MKW POWER SYSTEMS, Inc.

AUTHORIZED DISTRIBUTOR

October 8, 1991

Mr. Thomas Murley
Director -- Office of Nuclear Reactor Regulation
11555 Rockville Pike
Rockville, Maryland 20852

Subject: Report 10CFR21-0057

Dear Sir:

Attached is Report No.: 10CFR21-0057 and a letter which was sent to TVA. The report describes the defect and gives our recommendation for corrective action. This defect report applies only to TVA-WATTS BAR.

If additional information is required please contact Vann Mitchell at (919) 977-2729, ext. 404.

Sincerely,

MKW POWER SYSTEMS, INC.,

M. Vann Mitchell

M. Vann Mitchell
Quality Manager

MVM/psp

Enclosure: Report 10CFR21-0057 and TVA letter of 10-07-91

QA-VO-91-126

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Post Office Box 1928 • Rocky Mount, North Carolina 27802-1928 • Phone: (919) 977-2720
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October 7, 1991

Terry Overlid - LP 5N 152
Manager, Nuclear Experience Review (NER)
Tennessee Valley Authority
1101 Market Street
Chattanooga, TN 37402-2801

Reference: Report No. 10CFR21-0057
High Voltage Power Cable, Voltage Regulator Power Transformer (EPT) and Metering and Relaying Potential Transformers (PT1-PT5)

TVA-Watts Bar Diesel Generators
Contract No. 74C63-83090

Dear Sir:

The above report is enclosed with our recommendation for corrective action of the defect found in the high voltage cables at TVA-Watts Bar Nuclear Plant.

Should you have any questions, please contact the writer or M. Vann Mitchell, MKW Quality Manager.

Yours very truly,

MKW POWER SYSTEMS, INC.

Donald D. Galeazzi/jb

Donald D. Galeazzi
Engineering Manager

DDG:jb

Enclosure

cc: Mike Brickey w/attachment
Allan Schildkraut w/attachment

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REPORT NO.: 10CFR21-0057
October 7, 1991

10CFR21 REPORTING OF DEFECTS AND NON-COMPLIANCE

COMPONENT: High Voltage Power Cable
Voltage Regulator Power Transformer (EPT) and Metering and Relaying Potential Transformers (PT1-PT5)

SYSTEM: Diesel-Generator Units at TVA-Watts Bar

CONCLUSION: Defect is Reportable to the NRC in Accordance with the Requirements of 10CFR21

PREPARED BY: Donald D. Galeazzi, Engineering Manager DATE 10/7/91

APPROVED BY: M. Vann Mitchell, Quality Manager DATE 10/7/91

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SUMMARY

Ebasco Services (working for TVA-Watts Bar) notified MKW of discrepancies with the cabling on the high voltage side of the Voltage Regulator Transformer (EPT) and Metering and Relaying Potential Transformers (PT1-PT5). On diesel-generator 2A-A, the cable on (PT1-PT5) was has two (2) identifications (5000 volt and 8000 volt). The actual insulation level of the cable is unclear and therefore a determination about the adequacy of the cable for this application cannot be made.

The cable on the EPT of diesel-generators 1A-A, 2A-A, 1B-B and 2B-B is lacking any identification and therefore determination about the adequacy of the cable for this application also cannot be made.

The cables in question should be replaced. We recommend #2 AWG, 15KV, non-shielded class C copper conductor. We recommend terminating the cable with T & B 54443 lugs and "pencil" the end of the insulation at the lug.

COMPONENT(S):

1) Power cable on the high voltage (6900V) side of metering and relaying potential transformer (PT1-PT-5) located in the generator neutral cubicle.

2) Power cable in the high voltage (6900V) side of voltage regulator power transformer (EPT) located in the generator excitation cubicle.

CUSTOMERS AFFECTED:

The above concern can only be identified with the equipment at TVA-Watts Bar (supplied by MK/Power Systems under contract No. 74C63-83090); therefore, only TVA-Watts Bar will be notified.

DEFECT:

1) PT1-PT5 high voltage cable in generator neutral cubicle (DG 1A-A):

This cable has two (2) voltage ratings stamped on the outside jacket, 5000 volt and 8000 volt. Inspection by TVA site personnel has verified that the actual identification is: "Cresent 8 5000 volt FAA-L-824B 8000 volt power cable". The manufacturer of the cable is unknown. The identification FAA-L-824B indicates that the cable is 5KV airport lighting cable. We are not able to substantiate the 8000 volt identification. This cable is being used on a 6900 volt bus; therefore, 5KV cable is not suitable.

2) EPT high voltage cable in generator excitation cubicle:

During inspection of the high voltage cables, it was noted that the EPT cables did not have any identification stamped on them. Due to lack of identification, the size and insulation level of the cable cannot be verified.

CORRECTIVE ACTION:

We recommend replacing the EPT and PT1-PT5 high voltage cable with #2 AWG, 15KV, non-shielded class C copper conductor. We recommend terminating the cable with T & B 54443 lugs and "pencil" the end of the insulation at the lug.

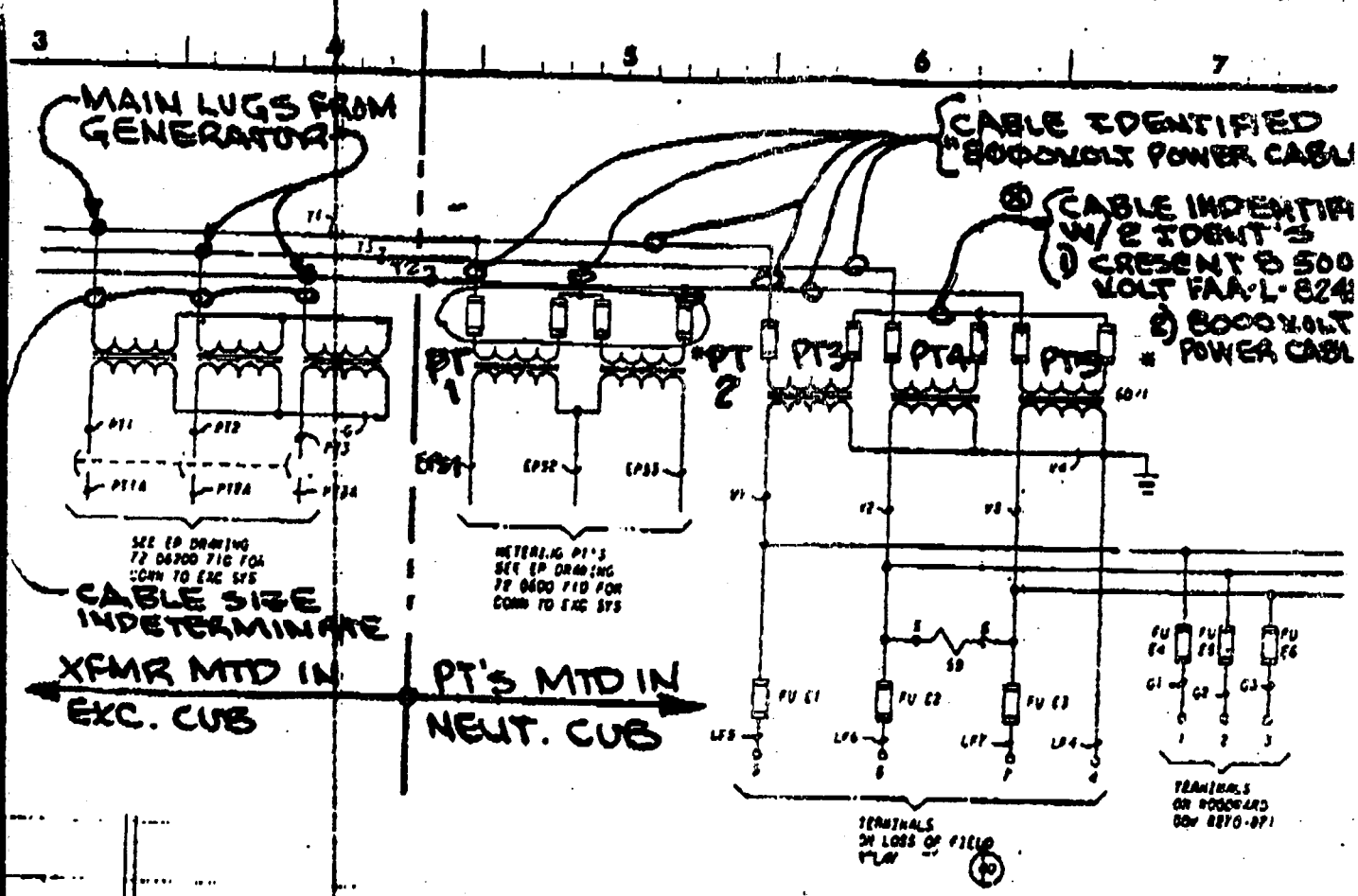
ATTACHMENTS

SUBJECT: PT CABLES IN EMERG. D.G 2A-A

REF: TVA CONTRACT # 74C63-83090

MKW JOB # D379 FOR D.G. 1A-A, 2A-A, 1B-B & 2B-B.

MKW DWG: D379F11502 REV C



⊗ THIS IS A JUDGEMENT BASED ON OBSERVATION OF EQUIPMENT & THE LACK OF A WIR. DIAG OR WIRE NO.

D P Dayton 10/3/91

600/3KV/5KV Airport Lighting Cable
Single Copper Conductor

60°C 600 Volt
90°C 3,000 Volt
90°C 5,000 Volt

SECTION 3Z

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APPLICATIONS

For use in underground installations for airport lighting.

SPECIFICATIONS

1. Completed cables conform to Federal Aviation Agency (FAA) Specification L-284, latest edition, or MIL-C-38359, as applicable.
2. Type A, 600 Volt: Annealed coated copper conductor, Class B stranded; 60°C rubber insulation; neoprene jacket overall; surface printed L-824-A plus conductor size, voltage and manufacturer's name.
3. Type B, 3000 and 5000 Volt: Annealed coated copper conductor, Class C stranded; 90°C ozone-resistant rubber insulation; heavy-duty neoprene jacket overall; surface printed L-284-B plus conductor size, voltage and manufacturer's name.
4. Type C 5000 Volt: Annealed coated copper conductor, Class C stranded; 90°C XLPE insulation; surface printed L-824-C plus conductor size, voltage and manufacturer's name.
5. MIL-C-38359, 3000 and 5000 Volt: Annealed coated copper conductor, Class C stranded; insulation and jacket of cross-linked polyethylene (XLP) rated 90°C; surface printed for identification.

SINGLE CONDUCTOR STRANDED

ANIXTER CATALOG NUMBER	AWG SIZE	NO. OF STRDS	INSUL WALL	JKT. WALL	O.D. Inches	WEIGHT Lbs/M Ft
L-824-A, 60°C, 600 VOLT						
3Z-0806A	#8	7	4/64	3/64	.39	117
L-824-B, 90°C, 3000 VOLT						
3Z-0803B	#8	7	7/64	3/64	.48	162
L-824-B, 90°C, 5000 VOLT						
3Z-0805B	#8	7	10/64	4/64	.62	235
L-824-C-90°C, 5000 VOLT						
3Z-0805C	#8	7	.110	—	.38	95
3Z-0605C	#6	7	.110	—	.42	125
MIL-C-38359, 90°C, 3000 VOLT						
3Z-0803M	#8	7	.075"	—	.32	100
MIL-C-38359, 90°C, 5000 VOLT						
3Z-0805M	#8	7	.110"	—	.39	145