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KINECTRICS NORTH AMERICA INC. TEST REPORT FOR 3M TO COMPARE THE SALT SPRAY CORROSION PERFORMANCE OF 795-kcmil 3M BRAND COMPOSITE CONDUCTOR TO 795 ACSR CONDUCTOR

Kinectrics North America Inc. Report No.: K-422113-RC-0001-R01
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INTRODUCTION

A Salt Spray Corrosion Test was performed for and under contract to 3M on their 3M Brand Composite Conductor, which is also known as Aluminum Composite Conductor Reinforced (ACCR) Conductor. These tests are part of a larger series of tests to demonstrate the viability of ACCR conductors for use on overhead electric power transmission lines. 3M own all data and copyright to this information and are publicly released by 3M.

There was no difference in performance between weight loss, corrosion, or tensile strength of aluminum alloy wires of the ACCR and the Drake ACSR.

There was no difference in the performance of the exposed ACCR whole conductor samples, ACCR individual aluminum alloy wire samples, or the ACCR individual core samples when compared to the unexposed (reference) samples.

The test was performed from July 16, 2004 to October 8, 2004 by Kinectrics North America Inc. personnel at 800 Kipling Avenue, Toronto, Ontario, M8Z 6C4, Canada.

TEST OBJECTIVE AND STANDARD

The objective of the Salt Spray Corrosion Test was to observe the effects on the whole conductor, and individual core wires and aluminum strands of the ACCR conductor when exposed to a salt spray atmosphere up to 2000 hours. A "Drake" 795 kcmil ACSR was also tested for comparison purposes. It should be noted that the ACCR conductor is comprised of aluminum-zirconium strands and those for the ACSR are 1350-H19 aluminum strands. The test was performed using an environmental chamber that complied with ASTM B117-03*, "Standard Practice for Operating Salt Spray Apparatus".*

TEST CONDUCTORS

The ACCR 795-T16, 26/19 conductor manufactured by 3M was compared to ACSR 795 kcmil, 26/7 "Drake" conductor commonly used on overhead transmission lines. The construction of these conductors is the same in that there are 26 aluminum alloy wires in 2 layers surrounding the core wires. The outside diameter of both conductors is 1.108 inches (28.143 mm) and the individual aluminum wire diameters are also the same. The differences reside in the composition of the aluminum alloy wires and the core wires. The aluminum alloy in the ACCR conductor contains a small quantity of zirconium. The core wires of the ACCR are made from a metal matrix composite. There are 19 smaller diameter composite core wires in ACCR compared to 7 larger steel wires in ACSR.

A data sheet on the ACCR conductor used in the salt spray corrosion test is contained in Appendix A.

TEST SET-UP

The fog chamber has a salt-solution reservoir that is capable of maintaining an adequate solution. There is equipment to atomize the salt-solution including suitable nozzles and compressed air to provide a uniform spray within the chamber. The temperature of the chamber can also be controlled. The facility used to perform the test was an Industrial Filter and Pump 411.3ACD salt spray chamber and is shown in Figure 1.

TEST PROCEDURE

The fog chamber was programmed to provide a finely divided, wet dense fog while the air supply to the atomizer was maintained at a relative humidity of 95% to 98%. The chamber air temperature was maintained at 35 °C ± 1. The salt solution was 5% concentration and was prepared by dissolving by weight, 5 +/-1 parts of de-mineralized salt in 95 parts of de-ionized water. The quantity of collected salt spray was maintained at between about 1.0 to 2.0 ml/hour, as measure by a collecting area of 80 square cm. The pH of the collected solution was maintained between 6.5 to 7.2, at 25ºC, by adding the appropriate amount of sodium hydroxide.

The measuring instruments used in this test are listed in Appendix B.

Test Samples

Individual aluminum alloy (AA) wires from each of the ACCR and the ACSR conductors, individual core wires from the ACCR conductor, and whole ACCR conductors were prepared for testing. The whole ACSR conductor was not tested.

The following list shows the quantity and the length of the test samples that were prepared.

- 6 sets of 5 ACCR individual aluminum alloy wires = 30 total, 20 inches in length.
- 6 sets of 5 ACCR individual composite core wires = 30 total, 33 inches in length.
- 6 sets of 5 ACSR individual aluminum alloy wires = 30 total, 20 inches in length.
- 6 ACCR whole conductor samples = 6 total, 33 inches in length.

One set from each sample type was not inserted in the chamber and was used as the "initial" reference sample.

Test Program

Each set of 5 samples of individual wires, and 5 ACCR whole conductor samples were exposed to the salt spray for 5 different time durations; 200, 500, 1000, 1500, and 2000 hours. Prior to being inserted into the chamber, the samples were gently wiped to remove any loose particles and then weighed. All samples were placed in the chamber with an angle 20° from vertical. At the end of each test period, the samples were removed, gently washed with warm water and left to dry. The samples were then re-weighed.

The insertion of the samples was staggered in order to accommodate all the samples. The exposure timeline for the samples was as follows:

- The 200, 1500, and 2000 hour individual and whole conductor samples were inserted first.
- After the 200 hour samples were done, they were removed and the 500 hour samples inserted.
- After the 500 hour samples were done, they were removed and the 1000 hour samples inserted.
- After the 1500 hour samples were done, they were removed.
- After the 1000 hour samples were done, they were removed.
- After the 2000 hour samples were done, they were removed.

All individual aluminum alloy wires and all aluminum alloy wires from the whole conductor samples were tension tested to failure. The individual composite core wires and the composite core wires from the whole conductor samples were sent to 3M to be tension tested, (a special grip was required to perform the tension test). The tensile strength measurement on the aluminum alloy wires was based on ATSM B557-94. The samples were loaded at a rate of 1500 lb/minute.

The sixth set of samples was used for the "initial" sample. All the aluminum alloy wires were weighed before the corrosion test began, and at the end of the 2000 hours test period. The wires were tensioned to failure to establish a base line for the initial reference tensile strength. All the composite core wires were sent to 3M to be tension tested.

Stainless-steel gear clamps were used to hold both ends of the whole conductor samples in place. Tie-wraps were used at one end of the individual wire samples to help support them on the railings in the chamber.

TEST RESULTS

Figure 2 shows some of the samples in the salt spray chamber.

3M 795 ACCR Individual AA Wires

The weight before and after, the weight loss, and the tensile strength results for the individual AA wires are summarized in Tables 1a, b, c, and Table 2 respectively.

A photograph of the individual wires after each test period is shown in Figure 3.

Table 1a, b, c Salt Spray Test Weight Results for 3M 795 ACCR – Individual AA Wires

Table 1a Weight of 3M AA Wires Before Exposure Period (in grams)						
Wire No	**Initial**	**200 hrs**	**500 hrs**	**1000 hrs**	**1500 hrs**	**2000 hrs**
1	23.734	22.654	22.552	22.576	22.578	22.646
2	23.492	22.499	22.440	22.266	22.658	22.558
3	23.407	22.429	22.556	22.484	22.600	22.551
4	24.240	22.267	22.340	22.653	22.328	22.715
5	23.605	23.822	23.131	23.530	23.456	23.583
Avg	**23.696**	**22.734**	**22.604**	**22.702**	**22.724**	**22.811**

Table 1b Weight of 3M AA Wires After Exposure Period (in grams)						
Wire No	**Initial**	**200 hrs**	**500 hrs**	**1000 hrs**	**1500 hrs**	**2000 hrs**
1	23.737	22.659	22.553	22.587	22.631	22.662
2	23.491	22.504	22.441	22.274	22.664	22.554
3	23.409	22.433	22.559	22.486	22.612	22.564
4	24.242	22.275	22.345	22.667	22.338	22.731
5	23.608	23.833	23.134	23.540	23.471	23.604
Avg	**23.697**	**22.744**	**22.606**	**22.711**	**22.743**	**22.823**

Table 1c Weight Loss of 3M AA Wires due to Exposure Period (in grams)						
	Initial	**200 hrs**	**500 hrs**	**1000 hrs**	**1500 hrs**	**2000 hrs**
Difference of Avg Values	**+0.001**	**+0.010**	**+0.002**	**+0.009**	**+0.019**	**+0.012**

The increase in weight was probably due to the salt deposits that remained on the wires after being washed down and dried. No corrosion products were observed.

Table 2 Salt Spray Test Tensile Strength Results for 3M 795 ACCR – Individual AA Wires

Strength of 3M AA Wires After Exposure Period (in lbf.)						
Wire No	**Initial**	**200 hrs**	**500 hrs**	**1000 hrs**	**1500 hrs**	**2000 hrs**
1	569	571	577	574	566	572
2	561	581	570	571	568	564
3	564	580	571	580	564	559
4	578	575	563	574	573	567
5	559	576	555	572	557	549
Avg	**566**	**577**	**567**	**572**	**566**	**562**
% of Initial	**100**	**101.9**	**100.2**	**101.1**	**100.0**	**99.3**

DRAKE 795 ACSR 1350-H19 AA Wires

The weight before and after, the weight loss, and the tensile strength results for the individual AA wires are summarized in Tables 3a, b, c, and Table 4 respectively.

A photograph of the individual wires after each test period is shown in Figure 4.

Table 3a, b, c Salt Spray Test Weight Results for Drake 795 ACSR – 1350-H19 AA Wires

Table 3a Weight of 1350-H19 AA Wires Before Exposure Period (in grams)						
Wire No	**Initial**	**200 hrs**	**500 hrs**	**1000 hrs**	**1500 hrs**	**2000 hrs**
1	22.074	22.371	22.155	22.089	21.898	21.987
2	22.041	22.336	22.406	22.153	22.066	22.129
3	21.918	22.052	22.146	22.240	22.101	21.985
4	22.326	21.981	22.329	22.448	22.176	22.035
5	22.310	22.380	22.021	22.120	22.176	22.287
Avg	**22.134**	**22.224**	**22.211**	**22.210**	**22.083**	**22.085**

Table 3b Weight of 1350-H19 AA Wires After Exposure Period (in grams)						
Wire No	**Initial**	**200 hrs**	**500 hrs**	**1000 hrs**	**1500 hrs**	**2000 hrs**
1	22.076	22.381	22.157	22.100	21.915	22.012
2	22.045	22.344	22.410	22.168	22.089	22.148
3	21.921	22.063	22.154	22.247	22.119	22.017
4	22.327	21.990	22.339	22.458	22.192	22.045
5	22.312	22.389	22.027	22.125	22.196	22.306
Avg	**22.136**	**22.233**	**22.217**	**22.220**	**22.102**	**22.106**

Table 3c Weight Loss of 1350-H19 AA Wires due to Exposure Period (in grams)						
	Initial	**200 hrs**	**500 hrs**	**1000 hrs**	**1500 hrs**	**2000 hrs**
Difference of Avg Values	**+0.002**	**+0.009**	**+0.006**	**+0.010**	**+0.019**	**+0.021**

The increase in weight was probably due to the salt deposits that remained on the wires after being washed down and dried.

Table 4 Salt Spray Test Tensile Strength Results for Drake 795 ASCR – 1350-H19 AA Wires

Strength of 1350-H19 AA Wires After Exposure Period (in lbf.)						
Wire No	**Initial**	**200 hrs**	**500 hrs**	**1000 hrs**	**1500 hrs**	**2000 hrs**
% of Initial	**100**	**98.9**	**100.0**	**100.0**	**100.0**	**98.3**

3M 795 ACCR Individual Composite Core Wires

The weight before and after, the weight loss, and the tensile strength results for the individual composite core wires are summarized in Tables 5a, b, c, and Table 6 respectively.

A photograph of the individual wires after each test period is shown in Figure 5.

Table 5a, b, c Salt Spray Test Weight Results for 3M Individual Composite Core Wires

Table 5a Weight of 3M Composite Core Wires Before Exposure Period (in grams)						
Wire No	**Initial**	**200 hrs**	**500 hrs**	**1000 hrs**	**1500 hrs**	**2000 hrs**
1	10.168	10.021	10.067	10.163	10.096	10.057
2	9.992	10.153	10.118	10.284	10.060	10.258
3	10.128	10.177	10.142	10.233	10.147	10.073
4	10.110	10.155	10.138	10.130	10.151	10.246
5	10.178	10.258	10.019	10.014	10.144	10.162
Avg	**10.115**	**10.153**	**10.097**	**10.165**	**10.120**	**10.159**

Table 5b Weight of 3M Composite Core Wires After Exposure Period (in grams)						
Wire No	**Initial**	**200 hrs**	**500 hrs**	**1000 hrs**	**1500 hrs**	**2000 hrs**
1	10.170	10.030	10.073	10.177	10.109	10.088
2	9.994	10.159	10.131	10.294	10.069	10.278
3	10.132	10.183	10.153	10.243	10.191	10.089
4	10.113	10.162	10.143	10.142	10.166	10.266
5	10.181	10.264	10.032	10.031	10.152	10.182
Avg	**10.118**	**10.160**	**10.106**	**10.177**	**10.137**	**10.181**

Table 5c Weight Loss of 3M Composite Core Wires due to Exposure Period (in grams)						
	Initial	**200 hrs**	**500 hrs**	**1000 hrs**	**1500 hrs**	**2000 hrs**
Difference of Avg Values	**+0.003**	**+0.007**	**+0.009**	**+0.012**	**+0.017**	**+0.022**

Table 6 Salt Spray Test Tensile Strength Results for 3M Individual Composite Core Wires

Tensile Strength of 3M Individual Composite Core Wires After Exposure Period (in lbf.)						
Wire No	**Initial**	**200 hrs**	**500 hrs**	**1000 hrs**	**1500 hrs**	**2000 hrs**
1	1327	1220	1230	1238	1291	1368
2	1366	1318	1345	1219	1320	1336
3	1235	1271	1306	1298	1338	1435
4	1233	1339	1360	1270	1401	1337
5	1233	1241	1224	1262	1368	1270
Avg	**1279**	**1278**	**1293**	**1257**	**1344**	**1349**
% of Initial	**100**	**99.9**	**101.1**	**98.3**	**105.1**	**105.5**

3M 795 ACCR - Whole Conductor

The weight before and after, and the weight loss results for the whole conductor samples are summarized in Table 7. The tensile strength of the AA wires from the whole conductor is summarized in Table 8. The tensile strength of the composite core wires from the whole conductor is summarized in Table 9.

A photograph of the whole conductors after each test period is shown in Figure 6.

A photograph of composite cores (with protective wrap) from the whole conductor, after each test period, is shown in Figure 7.

Close-up photographs of the outer layer and 2nd layer from each test period are shown in Figures 8a to 8f, and 9a to 9f, respectively.

Table 7 Salt Spray Test Weight Loss Results for 3M 795 ACCR – Whole Conductor

Weight Loss of 3M Whole Conductor Before & After Exposure Period (in grams)						
	Initial	**200 hrs**	**500 hrs**	**1000 hrs**	**1500 hrs**	**2000 hrs**
Before	1164	1149	1164	1154	1163	1158
After	1164	1149	1170	1157	1166	1162
Difference	**+0**	**+0**	**+6**	**+3**	**+3**	**+4**

The increase in weight of the conductors was probably due to the salt deposits that had collected between the layers and could not be washed out.

Table 8 Salt Spray Test Strength Results for 3M 795 ACCR – Whole Conductor AA Wires

Strength of 3M Whole Conductor AA Wires After Exposure Period (in lbf.)						
Wire No	**Initial**	**200 hrs**	**500 hrs**	**1000 hrs**	**1500 hrs**	**2000 hrs**
OUTER LAYER AA WIRES						
1	575	575	569	569	569	559
2	557	566	568	559	573	558
3	566	571	575	575	561	570
4	570	565	560	556	552	570
5	573	567	562	558	565	561
6	569	571	572	564	566	562
7	575	567	558	553	566	564
8	559	571	564	575	558	558
9	573	575	571	557	570	582
10	571	570	556	561	568	552
11	572	577	563	572	573	580
12	574	559	559	568	561	572
13	564	571	561	568	575	572
14	571	571	572	569	560	566
15	565	553	578	562	563	565
16	564	568	561	549	565	553
Avg	**569**	**569**	**566**	**563**	**565**	**565**
INNER (2nd) LAYER AA WIRES						
17	570	567	579	566	570	576
18	578	580	571	560	569	571
19	567	565	572	567	572	573
20	571	574	567	565	582	578
21	586	559	582	576	567	577
22	557	573	577	572	567	577
23	583	576	585	566	581	572
24	575	564	574	567	576	565
25	576	572	576	561	577	572
26	583	583	558	571	561	575
Avg	**575**	**571**	**574**	**567**	**572**	**574**
Overall Avg	**571**	**570**	**569**	**565**	**568**	**568**
% of Initial	**100**	**99.8**	**99.6**	**98.9**	**99.5**	**99.5**

Table 9 Salt Spray Test Tensile Strength Results for 3M 795 ACCR – Whole Conductor Composite Core Wires

Tensile Strength of 3M Whole Conductor Composite Core Wires After Exposure Period (in lbf.)						
Wire No	**Initial**	**200 hrs**	**500 hrs**	**1000 hrs**	**1500 hrs**	**2000 hrs**
1	1225	1306	1361	1280	1367	1291
2	1296	1371	1290	1384	1382	1343
3	1316	1363	1196	1346	1251	1307
4	1337	1239	1210	1297	1274	1432
5	1387	1198	1286	1342	1270	1376
6	1260	1347	1325	1253	1442	1268
7	1386	1431	1332	1247	1411	1307
8	1274	1213	1437	1424	1354	1214
9	1361	1443	1271	1307	1348	1332
10	1304	1275	1392	1334	1325	1332
11	1270	1351	1267	1286	1242	1206
12	1360	1291	1315	1313	1328	1120
13	1320	1306	1360	1324	1285	1332
14	1290	1305	1359	1284	1315	1390
15	1323	1141	1113	1309	1391	1293
16	1252	1324	1396	1350	1372	1291
17	1323	1359	1308	1259	1270	1356
18	1309	1365	1303	1317	1313	1241
19	1369	1326	1240	1420	1384	1396
Avg	**1314**	**1313**	**1303**	**1320**	**1333**	**1307**
% of Initial	**100**	**99.9**	**99.2**	**100.5**	**101.5**	**99.5**

SUMMARY OF OBSERVATIONS

3M 795 ACCR AA Wires and Drake 795 ACSR AA Wires – Individual Wires

- When comparing the tensile strength of the individual ACCR AA wires and ACSR 1350-H19 AA wire samples for all test periods, the results do not show that one performs better or worse than the other.

- When comparing the weight loss of the individual ACCR AA wires and ACSR 1350-H19 AA wire samples for all test periods, the results do not show that one performs better or worse than the other. There is no indication of loss of material for either AA wire type.

- When comparing the corrosion of the individual ACCR AA wires and ACSR 1350-H19 AA wire samples for all test periods, the visual assessment does not show that one performs better or worse than the other.

3M 795 ACCR Composite Core Wires – Individual Wires

- When comparing the tensile strength of the individual ACCR composite wire samples for all test periods, the results show that there is no significant difference.

- When comparing the weight loss of the individual ACCR composite wire samples for all test periods, the results show that there is no indication of loss of material.

- When comparing the corrosion of the individual ACCR composite wire samples for all test periods, the visual assessment shows that there is no significant difference.

3M 795 ACCR Whole Conductor

- When comparing the weight loss of the ACCR whole conductor samples for all test periods, the results show that there is no indication of loss of material.

3M 795 ACCR Whole Conductor – AA Wires

- When comparing the tensile strength of the ACCR whole conductor AA wire samples for all test periods, the results show there is no significant difference.

- When comparing the corrosion of the ACCR whole conductor AA wire samples for all test periods, the visual assessment shows that there are no signs of damage or significant deterioration. The outer layers became more discolored as each test period past, turning gray to dark gray. The dark gray areas in the 1500 and 2000 hour test periods showed some signs of the beginning of etching of the aluminum surface. The 2nd layer showed little visual signs of effect to the cable. Each test period showed more discoloring. The 2000 hour 2nd layer sample was about half shiny and half discolored.

3M 795 ACCR Whole Conductor – Composite Core Wires

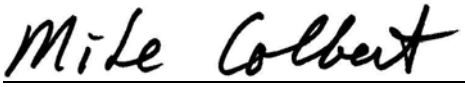
- When comparing the tensile strength of the ACCR whole conductor composite wire samples for all test periods, the results show that there is no significant difference.

CONCLUSION

There was no difference in performance between weight loss, corrosion, or tensile strength of aluminum alloy wires of the ACCR and the Drake ACSR.

There was no difference in the performance of the exposed ACCR whole conductor samples, ACCR individual aluminum alloy wire samples, or the ACCR individual core samples when compared to the unexposed (reference) samples.

Prepared by:



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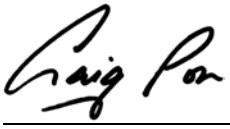

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ACKNOWLEDGEMENTS and DISCLAIMER

Kinectrics North America Inc. has prepared this report in accordance with, and subject to, the terms and conditions of the contract between Kinectrics North America Inc. and 3M Company, Purchase Order Number 0000969870.

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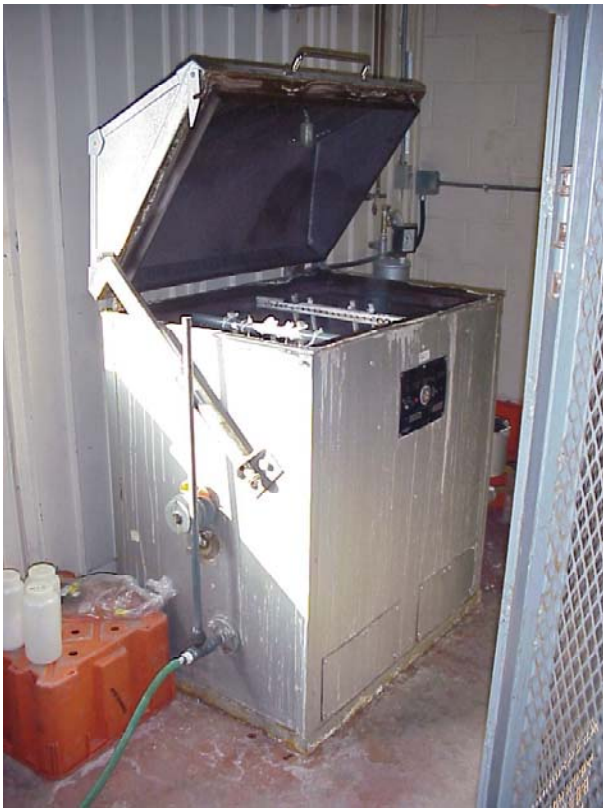

Figure 1 Industrial Filter and Pump, Model 411.3ACD Salt Spray Chamber

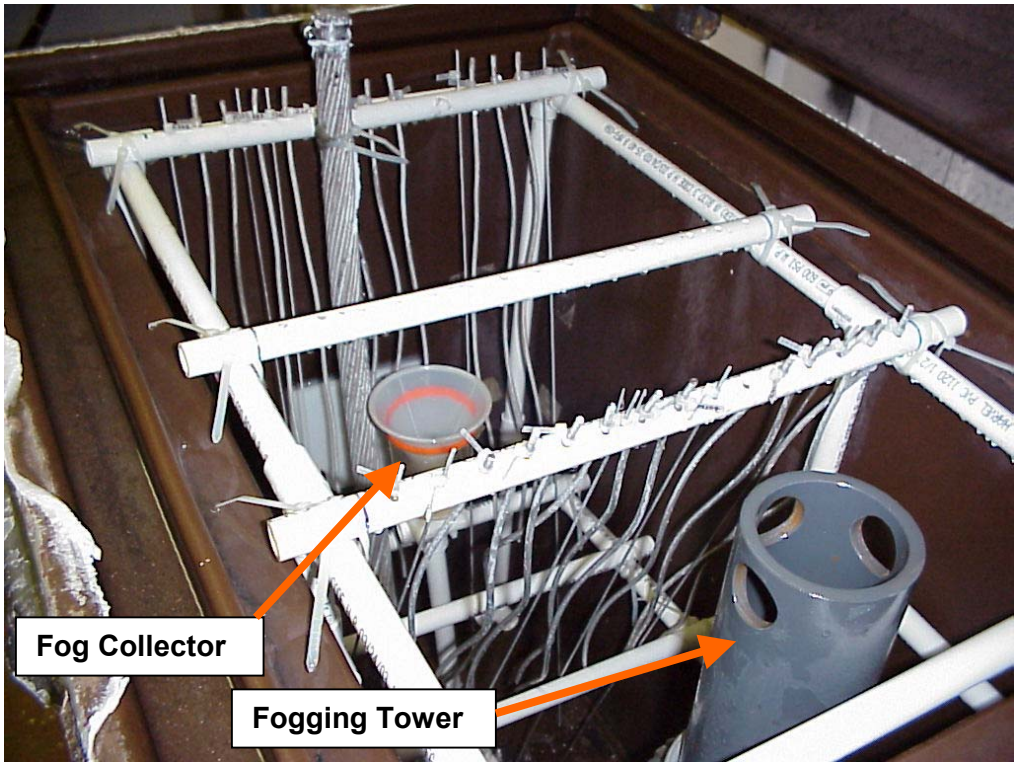

Figure 2 Samples in Salt Spray Chamber

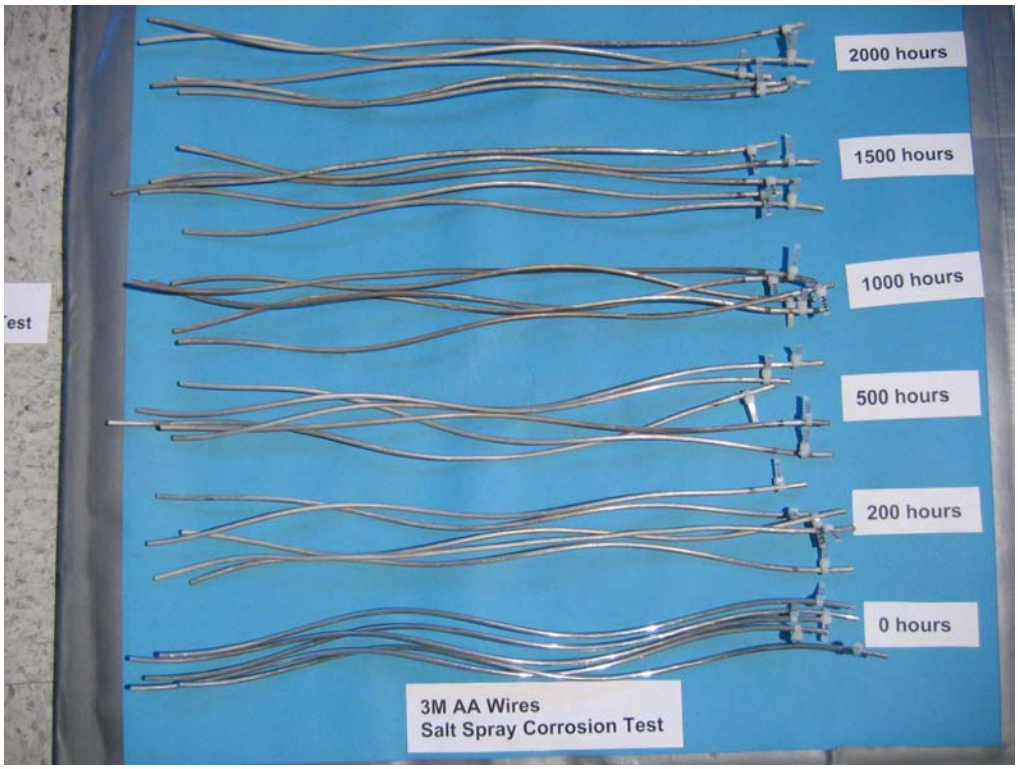

Figure 3 3M ACCR 795 Individual AA Wires Samples AFTER Salt Spray Corrosion Test

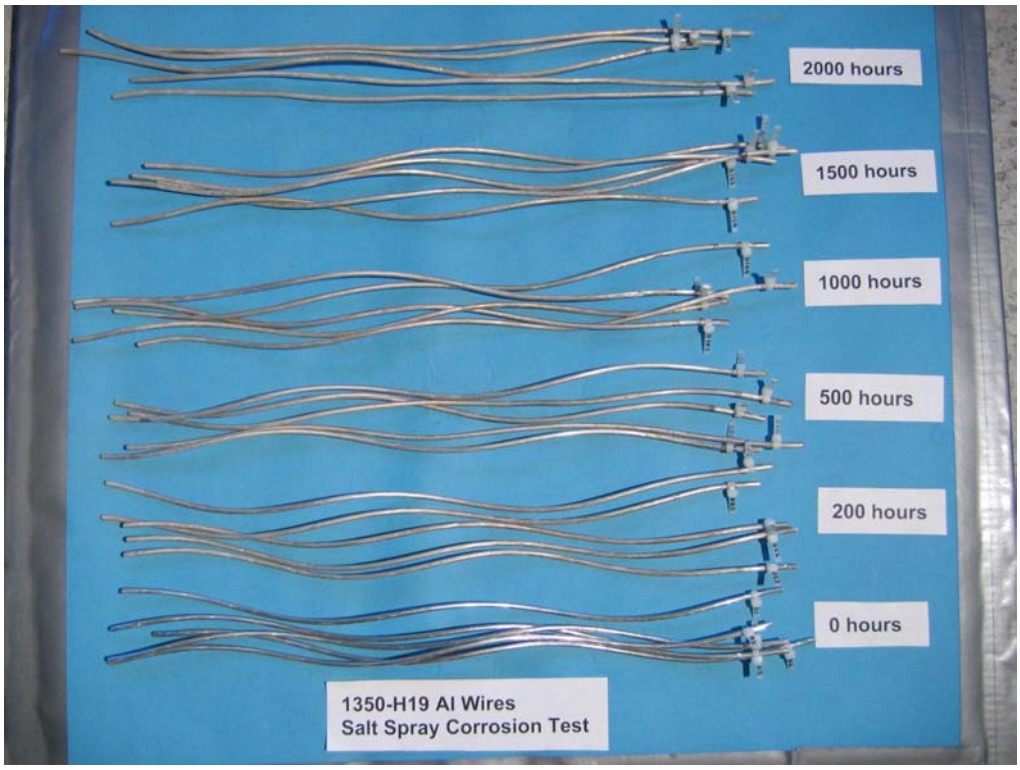

Figure 4 Drake ACSR 1350-H19 AA Wires Samples AFTER Salt Spray Corrosion Test

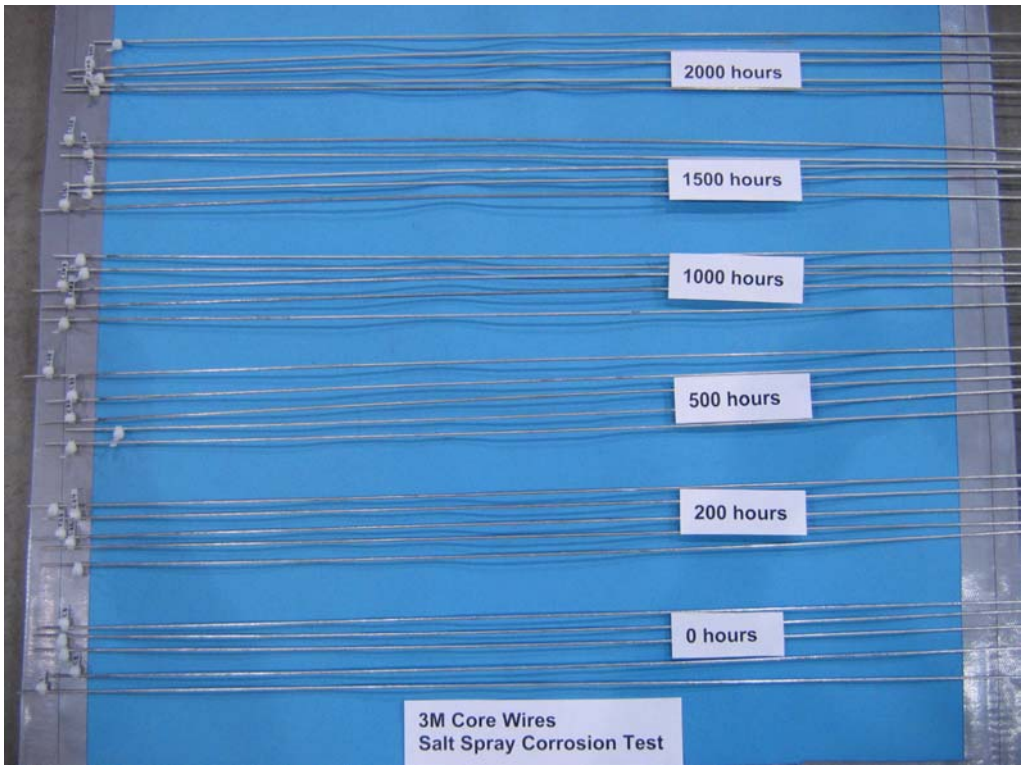

Figure 5 3M 795 ACCR Individual Composite Core Wires Samples AFTER Salt Spray Corrosion Test

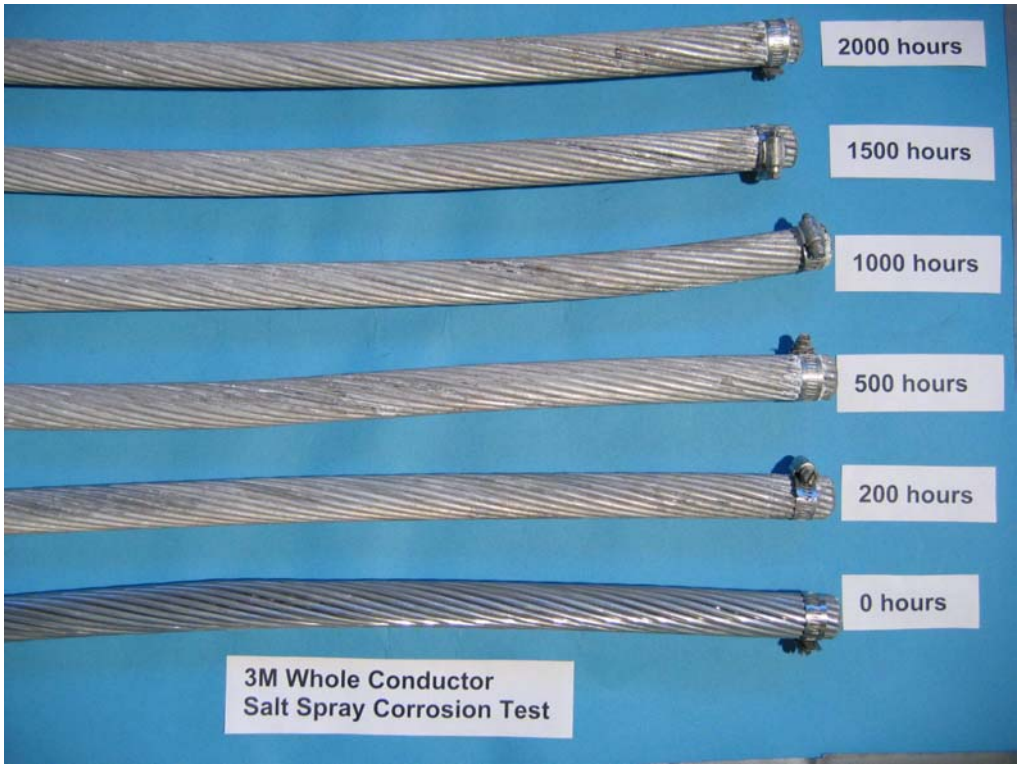

Figure 6 3M ACCR 795 Whole Conductor Samples AFTER Salt Spray Corrosion Test

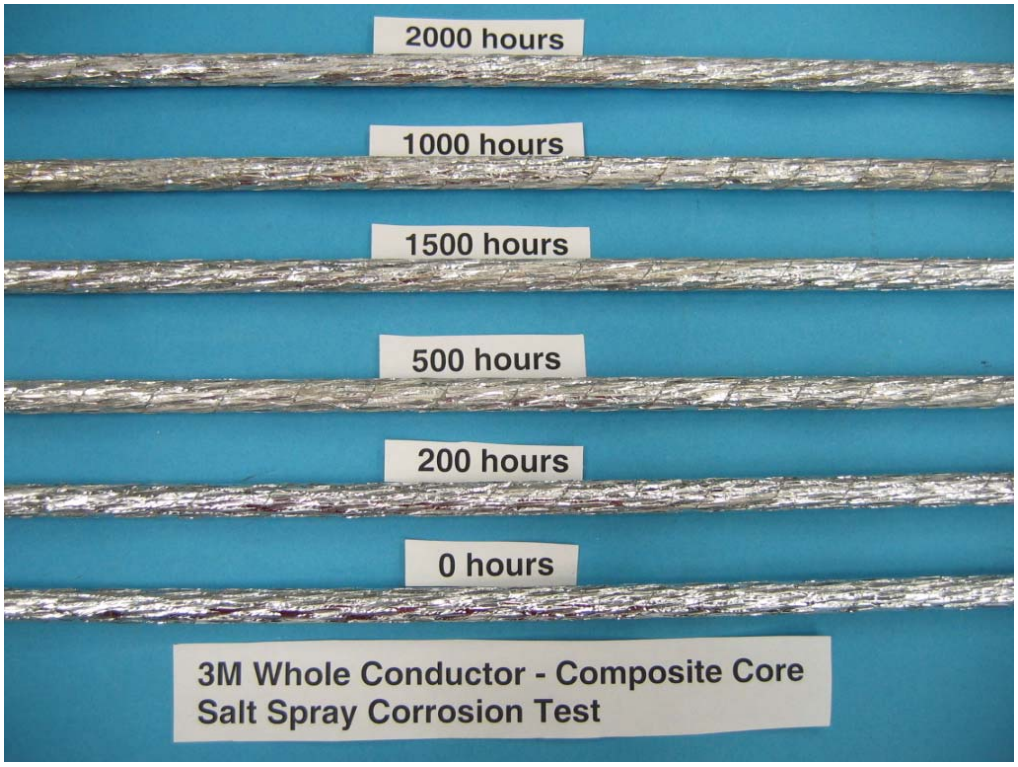

Figure 7 3M ACCR 795 Composite Core from Whole Conductor Samples AFTER Salt Spray Corrosion Test

Figure 8a 3M Outer Layer – 0 hours AFTER Salt Corrosion Test

Figure 8b 3M Outer Layer – 200 hours AFTER Salt Corrosion Test

Figure 8c 3M Outer Layer – 500 hours AFTER Salt Corrosion Test

Figure 8d 3M Outer Layer – 1000 hours AFTER Salt Corrosion Test

Figure 8e: 3M Outer Layer – 1500 hours AFTER Salt Corrosion Test

Figure 8f: 3M Outer Layer – 2000 hours AFTER Salt Corrosion Test

Figure 9a 3M 2nd Layer – 0 hours AFTER Salt Corrosion Test

Figure 9b 3M 2nd Layer – 200 hours AFTER Salt Corrosion Test

Figure 9c 3M 2nd Layer – 500 hours AFTER Salt Corrosion Test

Figure 9d 3M 2nd Layer – 1000 hours AFTER Salt Corrosion Test

Figure 9e 3M 2nd Layer – 1500 hours AFTER Salt Corrosion Test

Figure 9f 3M 2nd Layer – 2000 hours AFTER Salt Corrosion Test

APPENDIX A

DATA SHEET FOR 3M 795 KCMIL ACCR COMPOSITE CONDUCTOR

3M Composite Conductor Specification

Conductor Physical Properties				
Designation		477-T16	795-T16	1272-T13
Stranding		26/7	26/19	54/19
kcmils	kcmil	477	795	1,272
Diameter				
indiv Core	in	0.105	0.082	0.092
indiv Al	in	0.135	0.175	0.153
Core	in	0.32	0.41	0.46
Total Diameter	in	0.86	1.11	1.38
Area				
Al	in^2	0.374	0.624	0.999
Total Area	in^2	0.435	0.724	1.126
Weight	lbs/linear ft	0.539	0.896	1.392
Breaking Load				
Core	lbs	11,632	18,556	23,622
Aluminum	lbs	7,844	12,578	20,055
Complete Cable	000's lbs	19,476	31,134	43,677
Modulus				
Core	msi	31.4	31.4	31.4
Aluminum	msi	8.0	7.4	8.0
Complete Cable	msi	11.2	10.7	10.6
Thermal Elongation				
Core	10^-6/F	3.5	3.5	3.5
Aluminum	10^-6/F	12.8	12.8	12.8
Complete Cable	10^-6/F	9.2	9.2	9.2
Heat Capacity				
Core	W-sec/ft-C	13	22	28
Aluminum	W-sec/ft-C	194	324	520

Conductor Electrical Properties				
Resistance				
DC @ 20C	ohms/mile	0.1832	0.1100	0.0700
AC @ 25C	ohms/mile	0.1875	0.1126	0.0717
AC @ 50C	ohms/mile	0.2061	0.1237	0.0787
AC @ 75C	ohms/mile	0.2247	0.1349	0.0858
Geometric Mean Radius	ft	0.0290	0.0375	0.0466
Reactance (1 ft Spacing, 60hz)				
Inductive Xa	ohms/mile	0.4296	0.3986	0.3720
Capacitive X'a	ohms/mile	0.0988	0.0912	0.0847

ISO-9001
Form: QF11-1
Rev 0, 97-10

APPENDIX B
INSTRUMENT SHEET
Salt Spray Corrosion Test on 3M 795 KCMIL ACCR Composite Conductor

Test Description: Cable QualificationTests
Project Number: K-422113
Test Start Date: July 16, 2004
Test Finish Date: October 8, 2004

TEST DESCRIPTION	EQUIPMENT DESCRIPTION	MAKE	MODEL	ASSET # or SERIAL #	ACCURACY CLAIMED	CALIBRATION DATE	CALIBRATION DUE DATE	TEST USE
Salt Spray Corrosion Test	Digital Scale	Mettler Toledo	PB153-S	1120133358	±0.001	July 8, 2003	July 8, 2005	Wire Weight
	Balance Scale	Mettler Toledo	SB32000	10000640-0	±5 grams	May 3, 2004	May 3, 2005	Cable Weight
	Digital Scale	Mettler Toledo	PC 4400	13875-0	±10 gram	March 1, 2004	March 1, 2005	Salt Weight
	Digital Meter	Fluke	52	KIN-00033				
	Thermocouple	Omega	Type K	KIN-000136				
	Thermocouple	Omega	Type K	KIN-000137	±1 degree	February 19, 2004	February 19, 2005	Exposure Zone & Tower Air Temperature

DISTRIBUTION

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