	2.0	9.0	F	.25	10	35	F	-	-
	6B	-	-	-	-	-	-	-	-	-	-	-	-
	7B	1.5	3.0	5.0	10.0	30	50	3.0	12	40	65	185	F
	8B	0	.5	.5	.6	.75	F	.25	50	F	-	-	-
Armature Cond.-to-Cond.	6T-6B	.25	.5	.5	.6	1.25	2.0	.5	1.0	1.25	1.5	3.0	3.5
	7T-7B	.25	.25	.3	.3	.5	1.5	.5	.75	1.0	1.5	1.75	2.5
	8T-8B	F	-	-	-	-	-	-	-	-	-	-	-

Measurements discontinued after the 6th cycle

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XXV - STATORETTE ACCELERATED AGING - 275°C
INSULATION RESISTANCE
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 3

Sheet 1 of 1

Test Component Position, Measurement			Insulation Resistance at 500 Vdc, ohms					
		Cycle	0	1	2	3	4	5
	Cond. No.	Accumulated Hours	0	168	336	504	672	840
Armature Conductor-to-Frame	6T		Infinity	200×10^6	-	200×10^6	200×10^6	-
	7T		Infinity	200×10^6	200×10^6	50×10^6	0	-
	8T		Infinity	200×10^6	200×10^6	0.05×10^6	0	-
	6B		Infinity	0	0	0	0	-
	7B		Infinity	200×10^6	100×10^6	200×10^6	1.5×10^6	$< 100 \times 10^6$
	8B		Infinity	200×10^6	200×10^6	30×10^6	200×10^6	-
Armature Cond.-to-Cond.	6T-6B		Infinity	200×10^6	200×10^6	200×10^6	200×10^6	-
	7T-7B		Infinity	200×10^6	-	0.05×10^6	0	-
	8T-8B		Infinity	200×10^6	200×10^6	200×10^6	0	-

Measurements discontinued after the 5th cycle

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

TABLE XXVI - STATORETTE ACCELERATED AGING - 250°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 2

Sheet 1 of 6

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
		Cycle 1						Cycle 2						Cycle 3					
		Accumulated Hours 336						672						1008					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	0	.25
	6T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8T	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	0	.25
	9T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1500	F
	1B	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	0	.25
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to Conductor	1T-1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T-2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T-3B	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	0	0
	4T-4B	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	0	0
	5T-5B	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	0	0
	6T-6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7T-7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8T-8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9T-9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T-10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T-11B	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	0	0

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XXVI - STATORETTE ACCELERATED AGING - 250°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 2

Sheet 2 of 6

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	4						5						6					
	Accumulated Hours	1344						1680						2016					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T	0	0	0	0	.25	.5	0	0	0	0	0	0	0	0	0	.25	.5	1.0
	6T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7T	0	0	0	0	0	.25	0	0	0	0	.25	.5	0	0	.25	.75	1.0	1.0
	8T	0	0	0	0	.25	.5	0	0	0	0	.5	.75	0	0	0	0	.25	.5
	9T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11T	0	0	0	0	1550	F	0	0	0	0	1800	F	0	0	0	0	F	0
	1B	0	0	0	0	0	.25	0	0	0	0	0	0	0	0	0	.25	5	.75
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	.5
	6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7B	0	0	0	0	0	0	0	0	0	0	.25	.5	0	0	0	0	0	0
	8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T-2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T-3B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	4T-4B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	5T-5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	6T-6B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7T-7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8T-8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9T-9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	10T-10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25	3	5	20
	11T-11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XXVI - STATORETTE ACCELERATED AGING - 250°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 2

Sheet 3 of 6

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	7						8						9					
	Accumulated Hours	2352						2688						3024					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	3T	0	0	0	0	0	0	0	0	0	0	0	.5	0	0	0	0	0	.5
	4T	0	0	0	0	.25	.5	0	0	0	0	.5	1.5	0	0	0	0	.5	1.0
	5T	0	0	0	0	.75	1.25	0	0	0	0	.6	1.5	0	0	0	.25	.6	1.5
	6T	0	0	0	0	0	0	0	0	0	0	.5	.75	0	0	0	.5	.75	1.25
	7T	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	0	.5
	8T	0	0	0	0	0	.5	0	0	0	.5	.75	1.0	0	0	0	.5	1.0	1.5
	9T	0	0	0	0	0	0	0	0	0	0	0	.5	0	0	0	0	0	.25
	10T	0	0	0	0	0	0	0	0	0	0	.5	.75	0	0	0	0	.5	.6
	11T	0	0	0	.25	F	0	0	0	F	-	-	-	-	-	-	-	-	-
	1B	0	0	0	.5	.75	1.0	0	0	.25	.5	.75	1.5	0	0	.5	.6	.75	2.0
	2B	0	0	0	0	0	.5	0	0	0	0	0	.5	0	0	0	0	0	.25
	3B	0	0	0	0	.25	.5	0	0	0	0	.25	.5	0	0	0	0	.25	.5
	4B	0	0	0	0	0	0	0	0	0	0	.5	.6	0	0	0	0	.5	.75
	5B	0	0	0	.25	.5	.6	0	0	.5	.75	1.0	1.25	0	0	.25	1.0	1.75	2.5
	6B	0	0	0	0	0	0	0	0	0	0	.5	.75	0	0	0	0	0	.75
	7B	0	25	.5	1.0	1.75	2.5	0	0	0	0	0	.25	.75	1.0	1.5	2.0	3.5	6.0
	8B	0	0	0	.25	.5	.75	0	0	0	.5	.75	1.0	0	.5	1.0	1.25	1.5	2.0
	9B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	0	0	0	0	.25	.5	0	0	0	0	0	1.0	0	0	0	0	.5	.75
	2T-2B	0	0	.25	.5	.75	1.5	0	0	.5	.75	1.0	25	0	0	1.0	1.25	1.5	2.0
	3T-3B	0	0	0	0	1.0	2.5	0	0	.25	.6	1.0	1.75	0	0	.5	.75	1.0	1.25
	4T-4B	0	0	0	0	0	.25	0	0	0	0	0	.75	0	0	0	0	.25	1.0
	5T-5B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.5	.6
	6T-6B	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	0	0
	7T-7B	0	0	0	0	0	0	0	0	0	0	0	.25	0	0	0	0	0	0
	8T-8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9T-9B	0	0	0	0	0	0	0	0	0	0	0	.5	0	0	0	0	.5	.6
	10T-10B	0	25	.5	.75	1.75	2.5	.25	1.0	1.25	1.6	1.75	3.0	1.0	3.5	15	165	250	700
	11T-11B	0	0	0	0	0	.75	0	0	0	0	.5	.6	0	0	0	0	.25	.5

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XXVI - STATORETTE ACCELERATED AGING - 250°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 2

Sheet 4 of 6

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	10						11						12					
	Accumulated Hours	3360						3696						4032					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	0	.25	0	0	0	0	0	.25	0	0	0	0	0	.5
	4T	0	0	0	0	.25	1.0	0	0	0	0	.25	1.0	0	0	0	0	.5	.75
	5T	0	0	0	0	.25	.5	0	0	0	0	.25	.6	0	0	0	.25	.5	.8
	6T	0	0	0	.75	.8	1.25	0	0	.75	1.0	1.25	1.5	0	0	.8	1.5	2.5	4.0
	7T	0	0	0	0	0	.6	0	0	0	0	.5	.75	0	0	0	0	.6	1.0
	8T	0	0	0	.25	.5	1.25	0	0	0	0	.75	1.5	0	0	0	.6	.75	1.25
	9T	0	0	0	0	0	.5	0	0	0	0	0	.5	0	0	0	0	0	.5
	10T	0	0	0	0	0	.6	0	0	0	0	0	.75	0	0	0	0	.5	1.0
	11T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1B	0	0	.25	.25	.5	1.5	0	0	.25	.3	.5	1.5	0	0	.25	.5	1.0	1.5
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	0	0	0	.25	0	0	0	0	0	.25	0	0	0	0	.25	.5
	4B	0	0	0	0	0	.5	0	0	0	0	0	.5	0	0	0	0	.25	.6
	5B	0	0	.25	.5	1.5	2.5	0	0	.25	.75	1.5	2.0	0	0	0	0	.25	.5
	6B	0	0	0	.5	.75	1.5	0	0	.25	.5	.6	1.0	0	0	.25	.6	.75	1.25
	7B	1.0	1.25	1.25	1.75	2.5	15	1.0	2.5	3.5	3.5	4.5	16	1.5	3.0	6.0	25	150	185
	8B	0	.5	1.0	1.25	1.5	1.5	0	.25	.5	1.0	1.25	1.5	0	.5	.75	1.5	2.5	3.0
	9B	0	0	0	0	0	.5	0	0	0	0	.25	.6	0	0	0	.25	.5	1.25
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	0	0	0	.5	.75	1.5	0	0	0	.6	.75	1.6	0	0	0	.75	1.0	1.75
	2T-2B	0	0	1.25	1.5	2.5	6.0	0	0	1.5	2.0	2.5	8.5	0	.5	1.5	3.0	6.0	15
	3T-3B	0	0	.25	.75	1.5	1.75	0	0	.5	.75	1.6	1.75	0	.25	.5	1.5	2.5	25
	4T-4B	0	0	0	0	.5	.75	0	0	0	0	.25	.75	0	0	0	0	.3	.75
	5T-5B	0	0	0	.25	.75	1.5	0	0	0	0	.25	1.5	.25	.5	1.25	1.5	1.75	2.5
	6T-6B	0	0	0	0	0	.25	0	0	0	.5	.6	.75	0	0	0	.6	.75	.8
	7T-7B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	8T-8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9T-9B	0	0	0	.5	.75	1.5	0	0	0	.25	.75	1.75	0	0	0	.5	.75	1.5
	10T-10B	0	15	35	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T-11B	0	0	0	.25	.5	.75	0	0	0	.25	.5	.75	0	0	0	.5	.75	1.0

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XXVI - STATORETTE ACCELERATED AGING - 250°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 2

Sheet 5 of 6

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	13						14						15					
	Accumulated Hours	4368						4704						5040					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	.25	0	0	0	0	0	.5	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	0	.25	.5	0	0	0	.25	.75	.75	0	0	0	.5	.75	1.0
	4T	0	0	0	0	.25	1.0	0	0	.25	.5	1.0	1.25	0	0	.5	.6	1.5	2.0
	5T	0	0	.25	.75	1.0	1.0	0	0	.25	1.0	1.5	25	0	0	.5	1.0	15	35
	6T	0	0	1.0	3.5	4.0	11	0	.25	1.0	3.5	6.0	15	0	.5	1.25	1.5	3.5	25
	7T	0	0	0	.5	1.5	2.5	0	0	0	0	1.0	3.0	0	0	0	0	.75	2.5
	8T	0	0	.5	1.0	1.25	1.5	0	0	.25	1.5	3.0	4.5	0	0	.5	1.5	3.5	5.0
	9T	0	0	0	0	0	0	0	0	0	0	.5	.75	0	0	0	0	.65	1.0
	10T	0	0	0	0	.75	1.5	0	0	0	.25	.75	1.5	0	0	0	.5	.75	3.0
	11T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1B	0	0	.5	.75	1.25	2.0	0	.25	.5	1.5	1.75	3.0	0	.5	.6	1.5	3.0	4.5
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	0	0	.25	.5	.75	1.5	0	1.5	2.5	50	F	0	20	50	150	F	-	-
	4B	0	0	0	.25	.6	.75	0	0	.25	.5	1.0	2.5	0	0	.25	.5	1.0	3.0
	5B	0	0	.25	5.0	25	35	.25	1.5	20	40	65	185	25	50	65	75	185	350
	6B	0	.5	.75	1.0	1.5	3.5	0	.25	1.0	1.5	3.5	6.0	0	.5	1.5	2.0	4.0	8.5
	7B	25	175	F	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	.25	.5	1.5	2.5	3.5	4.0	1.0	1.0	1.25	3.5	3.75	4.5	1.25	1.5	3.0	6.5	15	25
	9B	0	0	.5	.75	1.5	3.0	0	.25	.5	2.5	15	25	0	.5	3.0	25	35	55
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	0	0	0	1.0	2.5	6.0	0	.25	1.5	25	75	120	0	.75	20	35	75	115
	2T-2B	0	.5	15	25	F	0	0	50	F	-	-	-	-	-	-	-	-	-
	3T-3B	.25	.75	25	75	165	750	F	-	-	-	-	-	-	-	-	-	-	-
	4T-4B	0	0	0	.25	.75	1.5	0	0	.25	.5	1.5	15	0	0	.5	1.5	3.0	25
	5T-5B	1.5	6.0	25	40	65	135	10	25	35	55	85	150	15	25	30	65	120	185
	6T-6B	0	0	.25	1.0	1.25	3.0	0	0	1.0	1.5	2.0	2.5	0	0	0	.5	1.5	3.0
	7T-7B	0	0	0	0	.25	.25	0	0	0	0	.25	.5	0	0	0	.25	.5	.75
	8T-8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9T-9B	0	0	.25	.5	.75	1.5	0	.25	.3	.5	1.5	1.75	0	.5	.5	1.0	1.25	2.5
	10T-10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T-11B	0	0	.25	.75	1.0	3.0	0	.25	.75	3.5	4.5	6.0	0	.5	.75	1.5	8.5	10

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XXVI - STATORETTE ACCELERATED AGING - 250°C
DC LEAKAGE CURRENT
MEASURED AT 23°C
STATORETTE NO. 2

Sheet 6 of 6

Test Component Position, Measurement		DC Leakage, Micro-amperes																	
	Cycle	16						17						18					
	Accumulated Hours	5376						5712						6048					
		Volts, dc						Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	1T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	2T	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3T	0	0	0	.75	1.0	1.25	0	0	0	.5	1.25	1.6	0	0	0	.25	1.5	20
	4T	0	0	.75	1.5	3.5	2.5	0	0	.75	1.0	2.5	3.0	0	0	.5	1.5	2.5	4.0
	5T	0	0	.6	1.5	25	185	0	0	.75	1.0	20	160	0	0	0	1.0	25	180
	6T	0	.5	1.5	2.0	4.5	25	0	.75	1.75	3.0	6.0	35	.5	.75	1.5	3.5	6.0	25
	7T	0	0	0	0	.5	3.0	0	.5	1.0	1.5	2.5	4.5	0	.25	1.0	1.65	2.5	3.5
	8T	0	0	.75	1.75	4.0	6.5	0	0	.5	1.5	6.5	.5	0	0	.5	1.5	8.0	12
	9T	0	0	0	0	.5	1.5	0	0	0	0	.5	1.75	0	0	0	0	1.0	1.5
	10T	0	0	0	0	1.0	6.5	0	0	0	0	1.0	8.0	0	0	0	0	1.5	10
	11T	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	1B	0	.75	1.0	1.5	3.5	4.5	0	.5	.75	1.0	2.5	3.5	.25	.75	1.5	3.0	4.0	55
	2B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4B	0	0	.5	.75	1.5	2.5	0	0	1.0	1.5	1.75	2.75	0	0	1.5	1.65	2.5	3.5
	5B	15	50	250	400	500	650	25	120	185	350	F	0	120	185	500	F	-	-
	6B	0	.25	3.0	4.5	6.5	11	0	0	2.5	6.5	12	25	0	0	3.5	7.0	15	30
	7B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	8B	2.0	3.5	8.0	15	35	50	6.0	15	25	55	60	75	8	15	35	45	85	90
	9B	0	.75	3.5	65	85	120	30	65	100	115	135	165	35	65	120	185	350	375
	10B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	.25
	11B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Armature Conductor-to-Conductor	1T-1B	0	1.5	18	30	55	90	.5	2.0	25	40	65	110	.25	.75	30	55	65	90
	2T-2B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3T-3B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4T-4B	0	0	1.0	10	15	30	0	0	.75	1.5	11	15	0	0	.85	1.5	8.0	12
	5T-5B	15	25	50	75	185	350	25	40	55	85	165	325	35	65	90	150	185	250
	6T-6B	0	0	0	.75	3.0	4.5	0	0	0	2.5	6.0	9.0	0	0	0	3.5	7.5	12
	7T-7B	0	0	0	.75	1.0	1.5	0	0	0	1.5	2.0	2.25	0	0	0	1.0	1.5	2.0
	8T-8B	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	9T-9B	0	.6	1.5	1.75	3.0	4.5	0	.5	2.0	2.5	3.5	6.0	0	1.5	3.5	6	10	20
	10T-10B	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	11T-11B	.25	1.0	4.0	8.5	15	15	.5	1.5	3.5	6.0	12	18	1.0	3.0	6.5	8.0	15	25

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

F = Failure, leakage current in excess of 2000 micro-amperes

TABLE XXVII - STATORETTE ACCELERATED AGING - 250°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 2

Sheet 1 of 5

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	1						1					
	Accumulated Hours	6						24					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	5	12	15	18	22	27	6.5	13	15.5	23	30	35
	7T	4	8	10	12	16	25	5.75	10.5	13.5	16	25	32
	8T	4.5	7.5	9.2	11	15.5	25	6.0	13	16	25	33	40
	6B	20	35	40	47	62	75	11.5	25	30	35	45	53
	7B	12	28	35	40	55	72	8	15.75	25	30	40	50
	8B	15	25	35	40	50	60	5	10	12.5	16	28	40
Armature Cond.-to-Cond.	6T-6B	2.5	5	6.5	8.0	10	13	3.75	7.0	10.5	11	14.5	20
	7T-7B	2.5	4.5	5.75	7.0	10	13.75	3.5	7.5	9.0	10	14	23
	8T-8B	2.5	4.2	5.5	6.5	9	11.2	3	6	7.75	9	12.5	15.75

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	1						1					
	Accumulated Hours	48						72					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	6	11	13.5	16	30	35	5.0	8.2	9.2	11.0	15.5	25
	7T	5	9.2	11	14.5	25	30	4.0	7.5	8.5	10.5	15	20
	8T	5.75	11	14	16.5	30	38	5.0	10.6	14.0	22	30	38
	6B	8.5	16	25	30	38	50	8.5	14.8	25	28	37	48
	7B	6.5	13.75	17	25	38	48	6.2	12.8	20	25	32	45
	8B	4.5	9.2	11.75	13.5	28	38	4.0	9.25	11	13.5	25	38
Armature Cond.-to-Cond.	6T-6B	3.0	6.0	7.75	9	12.25	15.75	2.5	4.8	5.6	7.0	9.5	12
	7T-7B	3.25	6.25	8	9	12	15.5	3.0	5.0	5.8	7.2	9.2	12
	8T-8B	2.75	5.5	6.5	7.75	10.5	9	2.0	5.0	5.3	7.5	10	13.75

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XXVII - STATORETTE ACCELERATED AGING - 250°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 2

Sheet 2 of 5

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	1						1					
	Accumulated Hours	144						168					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	3.5	5.5	6.0	7.5	10.75	14.5	3.5	6.0	6.5	7.5	11	15
	7T	3.5	5.0	6.25	7.0	10.5	14.0	3.0	5.75	6.5	7.5	10.5	14.75
	8T	3.5	7.0	8.5	10.0	15.0	25.0	3.5	7.5	8.5	11.0	16.0	25
	6B	3.5	7.5	9.5	11.0	16.0	30.0	3.5	8.0	9.75	12.0	18.0	30
	7B	3.0	7.0	10.75	12.0	18.0	30.0	3.5	6.5	11.0	11.75	17.0	25
	8B	2.5	4.5	6.25	7.75	11.5	15.5	2.75	5.0	6.75	7.5	12.0	13.75
Armature Cond.-to-Cond.	6T-6B	1.5	2.5	3.25	4.0	5.5	7.2	1.5	2.5	3.5	4.0	5.0	6.75
	7T-7B	1.5	2.5	3.5	4.0	5.5	7.75	1.5	2.75	3.75	4.5	5.5	8.0
	8T-8B	1.5	3.0	3.75	4.5	6.0	8.25	1.75	3.5	3.8	4.25	5.75	7.75

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	1						1					
	Accumulated Hours	192						216					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	2.75	3.5	4.25	5.0	7.25	10.25	1.5	3.0	4.0	4.5	6.75	9.5
	7T	1.75	3.5	4.25	5.25	7.5	10.0	2.0	3.0	3.75	5.0	6.75	9.0
	8T	2.5	5	6.25	8.0	11.0	15.0	2.0	4.5	5.5	7.0	10	12.5
	6B	3.5	7.0	8.5	12	22	38	3.0	6.0	7.25	9.5	18	25
	7B	3.0	7.25	9.0	11.25	15	38	2.75	5.0	6.75	8.5	13	25
	8B	2.0	4.5	5.75	7.5	10	14	1.75	3.75	4.75	6.0	8.75	11.75
Armature Cond.-to-Cond.	6T-6B	1.0	2.25	3.0	3.75	5.0	6.75	1.5	2.0	2.5	3.25	4.0	5.25
	7T-7B	1.0	2.25	3.0	3.8	5.25	6.75	1.0	2.0	3.25	4.25	5.5	6.0
	8T-8B	1.0	2.25	3.0	4.0	5.25	7.0	1.0	2.0	2.75	3.50	4.75	6.0

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XXVII - STATORETTE ACCELERATED AGING - 250°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 2

Sheet 3 of 5

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	1						1					
	Accumulated Hours	240						312					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to Frame	6T	1.25	2.75	3.5	4.75	6.25	8.5	1.0	2.5	3.0	4.5	6.0	7.5
	7T	1.5	2.5	3.5	4.0	6.5	8.5	1.5	2.5	3.0	3.5	3.75	5.5
	8T	1.5	4.0	5.25	6.5	9.0	11.5	1.5	2.75	3.0	3.75	6.0	6.5
	6B	2.5	5.0	6.25	7.75	13.75	24	2.5	4.5	4.75	5.5	7.75	10.0
	7B	2.5	4.75	6.0	7.0	12.25	25	2.0	4.25	5.25	6.0	7.25	8.25
	8B	2.0	3.25	4.0	5.25	7.75	10	1.75	2.75	3.75	5.0	6.5	7.0
Armature Cond.-to-Cond.	6T-6B	1.0	2.0	2.5	2.75	4.0	5.5	1.0	1.75	2.5	3.0	3.75	5.0
	7T-7B	1.5	1.75	2.5	3.0	4.0	5.25	1.25	1.5	2.25	2.75	3.5	4.75
	8T-8B	1.5	2.0	2.75	3.0	4.25	5.75	1.5	1.75	2.5	2.75	3.5	4.75

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	1						2					
	Accumulated Hours	336						432					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	1.0	1.75	2.0	2.75	3.75	5.0	0	0	0	0	.5	.5
	7T	1.5	1.75	2.75	3.0	4.0	5.5	0	0	0	.5	.75	1.0
	8T	1.5	2.5	3.25	4.0	5.75	7.5	.5	8	45	200	F	-
	6B	1.0	2.25	3.25	4.0	5.25	7.5	.25	.5	.5	.5	.75	1.0
	7B	1.75	2.5	3.25	4.25	5.25	7.5	0	0	0	0	.5	.75
	8B	1.0	2.25	2.75	3.5	4.75	6.0	0	0	0	.5	.75	.75
Armature Cond.-to-Cond.	6T-6B	.75	1.5	2.0	2.25	2.75	3.75	0	0	.5	.75	1.0	1.5
	7T-7B	1.0	1.25	2.5	3.0	3.5	3.75	0	0	0	0	.5	.5
	8T-8B	.75	1.5	2.0	2.5	3.5	4.75	0	0	0	0	.25	.5

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XXVII - STATORETTE ACCELERATED AGING - 250°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 2

Sheet 4 of 5

Test Component Position, Measurement	Cond. No.	DC Leakage, Micro-amperes											
	Cycle	2						2					
	Accumulated Hours	600						672					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	0	0	0	1.0	1.5	3.25	0	0	0	0	.25	.5
	7T	0	0	.25	.5	.5	8.0	0	0	0	0	.25	.5
	8T	6.0	11	16	30	65	F	0	0	.25	.6	12	F
	6B	0	0	0	0	0	.5	0	0	0	0	.25	.5
	7B	0	.5	1	8.5	F	-	0	0	0	0	.25	.5
	8B	0	0	0	0	.5	.75	0	0	0	0	0	.5
Armature Cond.-to-Cond.	6T-6B	0	0	0	0	.5	.75	0	0	.25	.25	.25	.25
	7T-7B	0	0	0	0	0	.5	0	0	0	0	0	.25
	8T-8B	0	0	0	0	0	.5	0	0	0	0	0	.25

Test Component Position, Measurement	Cond. No.	DC Leakage, Micro-amperes											
	Cycle	3						3					
	Accumulated Hours	902						1008					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	0	0	.5	1.0	1.25	2.5	0	.5	.5	.5	1.5	4.0
	7T	0	.5	.75	1.0	1.5	2.75	0	.6	.75	2.5	2.75	3.0
	8T	0	.5	.6	1.0	1.5	3.0	.25	.5	.6	.75	1.5	3.0
	6B	0	0	0	0	0	.25	0	0	0	0	0	.25
	7B	0	0	0	0	0	.5	0	0	0	0	0	.5
	8B	0	0	0	0	0	.5	0	0	0	0	0	.5
Armature Cond.-to-Cond.	6T-6B	0	0	0	0	0	0	0	0	0	0	0	0
	7T-7B	F	-	-	-	-	-	-	-	-	-	-	-
	8T-8B	0	0	0	0	0	0	0	0	0	0	0	0

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

TABLE XXVII - STATORETTE ACCELERATED AGING - 250°C
DC LEAKAGE CURRENT
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 2

Sheet 5 of 5

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	4						5					
	Accumulated Hours	1344						1680					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	0	0	0	.25	.25	.5	0	0	0	.25	.5	.5
	7T	0	0	0	0	0	0	0	0	0	.25	.5	.75
	8T	0	.25	.5	.75	1.5	4.5	.25	.5	.75	1.0	2.0	4.25
	6B	0	0	0	0	.5	.75	0	0	.25	.25	.5	1.0
	7B	0	0	.25	.5	.5	.75	0	.25	.5	.6	.75	1.25
	8B	0	0	0	0	0	0	0	0	.25	.25	.5	.6
Armature Cond.-to-Cond.	6T-6B	0	0	0	0	0	0	0	F	-	-	-	-
	7T-7B	-	-	-	-	-	-	-	-	-	-	-	-
	8T-8B	0	0	0	0	0	0	0	0	0	0	0	0

Test Component Position, Measurement		DC Leakage, Micro-amperes											
	Cycle	6						7					
	Accumulated Hours	2016						2352					
		Volts, dc						Volts, dc					
	Cond. No.	200	400	500	600	800	1000	200	400	500	600	800	1000
Armature Conductor-to-Frame	6T	0	.5	.75	1.25	4.0	6.5	0	0	0	.25	.5	.75
	7T	.6	1.5	2.0	3.0	4.25	7.0	0	.25	.25	.25	.5	1.0
	8T	.5	1.5	1.75	3.0	4.75	6.5	0	.5	.6	.75	1.0	1.75
	6B	0	.25	.6	1.0	2.0	2.0	0	0	0	0	0	.25
	7B	0	.25	.4	.5	1.0	2.0	0	0	0	0	0	0
	8B	0	.25	.25	.25	.4	.6	0	0	0	0	0	0
Armature Cond.-to-Cond.	6T-6B	-	-	-	-	-	-	-	-	-	-	-	-
	7T-7B	-	-	-	-	-	-	-	-	-	-	-	-
	8T-8B	.25	.5	.75	1.5	10	25	0	0	0	.5	1.0	1.5

T = Top conductor in slot (Bore side)
B = Bottom conductor in slot (Frame side)
F = Failure, leakage current in excess of 2,000 micro-amperes

Measurements discontinued after the 7th cycle

TABLE XXVIII - STATORETTE ACCELERATED AGING - 250°C
INSULATION RESISTANCE
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 2

Sheet 1 of 2

Test Component Position, Measurement			Insulation Resistance at 500 Vdc, ohms					
		Cycle	0	1	1	1	1	1
	Cond. No.	Accumulated Hours	0	6	24	48	72	144
Armature Conductor-to-Frame	6T		Infinity	50×10^6	32×10^6	40×10^6	75×10^6	125×10^6
	7T		Infinity	50×10^6	32×10^6	40×10^6	70×10^6	125×10^6
	8T		Infinity	50×10^6	28×10^6	32×10^6	35×10^6	75×10^6
	6B		Infinity	16×10^6	18×10^6	20×10^6	28×10^6	50×10^6
	7B		Infinity	18×10^6	18×10^6	22×10^6	26×10^6	50×10^6
	8B		Infinity	45×10^6	30×10^6	38×10^6	40×10^6	85×10^6
Armature Cond.-to-Cond.	6T-6B		Infinity	85×10^6	50×10^6	75×10^6	100×10^6	200×10^6
	7T-7B		Infinity	85×10^6	50×10^6	75×10^6	100×10^6	200×10^6
	8T-8B		Infinity	100×10^6	75×10^6	90×10^6	90×10^6	200×10^6

Test Component Position, Measurement			Insulation Resistance at 500 Vdc, ohms					
		Cycle	1	1	1	1	1	1
	Cond. No.	Accumulated Hours	168	192	216	240	312	336
Armature Conductor-to-Frame	6T		130×10^6	185×10^6	200×10^6	200×10^6	200×10^6	200×10^6
	7T		125×10^6	185×10^6	200×10^6	200×10^6	200×10^6	200×10^6
	8T		80×10^6	85×10^6	125×10^6	150×10^6	200×10^6	200×10^6
	6B		55×10^6	50×10^6	85×10^6	100×10^6	175×10^6	200×10^6
	7B		55×10^6	50×10^6	85×10^6	100×10^6	200×10^6	200×10^6
	8B		80×10^6	100×10^6	150×10^6	175×10^6	185×10^6	200×10^6
Armature Cond.-to-Cond.	6T-6B		200×10^6	200×10^6	200×10^6	200×10^6	200×10^6	Infinity
	7T-7B		200×10^6	200×10^6	200×10^6	200×10^6	200×10^6	Infinity
	8T-8B		200×10^6	200×10^6	200×10^6	200×10^6	200×10^6	200×10^6

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

TABLE XXVIII - STATORETTE ACCELERATED AGING - 250°C
INSULATION RESISTANCE
MEASURED AT AGING TEMPERATURE
STATORETTE NO. 2

Sheet 2 of 2

Test Component Position, Measurement	Cond. No.		Insulation Resistance at 500 Vdc, ohms					
		Cycle	2	2	2	3	3	4
		Accumulated Hours	432	500	672	902	1008	1344
Armature Conductor-to-Frame	6T		Infinity	Infinity	Infinity	Infinity	Infinity	Infinity
	7T		Infinity	Infinity	Infinity	Infinity	Infinity	Infinity
	8T		0.05×10^6	200×10^6	200×10^6	Infinity	Infinity	Infinity
	6B		Infinity	Infinity	Infinity	Infinity	Infinity	Infinity
	7B		Infinity	Infinity	Infinity	Infinity	Infinity	Infinity
	8B		Infinity	Infinity	Infinity	Infinity	Infinity	Infinity
Armature Cond.-to-Cond.	6T-6B		Infinity	Infinity	Infinity	Infinity	Infinity	Infinity
	7T-7B		Infinity	Infinity	Infinity	0	0	0
	8T-8B		Infinity	Infinity	Infinity	Infinity	Infinity	Infinity

Test Component Position, Measurement	Cond. No.		Insulation Resistance at 500 vdc, ohms					
		Cycle	5	6	7			
		Accumulated Hours	1680	2016	2352			
Armature Conductor-to-Frame	6T		-	-	-	Measurements Discontinued after the 7th cycle		
	7T		-	200×10^6	-			
	8T		-	200×10^6	-			
	6B		-	-	-			
	7B		-	-	-			
	8B		-	-	-			
Armature Cond.-to-Cond.	6T-6B		0	0	0			
	7T-7B		0	0	0			
	8T-8B		-	-	-			

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

TABLE XXIX - STATORETTE ACCELERATED AGING - 250°C
CORONA ONSET VOLTAGE AT ROOM TEMPERATURE AND SIMULATED ALTITUDE
AFTER AGING AT 250°C
STATORETTE NO. 2

Sheet 1 of 1

Test Component Position, Measurement		Corona Onset Voltage, Volts AC RMS					
	Cycle	1		2		4	
	Accumulated Hours	336		672		1344	
		Pressure at 23°C		Pressure at 23°C		Pressure at 23°C	
	Cond. No.	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *
Armature Conductor-to-Frame	6T	700**	450	700**	500	700**	500
	7T	700**	400	700**	400	700**	450
	8T	700**	450	700**	375	650	400
	6B	350	200	400	200	400	200
	7B	450	350	550	350	500	350
	8B	550	300	600	350	600	300
Armature Cond.-to-Cond.	6T-6B	700**	400	650	350	650	300
	7T-7B	600	350	700**	350	700**	300
	8T-8B	700**	450	700**	450	700**	400

Test Component Position, Measurement		Corona Onset Voltage, Volts AC RMS					
	Cycle	6					
	Accumulated Hours	2016					
		Pressure at 23°C		Pressure at 23°C		Pressure at 23°C	
	Cond. No.	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *	Sea Level	4.5 TORR *
Armature Conductor-to-Frame	6T	700**	450				
	7T	700**	450				
	8T	600	250				
	6B	350	200		- Measurements discontinued after 6th cycle -		
	7B	450	300				
	8B	550	200				
Armature Cond.-to-Cond.	6T-6B	650	200				
	7T-7B	700**	300				
	8T-8B	700**	350				

* Equivalent pressure for 100,000 feet at 250°C

** 700 volt AC application limit to prevent possible insulation damage; corona was not observed.

T = Top conductor in slot (Bore side)

B = Bottom conductor in slot (Frame side)

TABLE XXX - AGING TIME TO FAILURE SUMMARY

Conductor Failures, All Positions

Position	Accumulated Failures		Aging Time - Hours															
			350°C			325°C			300°C			275°C			250°C		
			To Failure			To Failure			To Failure			To Failure			To Failure		
	No.	%	No.	Hrs	Accumulated	No.	Hrs	Accumulated	No.	Hrs.	Accumulated	No.	Hrs	Accumulated	No.	Hrs	Accumulated
Top Cond.-to-Frame	1	9.09										1	2184	2184	1	2688	2688
	2	18.18															
	3	27.27	3	52	156				3	1428	4284						
	4	36.36				4	312	1248	1	1496	1496						
	5	45.45	2	56	112	1	336	336	1	1904	1904						
	6	54.54	1	64	64												
	7	63.64	1	68	68	2	408	816	2	2040	4080						
	8	72.73															
	9	81.82	2	80	160	2	456	912									
	10	90.90															
	11	100.00	2	92	184	2	504	1008									
	Total Hours				744			4320			11,764+			2184+			2688+
	Total No. Failures		11			11			7			1			1		
	Avg. Hrs to Failure			67.63			392.73			1680.5+			2184+			2688+	
Bottom Cond.-to-Frame	1	9.09				1	192	192	1	1088	1088	1	504	504	1	4368	4368
	2	18.18										1	1680	1680	1	5040	5040
	3	27.27				2	216	432	2	1156	2312	1	2016	2016	1	6048	6048
	4	36.36				1	288	288	1	1224	1224	1	2352	2352			
	5	45.45				1	312	312	1	1428	1428	1	3192	3192			
	6	54.54	6	52	312				1	1496	1496						
	7	63.64	1	56	56	2	336	672	1	1632	1632						
	8	72.73	1	64	64	1	480	480	1	1768	1768						
	9	81.82				1	552	552									
	10	90.90	2	72	144	1	624	624									
	11	100.00	1	80	80	1	648	648									
	Total Hours				656			4200			10,948+			9744+			15,456+
	Total No. Failures		11			11			8			5			3		
	Avg. Hrs to Failure			59.64			381.82			1368.5+			1948+			5152+	
Top-to-Bottom Cond.	1	9.09													1	3360	3360
	2	18.18	2	36	72	2	144	288	2	816	1632	2	1008	2016			
	3	27.27	1	48	48	1	168	168	1	1020	1020	1	2184	2184	2	4704	9408
	4	36.36				1	192	192				1	2352	2352			
	5	45.45										1	2856	2856			
	6	54.54							3	1156	3468						
	7	63.64				3	216	648									
	8	72.73							2	1224	2448						
	9	81.82				2	264	528	1	1292	1292						
	10	90.90	7	52	364				1	1428	1428						
	11	100.00	1	56	56	2	288	576	1	1496	1496						
	Total Hours				540			2480			12,784+			9408+			12,768+
	Total No. Failures		11			11			11			5			3		
	Avg. Hrs to Failure			49.09			225.45			1162.2+			1881.6+			4256+	

TABLE XXXI - AGING TIME TO FAILURE SUMMARY

Conductor Failures, Combined; Top to Bottom, Top to Frame, Bottom to Frame

Accumulated Failures		Aging Time - Hours														
		350°C			325°C			300°C			275°C			250°C		
		To Failure			To Failure			To Failure			To Failure			To Failure		
No.	%	No.	Hrs	Accumulated	No.	Hrs	Accumulated	No.	Hrs	Accumulated	No.	Hrs	Accumulated	No.	Hrs	Accumulated
1	3.03										1	504	504	1	2688	2688
2	6.06	2	36	72	2	144	288	2	816	1632				1	3360	3360
3	9.09	1	48	48	1	168	168	1	1020	1020	2	1008	2016	1	4368	4368
4	12.1							1	1088	1088	1	1680	1680			
5	15.1				2	192	384				1	2016	2016	2	4704	9408
6	18.2													1	5040	5040
7	21.2										2	2184	4368	1	6048	6048
8	24.2															
9	27.3							5	1156	5780	2	2352	4704			
10	30.3				5	216	1080				1	2856	2856		Test Terminated	
11	33.3										1	3192	3192			
12	36.4				2	264	528	3	1244	3672						
13	39.4							1	1292	1292						
14	42.4											Test Terminated				
15	45.4				3	288	864									
16	48.5															
17	51.5															
18	54.5							5	1428	7140						
19	57.6	16	52	832												
20	60.6				5	312	1560									
21	63.6							3	1496	4488						
22	66.7							1	1632	1632						
23	69.7	4	56	224	3	336	1008	1	1768	1768						
24	72.7							1	1904	1904						
25	75.8	2	64	128	2	408	816									
26	78.9	1	68	68				2	2040	4080						
27	81.8				2	456	912									
28	84.8	2	72	144	1	480	480									
29	87.9															
30	90.9				2	504	1008									
31	93.9	3	80	240	1	552	552		Test Terminated							
32	96.9				1	624	624									
33	100.0	2	92	184	1	648	648									
Total Hours				1,940			11,000			35,496+			21,336+			30,912+
Total No. Failures		33			33			26			11			7		
Avg. Hrs to Failure			58.78			333.33			1,365.2+			1,939.6			4,416.0+	

TABLE XXXII - AGING TIME TO FAILURE AND FAILURE PREDICTION SUMMARY
CONDUCTOR FAILURES, ALL CONDUCTOR MEASUREMENT POSITIONS

Statorette No.	°C Aging	Conductor Measurement Positions	Hrs. to Final Failure or Test Completion	Failure, Actual, Predicted and 3 Sigma Limits - Hours						
					Actual			Predicted *		
						3 Sigma Limits			3 Sigma Limits	
				First	Mean	Lower	Upper	Mean	Lower	Upper
1	350	a) Top-Frame	92	52	67.63	22.3	112.9	-	-	-
		b) Bottom-Frame	80	52	59.64	23.3	95.9	-	-	-
		c) Top-Bottom	56	36	49.09	35.9	62.1	-	-	-
		d) Combined, (a), (b), (c)	92	36	58.78	18.8	102.8	-	-	-
6	325	a) Top-Frame	504	312	392.73	170.8	614.6	-	-	-
		b) Bottom-Frame	648	192	381.82	-0-	857.9	-	-	-
		c) Top-Bottom	288	144	225.45	72.1	378.7	-	-	-
		d) Combined, (a), (b), (c)	648	144	333.33	-0-	730.5	-	-	-
4	300	a) Top-Frame	2176+	1428	-	-	-	1870	555	6300
		b) Bottom-Frame	2176+	1088	-	-	-	1460	635	3800
		c) Top-Bottom	1496	816	-	-	-	1160	770	1720
		d) Combined, (a), (b), (c)	2176+	816	-	-	-	1520	900	2580
3	275	a) Top-Frame	3192+	2184	-	-	-	-	-	-
		b) Bottom-Frame	3192+	504	-	-	-	4200	100	200,000
		c) Top-Bottom	3192+	1008	-	-	-	4500	75	300,000
		d) Combined, (a), (b), (c)	3192+	504	-	-	-	7900	76	840,000
2	250	a) Top-Frame	6048+	2688	-	-	-	-	-	-
		b) Bottom-Frame	6048+	4368	-	-	-	8250	1800	38,000
		c) Top-Bottom	6048+	3360	-	-	-	6300	1540	25,000
		d) Combined, (a), (b), (c)	6048+	2688	-	-	-	30,000	300	2,800,000

* - Read-out from Lognormal Plot of Failures, Figures 18, 19 and 20

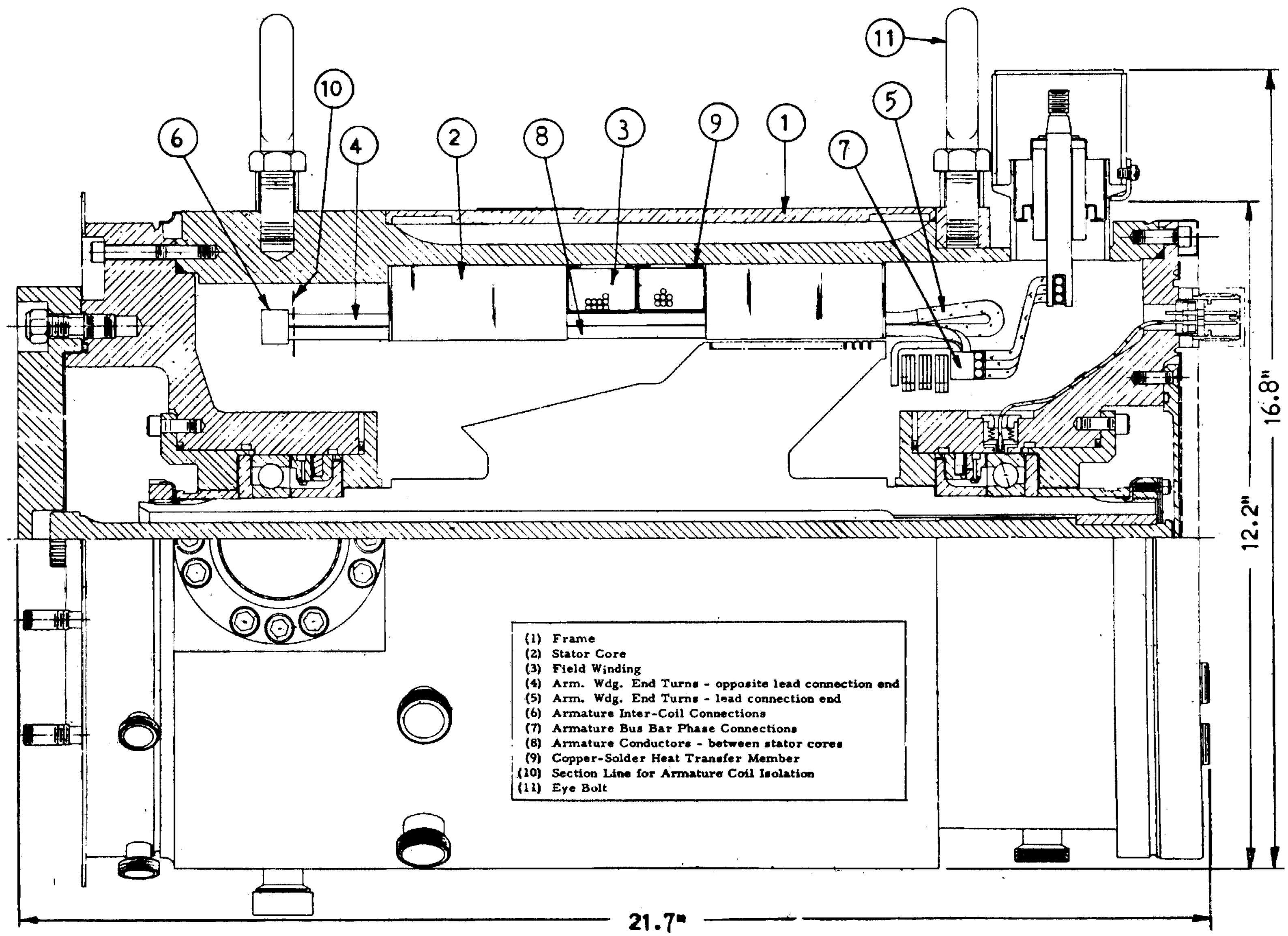
TABLE XXXIII - STATORETTE COIL FAILURE LOCATION, 350°C AND 325°C TESTS

Statorette No. 1 - 350°C						
Conductor No.	Failure Location					
	Slot Position		Core Position			
	Bottom	Top	C.E.	O.C.E.	Middle	F.C.A.
3T-Frame		X			X	
5T-Frame		X			X	
7T-Frame						X
9T-Frame		X	X			
10T-Frame		X			X	
11T-Frame		X			X	
3B-Frame	X				X	
5B-Frame	X			X		
7B-Frame	X				X	
9B-Frame	X				X	
10B-Frame	X		X			
11B-Frame	X			X		
3T-3B					X	
5T-5B					X	
7T-7B					X	
9T-9B					X	
10T-10B					X	
11T-11B					X	
%/Position	6/6 = 100	5/6 = 83.3	2/18 = 11	2/18 = 11	13/18 = 72.5	1/18 = 5.5
% of Total			2/18 = 11	2/18 = 11	13/18 = 72.5	1/18 = 5.5
% of Total, 350°C, 325°C Combined			3/33 = 9.09	3/33 = 9.09	25/33 = 75.75	2/33 = 6.06

Statorette No. 6 - 325°C						
Conductor No.	Failure Location					
	Slot Position		Core Position			
	Bottom	Top	C.E.	O.C.E.	Middle	F.C.A.
2T-Frame		X			X	
6T-Frame		X			X	
8T-Frame		X			X	
10T-Frame		X			X	
11T-Frame		X	X			
2B-Frame	X			X		
6B-Frame						X
8B-Frame	X				X	
10B-Frame	X				X	
11B-Frame	X				X	
2T-2B					X	
6T-6B					X	
8T-8B					X	
10T-10B					X	
11T-11B					X	
	5/6 = 83.3	6/6 = 100	1/15 = 6.66	1/15 = 6.66	12/15 = 80.02	1/15 = 6.66
			1/15 = 6.66	1/15 = 6.66	12/15 = 80.02	1/15 = 6.66

C.E. = Stator Connection End; Statorette Measurement Lead End
O.C.E. = Stator Opposite Connection End
Middle = Between Core Ends
F.C.A. = Field Coil Area

FIGURE 1. Cross Section View, Alternator Components and Insulations



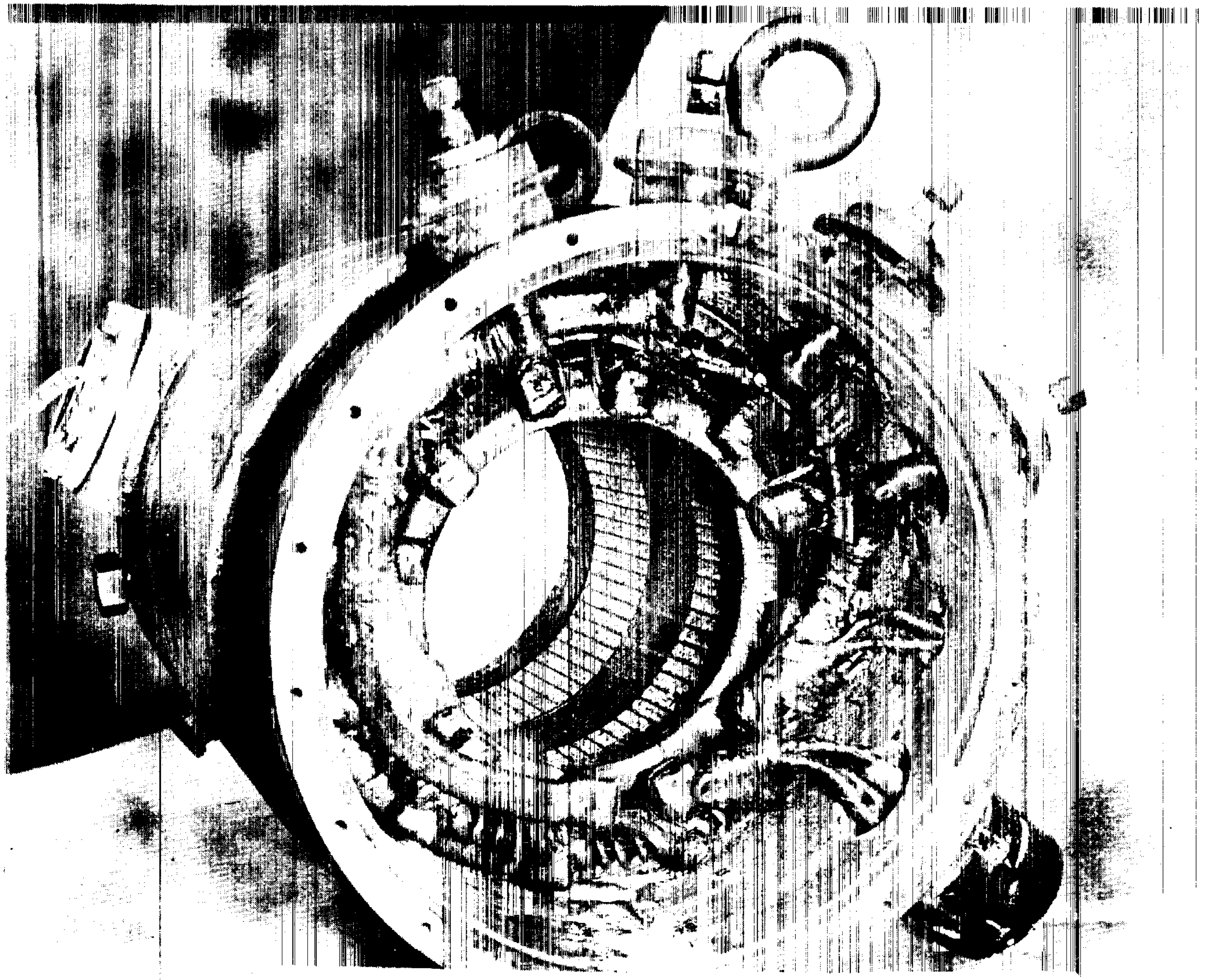


Fig. 2 - Stator No. 1, S/N 481490, Lead Connection
End View, Prior to Sectioning

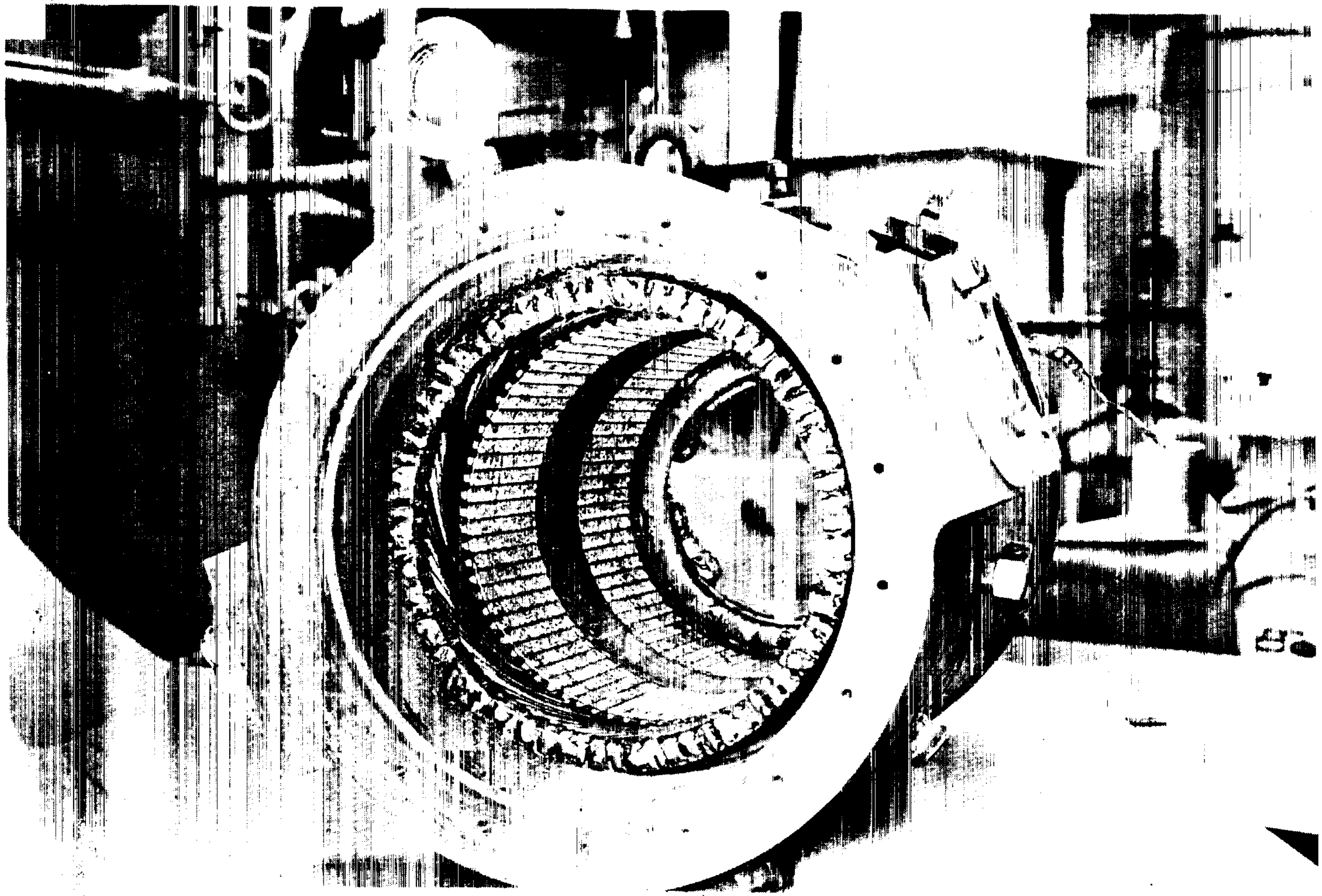
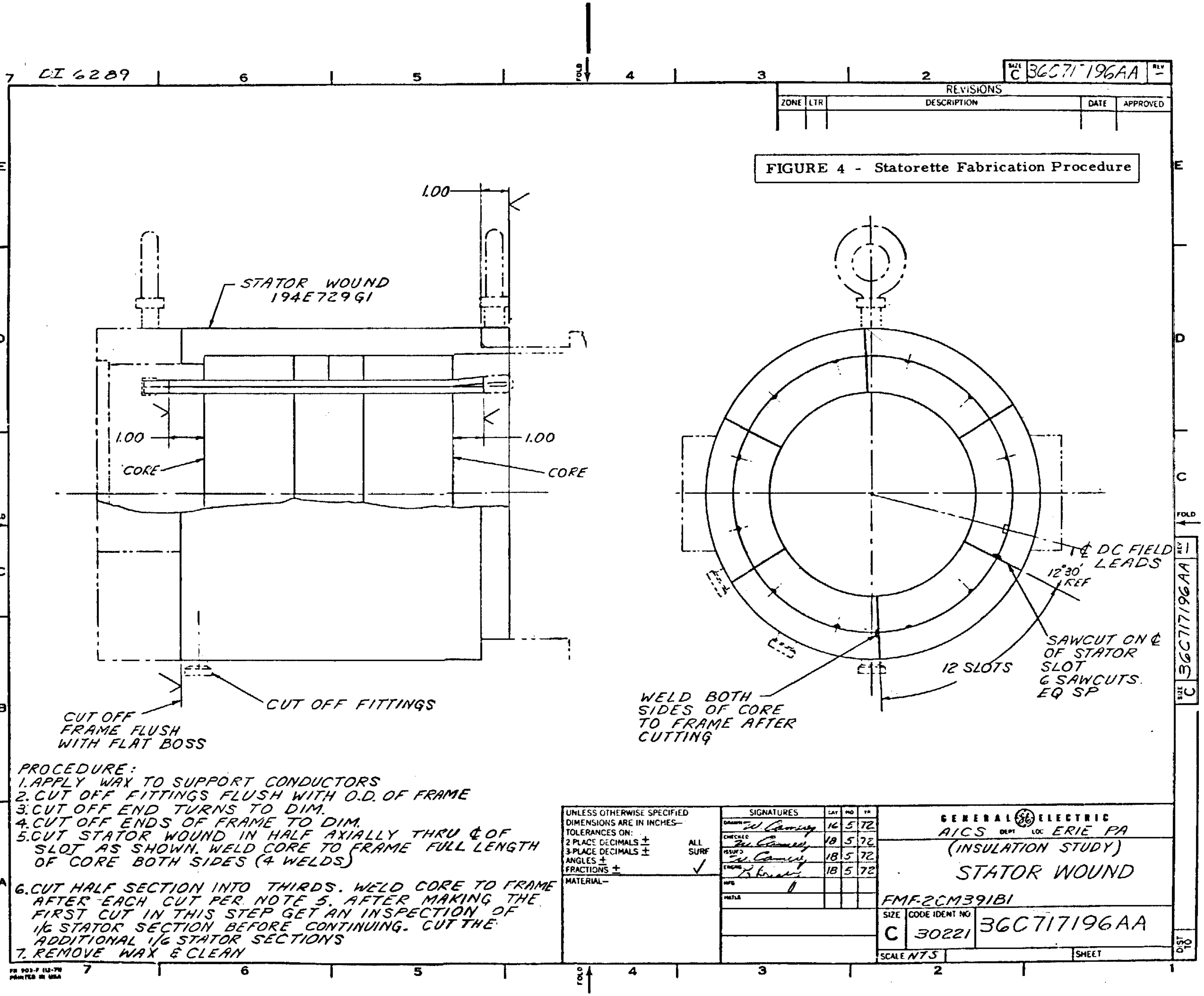


Fig. 3 - Stator No. 1, S/N 481490, Opposite Lead Connection End View, Prior to Sectioning

FIGURE 4 - Statorette Fabrication Procedure



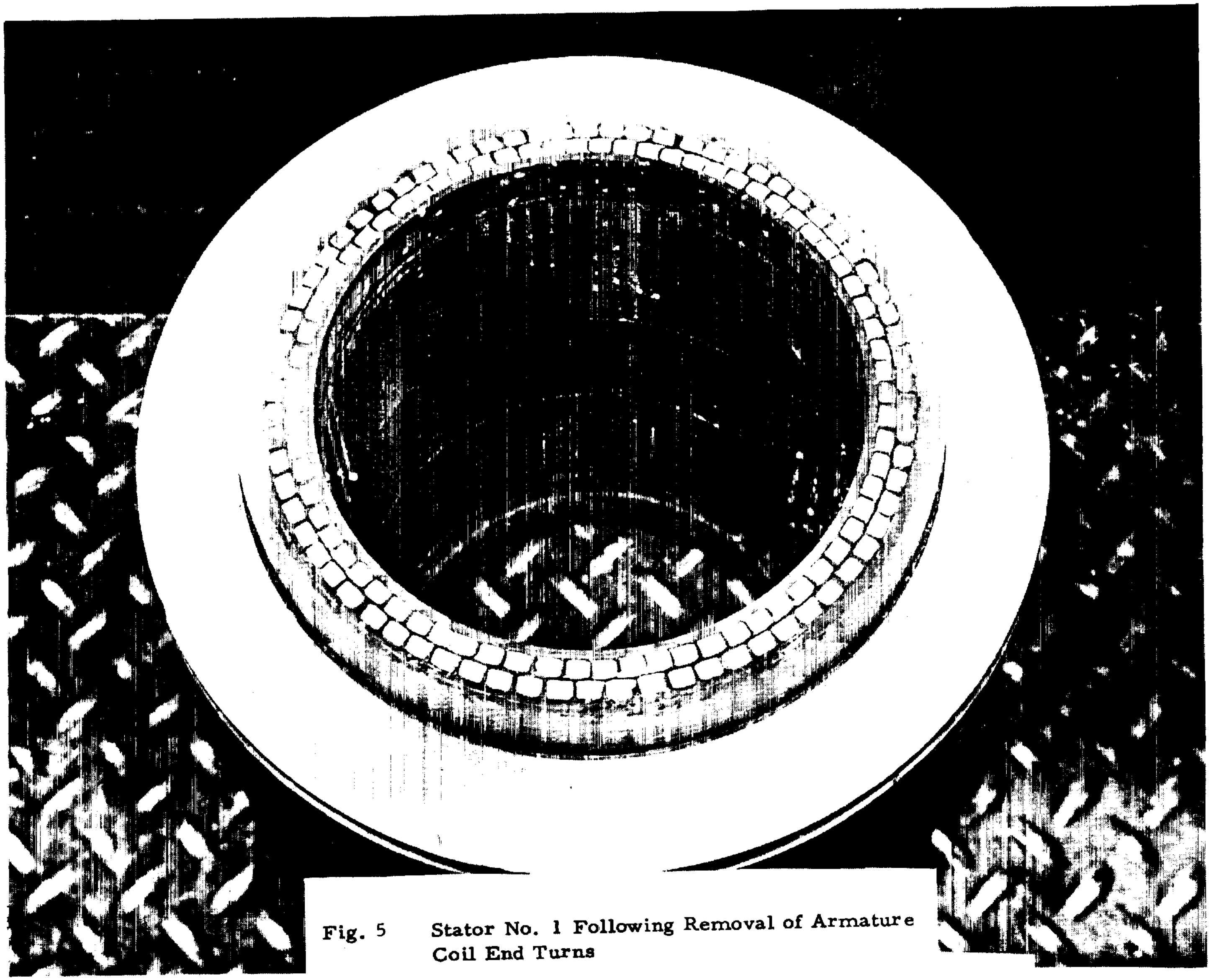


Fig. 5 Stator No. 1 Following Removal of Armature Coil End Turns

Fig. 6 - Sectioned Stator for Fabrication of Statorettes

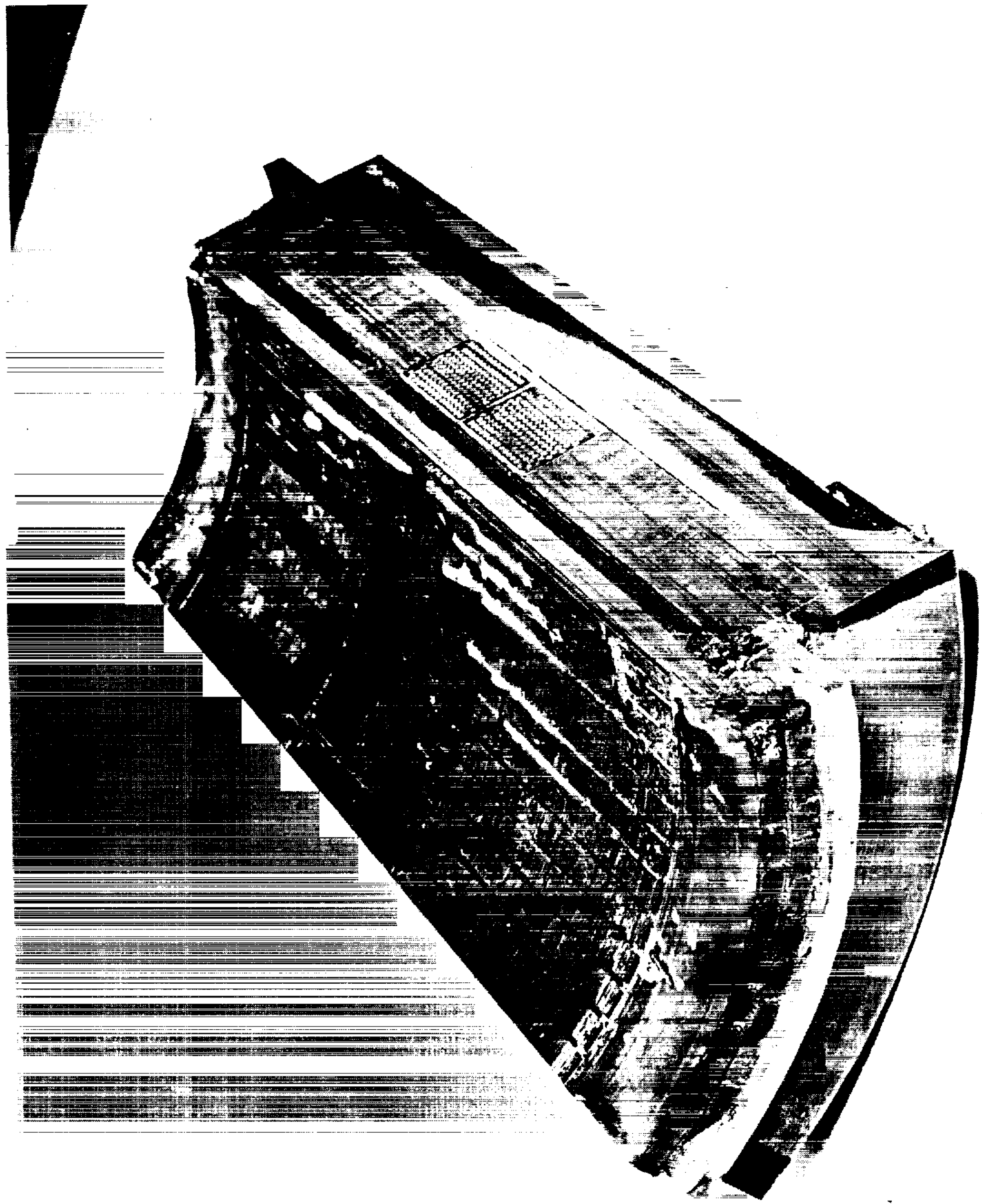


Fig. 7 - Statorette Prior to Removal of Protective Wax

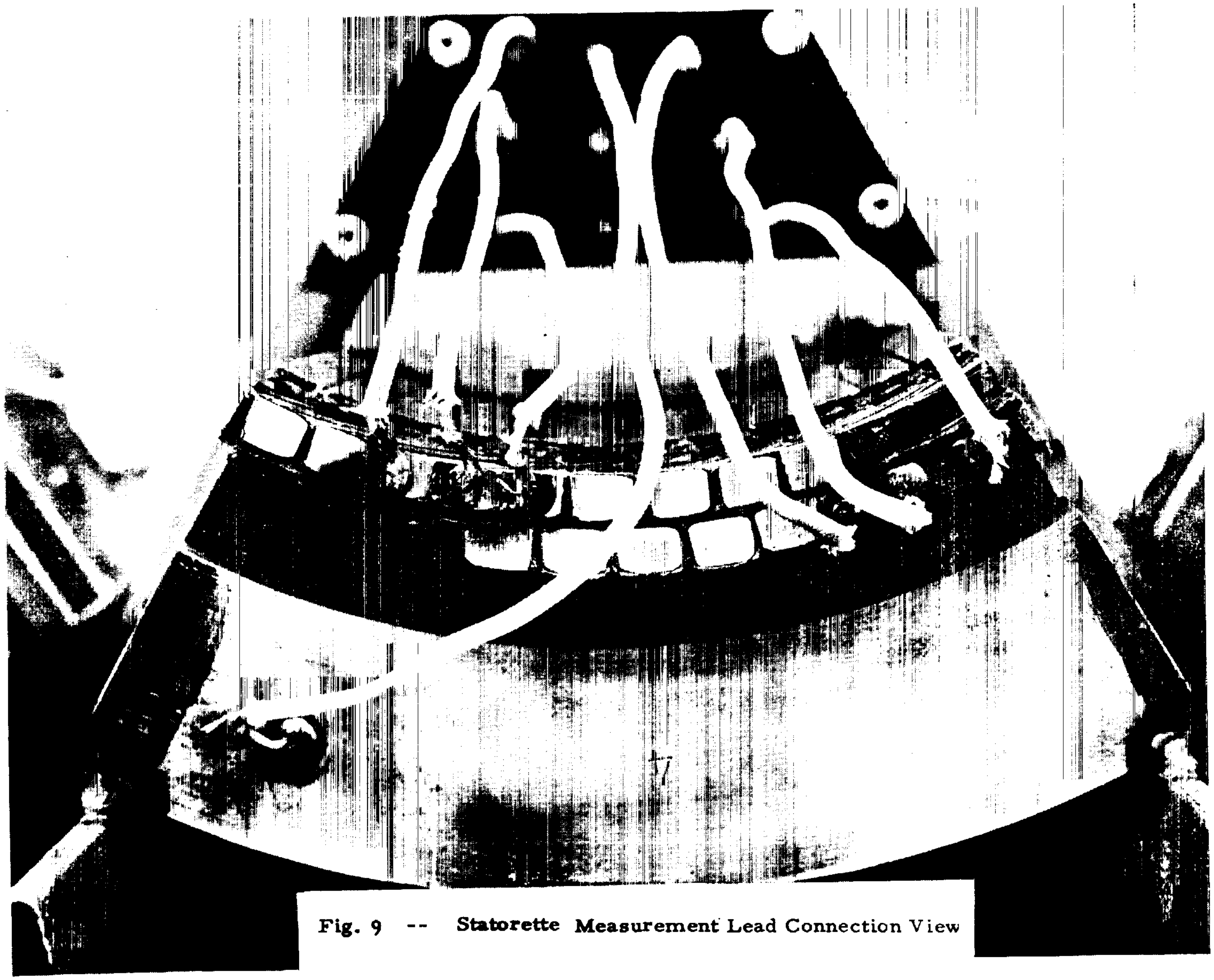
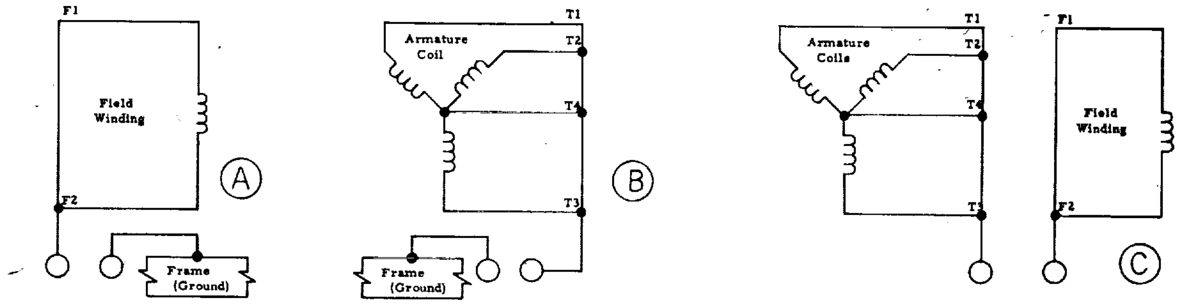


Fig. 9 -- Statorette Measurement Lead Connection View

FIGURE 10 - Test Measurement Schematic Diagrams

Figure 10a - Stator

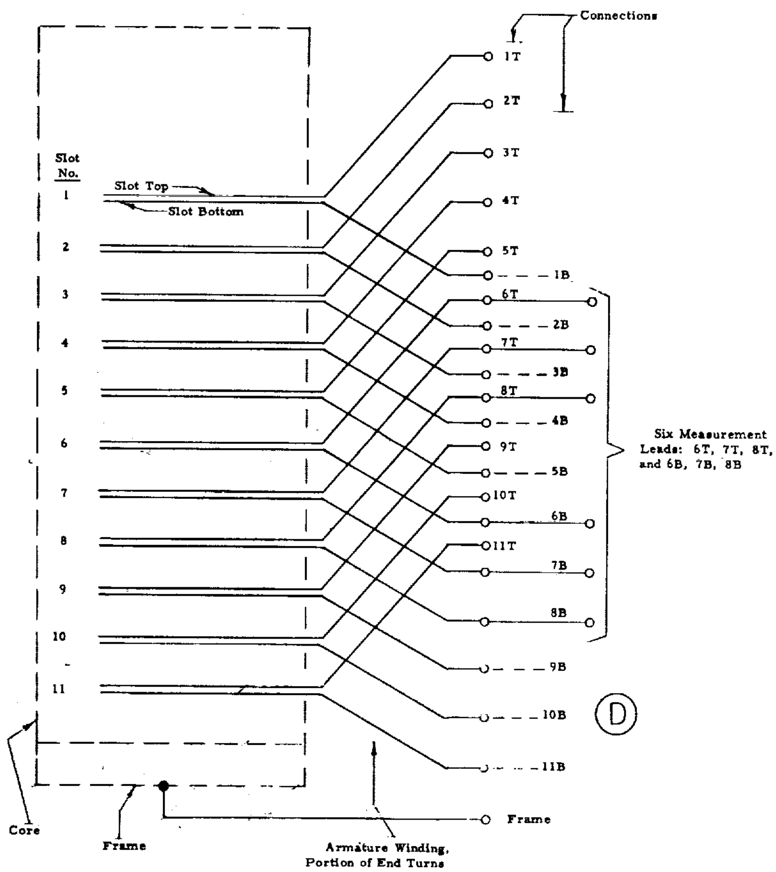


Typical Connection For
Field Winding to Frame Measurements

Typical Armature Winding
To Frame (Ground) Connections

Armature Winding To
Field Winding Connections

Figure 10b - Statorette



Armature Coil Connections For
Slot Top or Bottom Cond.-To-Frame and
Slot Top or Bottom Cond. Measurements

Measurement	Schematic
Corona Onset Voltage	A, B, C, D
Insulation Resistance	A, B, C, D
DC Leakage Current	A, B, C, D
Insulation Resistance and DC Leakage Current at Test Temperature	D
Dielectric Breakdown	D

Fig. 11 - Statorette Positioned in Enclosure for Nitrogen Purged Oven Aging Tests

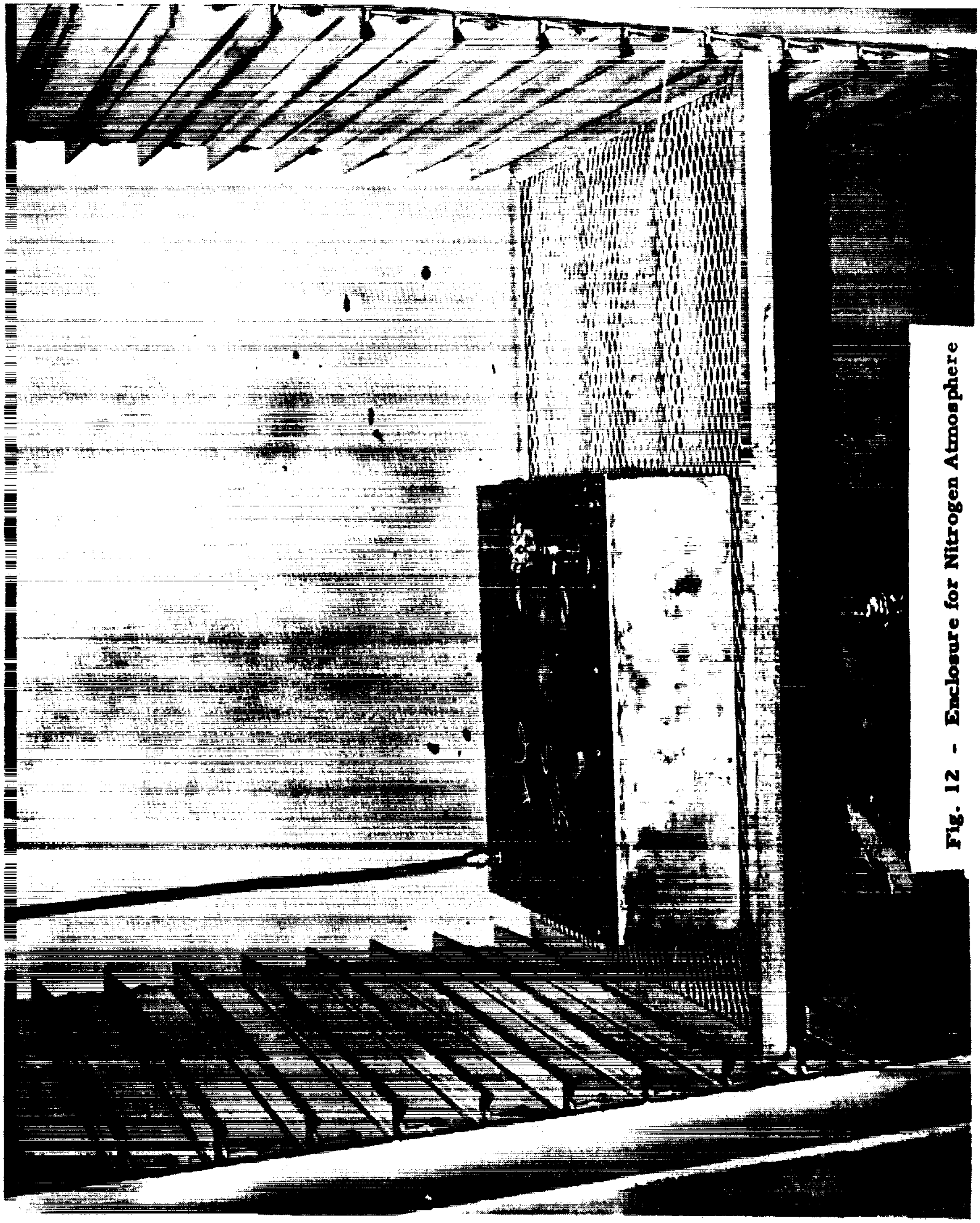


Fig. 12 - Enclosure for Nitrogen Atmosphere

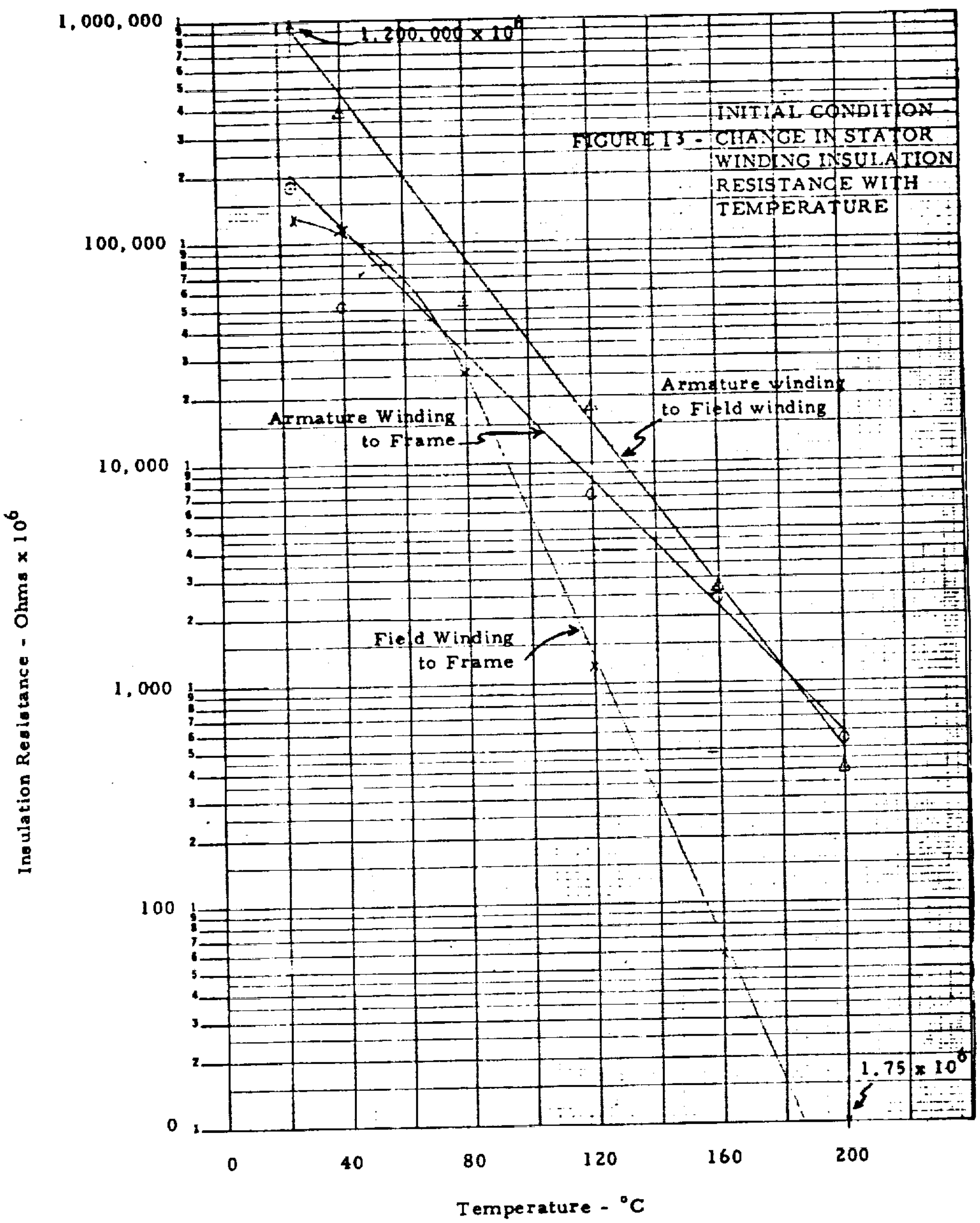

1,000,000
100,000
10,000
1,000
100
0
Insulation Resistance - Ohms x 10^6
0
40
80
120
160
200
Temperature - °C
1,200,000 x 10^6
INITIAL CONDITION
FIGURE 13 - CHANGE IN STATOR WINDING INSULATION RESISTANCE WITH TEMPERATURE
Armature winding to Field winding
Armature Winding to Frame
Field Winding to Frame
1.75 x 10^6

Fig. 14 - 350°C Statorette After Completion of Aging Tests

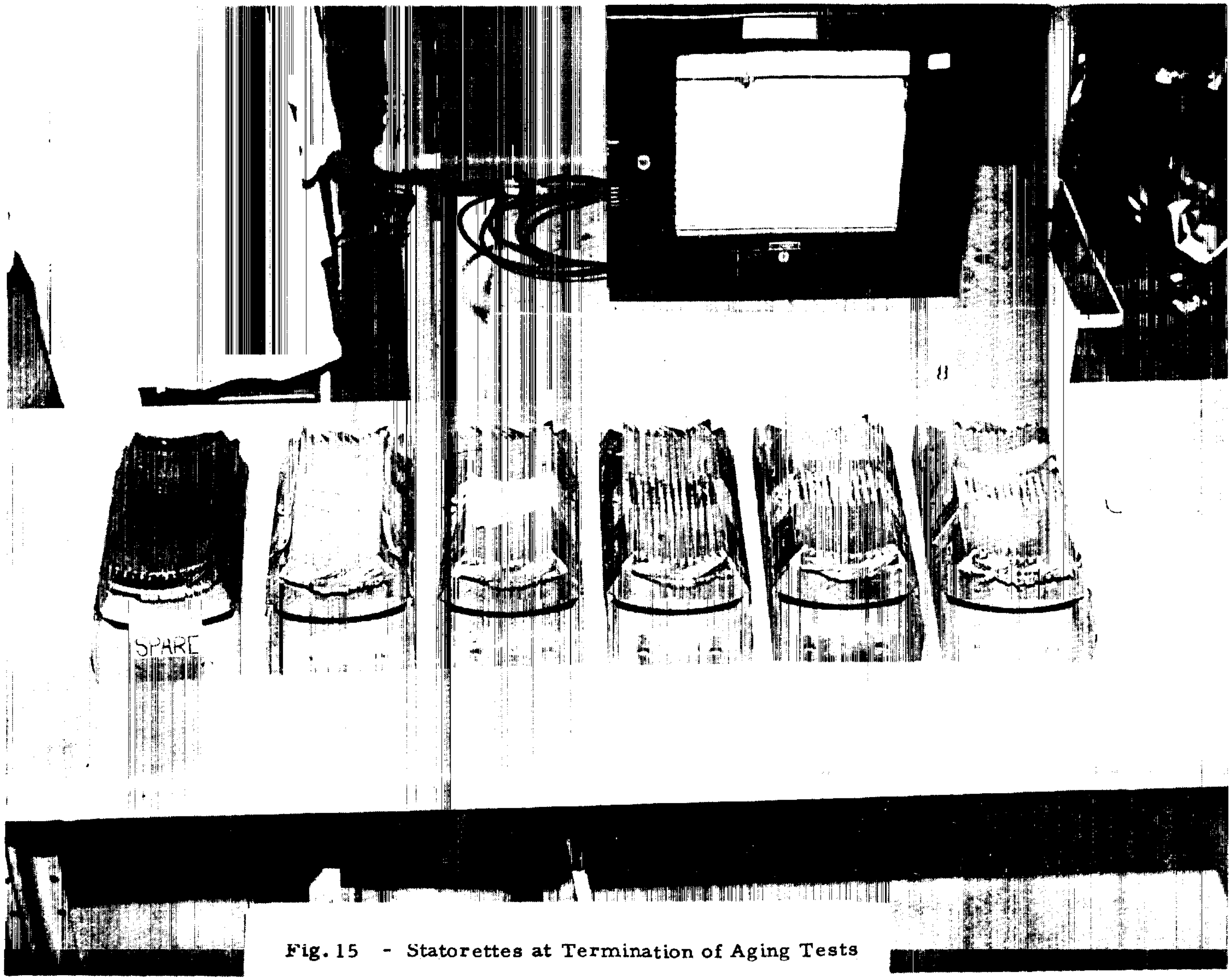


Fig. 15 - Statorettes at Termination of Aging Tests

Figure 16 - Lognormal Probability Plot of Failures - Completed 350°C Aging Data

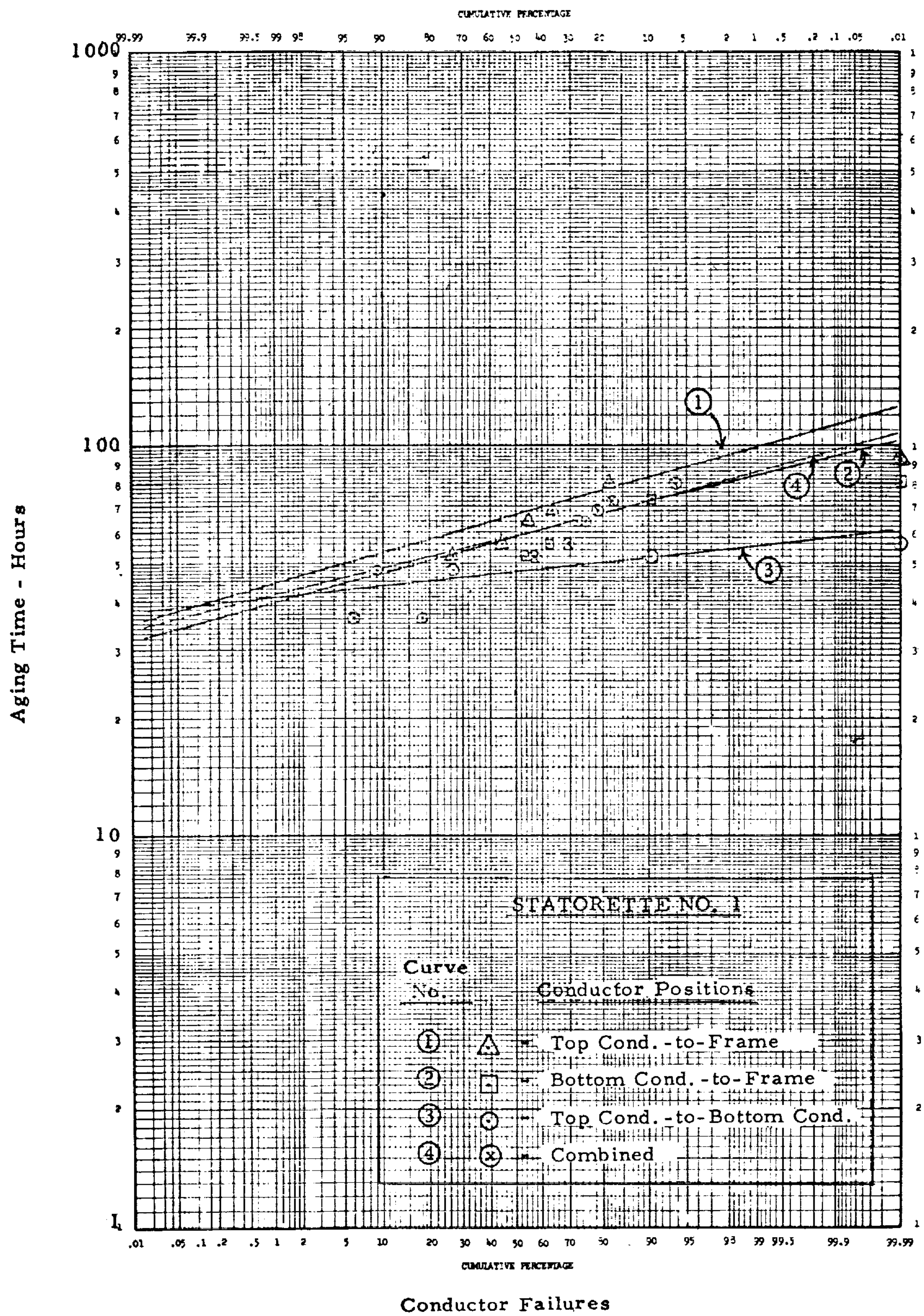


Figure 17 - Lognormal Probability Plot of Failures - Completed 325°C Aging Data

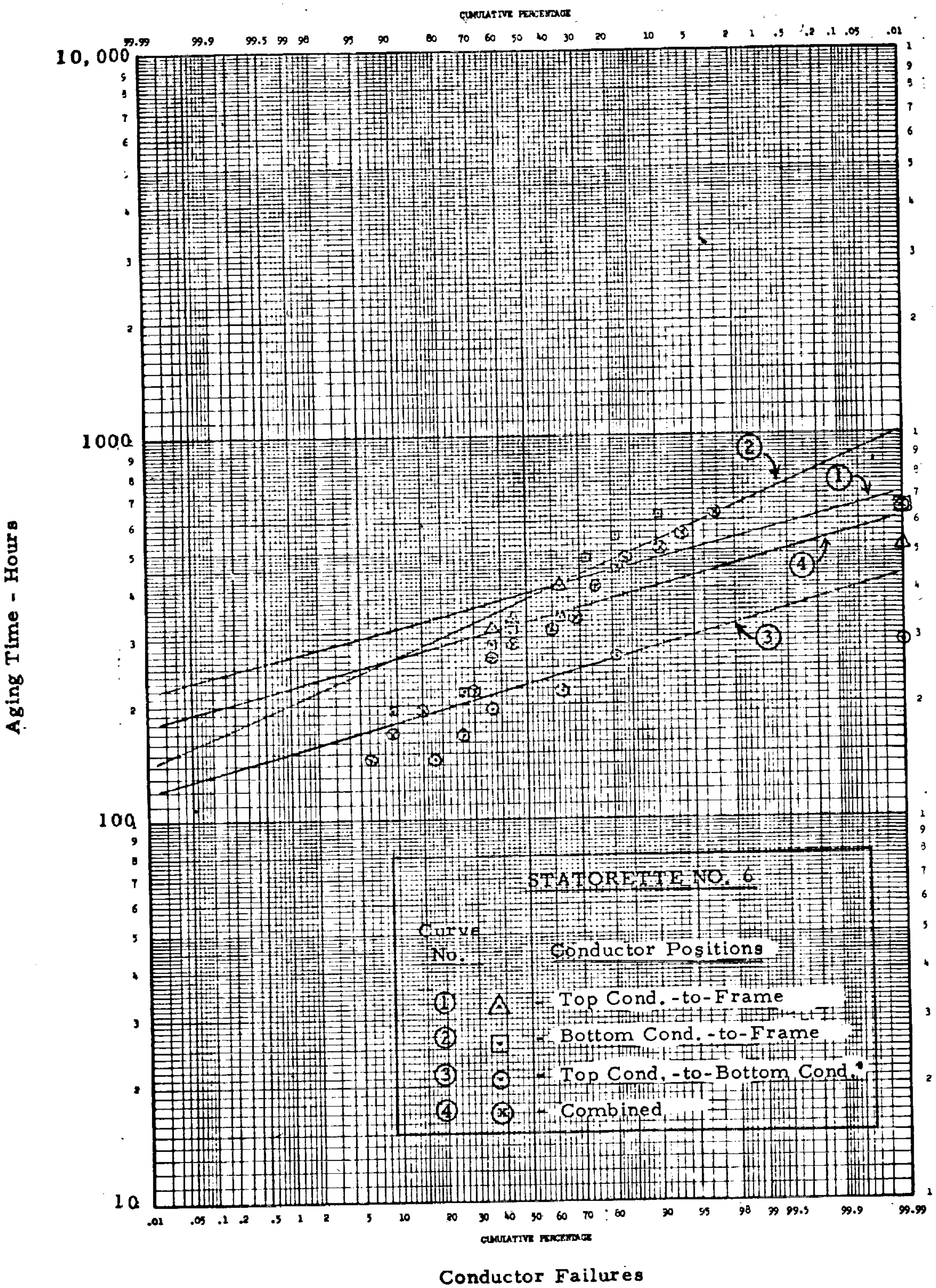


Figure 18 - Lognormal Probability Plot of Failures - Incomplete 300°C Aging Data

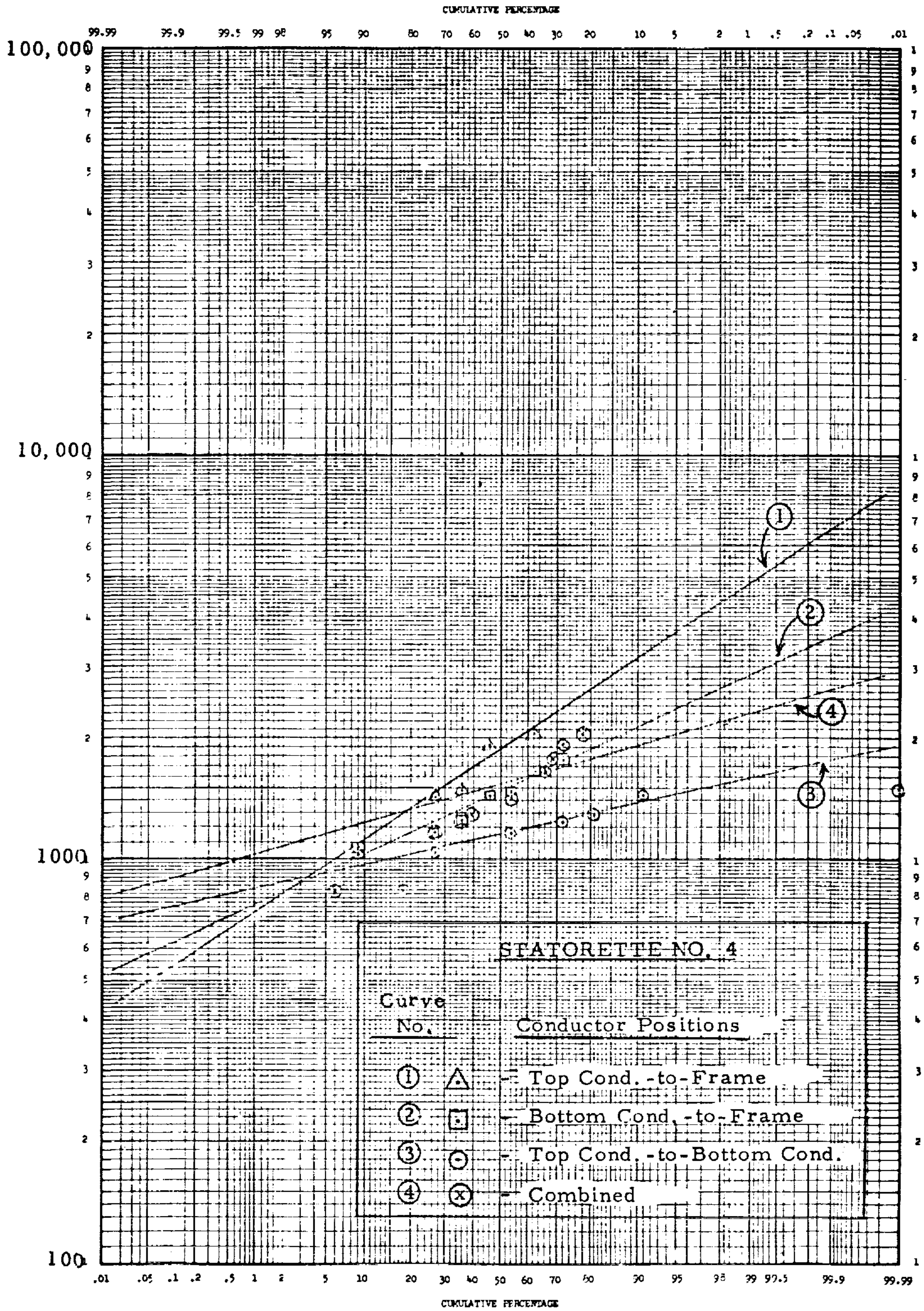


Figure 19 - Lognormal Probability Plot of Failures - Incomplete 275°C Aging Data

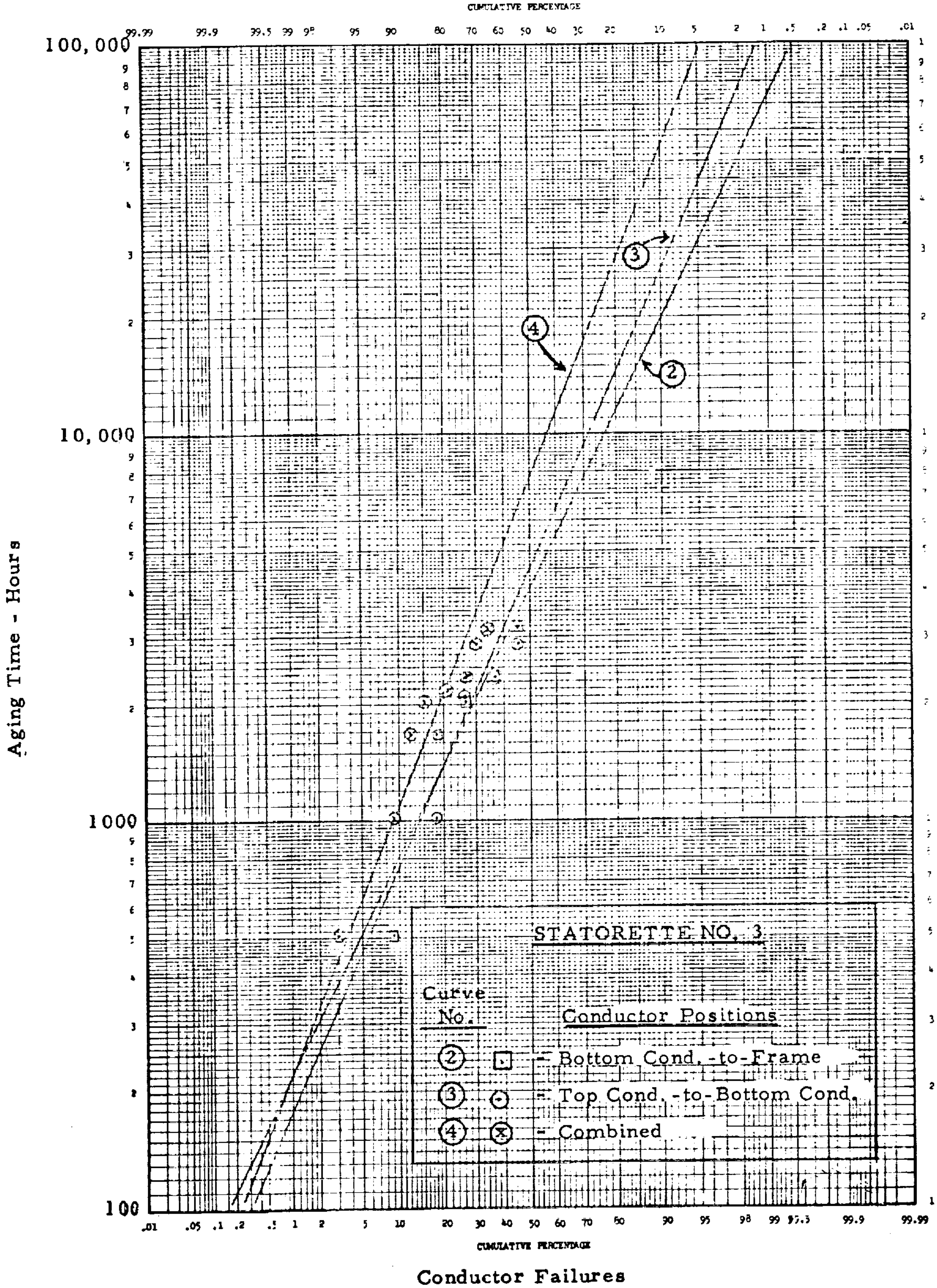
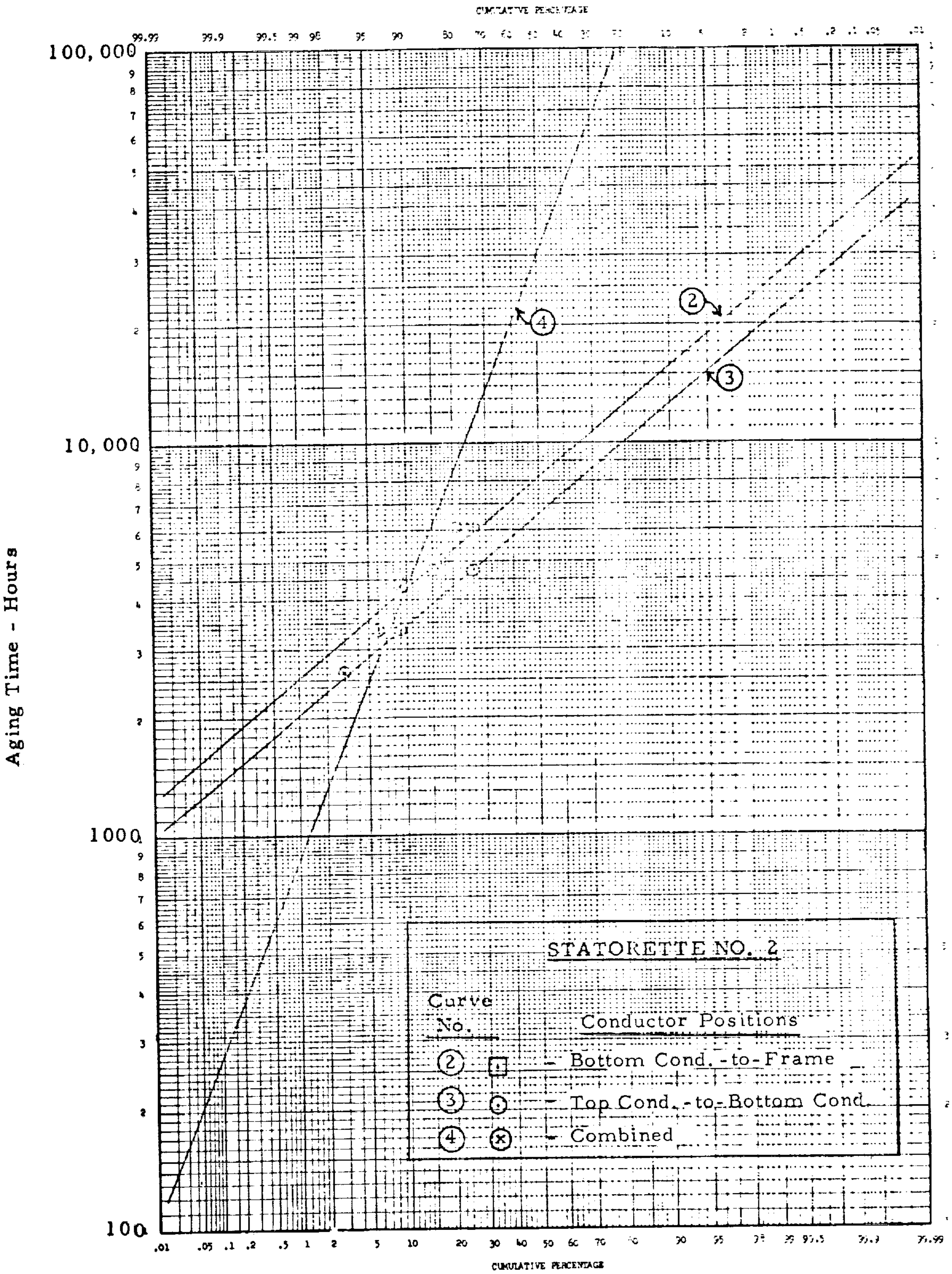
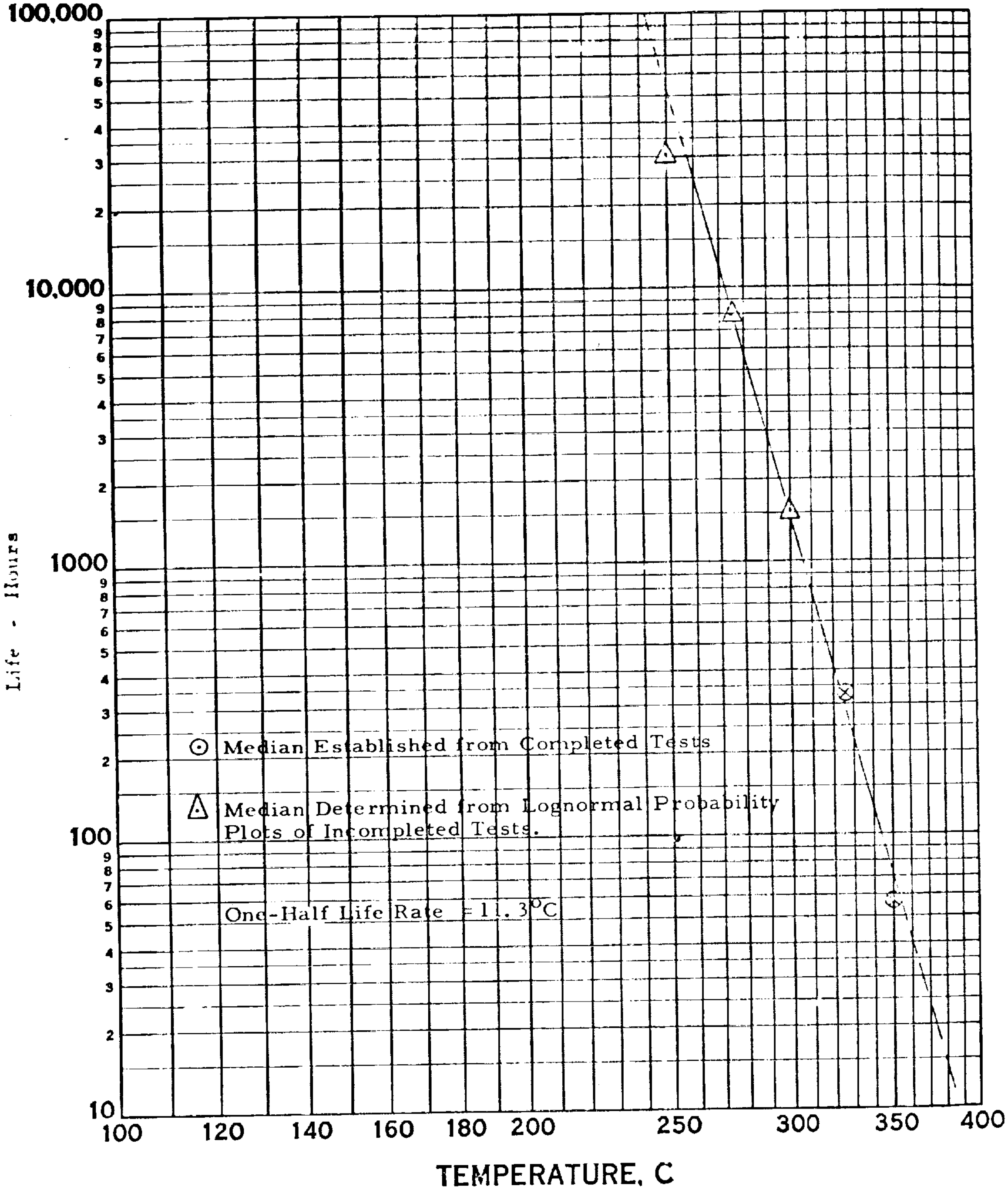


Figure 20 - Lognormal Probability Plot of Failures - Incomplete 250°C Aging Data



Conductor Failures

Figure 21 - Arrhenius Life - Temperature Plot for Statorette Combined Conductor Position Aging Test Data



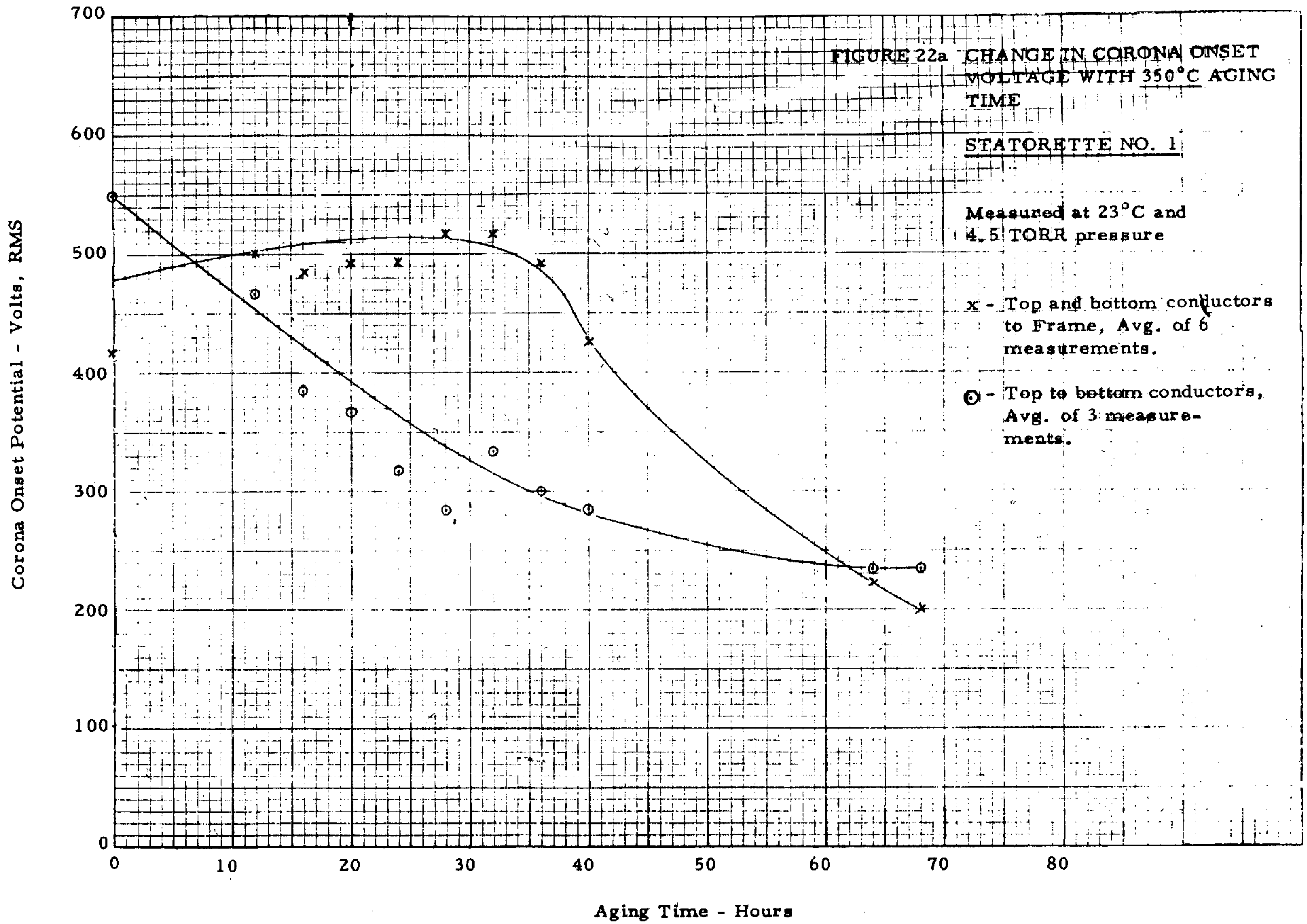


FIGURE 22a CHANGE IN CORONA ONSET VOLTAGE WITH 350°C AGING TIME

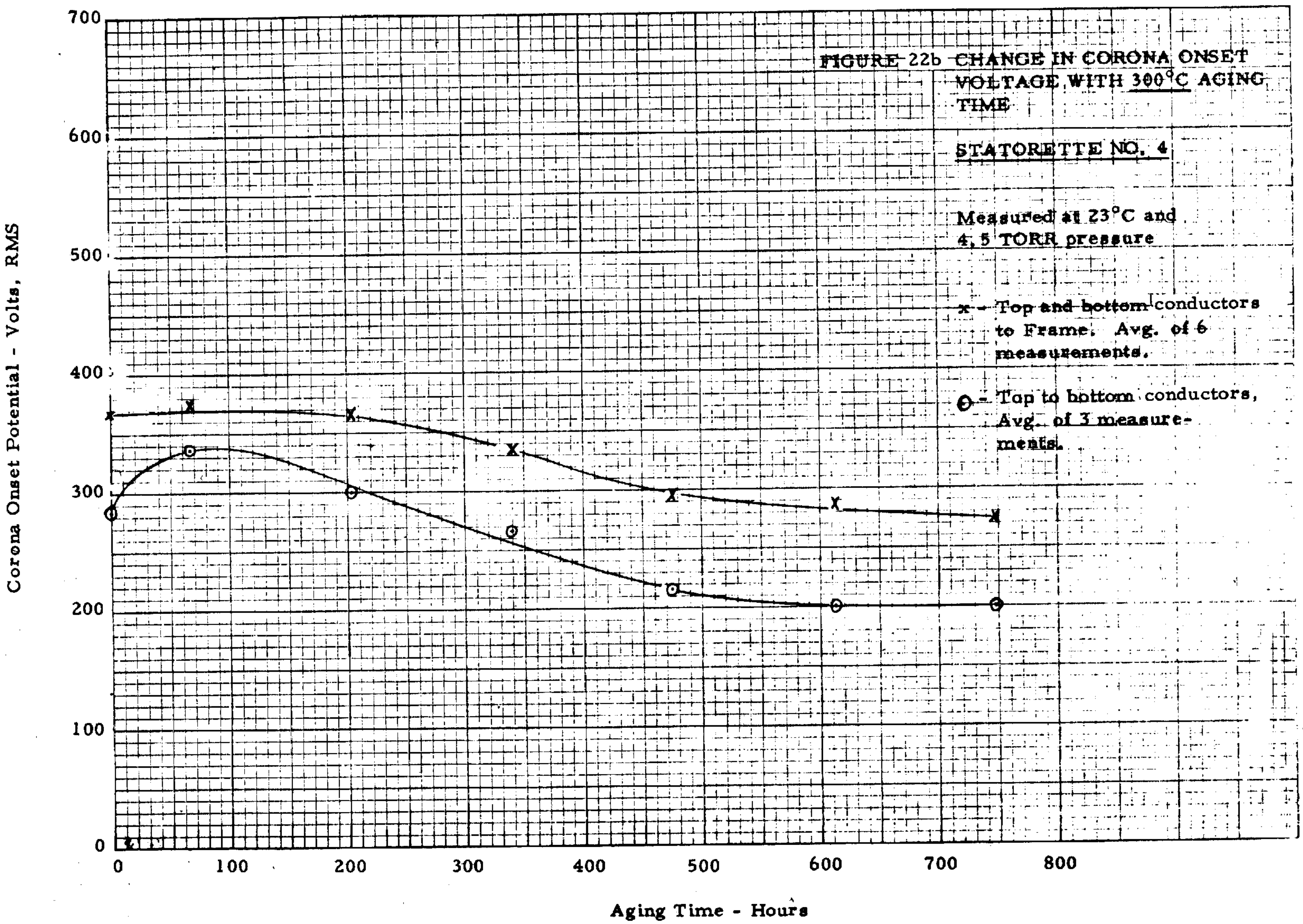


FIGURE 22b CHANGE IN CORONA ONSET VOLTAGE WITH 300°C AGING TIME
STATORETTE NO. 4
Measured at 23°C and 4.5 TORR pressure
x - Top and bottom conductors to Frame. Avg. of 6 measurements.
⊙ - Top to bottom conductors, Avg. of 3 measurements.
Corona Onset Potential - Volts, RMS
Aging Time - Hours
0
100
200
300
400
500
600
700
800

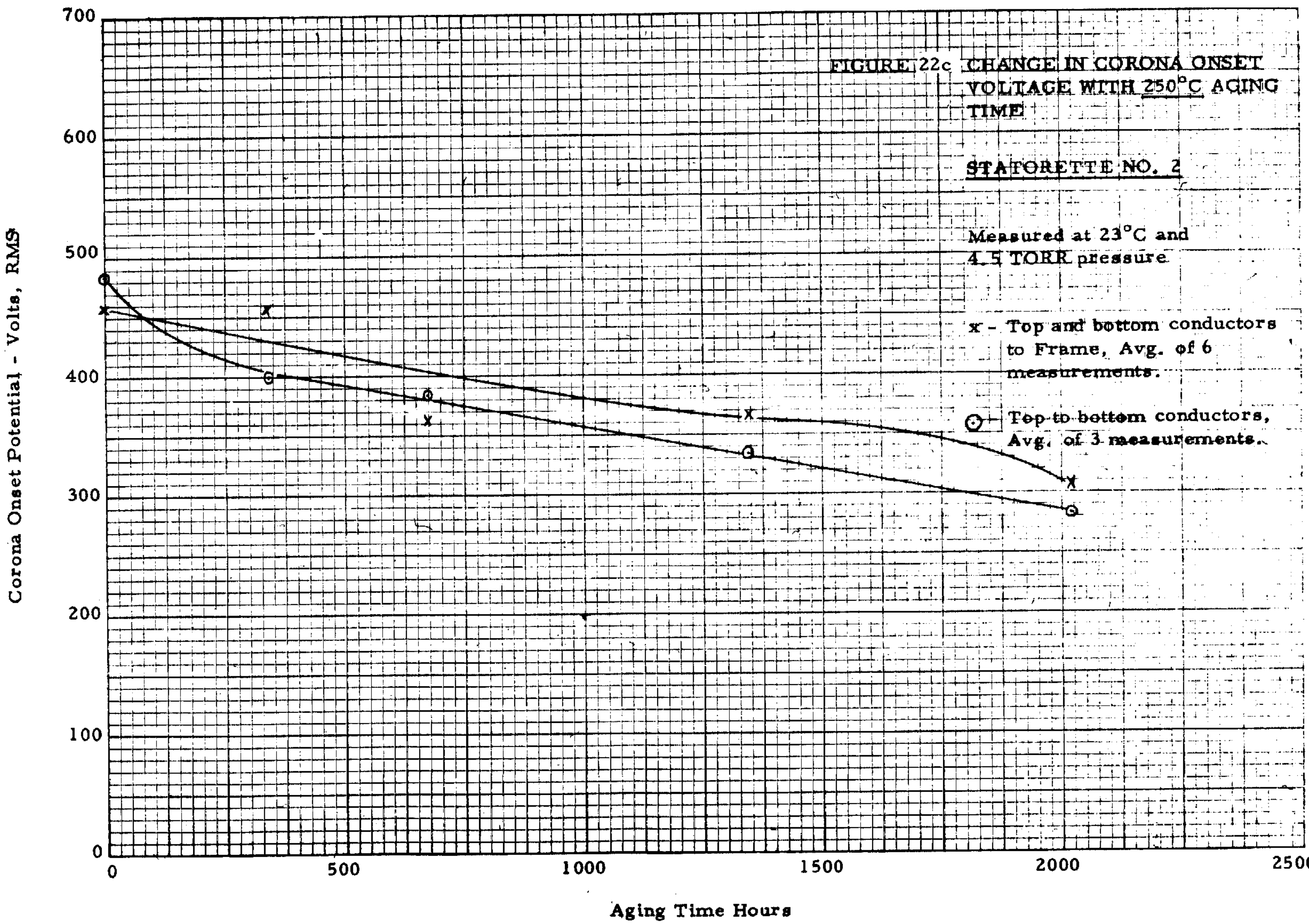
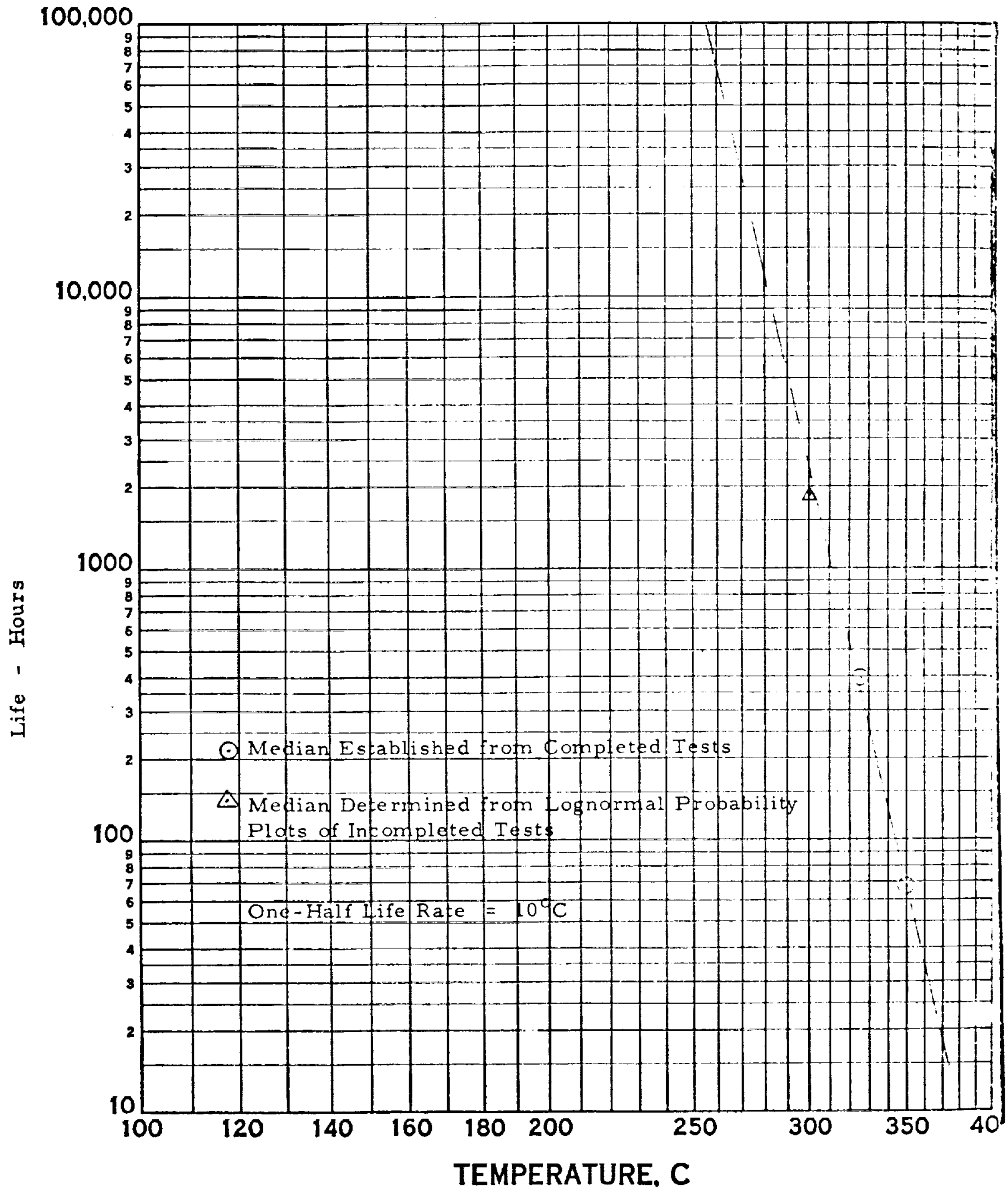


FIGURE 22c CHANGE IN CORONA ONSET VOLTAGE WITH 250°C AGING TIME

Figure 23 - Arrhenius Life - Temperature Plot for Statorette Top Conductor-to-Frame Conductor Position Aging Test Data



REFERENCES

1. Penn, W. B., Schaefer, R. F. and Balke, R. L.: "Alternator Insulation Evaluation Tests", NASA CR-120901, April 1972.

2. Thur, George M.: SNAP-8 Nuclear Electrical Generating System, Interagency Advanced Power Group, Project Brief PIC No. 84, April 1971.

3. IEEE Std. No. 117 - Test Procedure for Evaluation of Systems of Insulating Materials for Random Wound AC Electric Machinery (November 1956)

4. IEEE Std. No. 275 - Test Procedure for Evaluation of Systems of Insulation Materials for AC Electric Machinery Employing Form Wound Preinsulated Stator Coils (December 1966)

5. IEEE Std. No. 304 - Test Procedure for Evaluation and Classification of Insulation Systems for DC Machines (August 1969)

6. Nice, A. W. and Luddy, C. T. : 60 KW Alternator for the SNAP-8 Program, IEEE Conference Paper No. 31PP66-499, 1966.

7. Johnson, L. M., Campbell, F. J. and Brancato, E. L. : "Statistical Analysis of Truncated-Data Methods to Shorten Thermal-Aging Tests of Electrical Insulation", NRL Report 7468, September 19, 1972.

8. IEEE Std. 101-1972, IEEE Guide for the Statistical Analysis of Thermal Life Test Data (March 1972)

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