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BOUCHEY,G.D. Washington Public Power Supply System
RECIP.NAME RECIPIENT AFFILIATION
EISENHUT,D.G. Division of Licensing

SUBJECT: Forwards test procedure for Weidmuller/Supply Sys joint terminal block test program to be conducted at Wyle Labs. Start date is targeted for 811016.

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	GEOSCIENCES	28	2	2	HUM FACT ENG	40	1	1
	HYD/GEO BR	30	2	2	I&C SYS BR	16	1	1
	I&E	06	3	3	IE/EPDB	35	1	1
	IE/EPLB	36	3	3	LIC GUID BR	33	1	1
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Mr. D. G. Eisenhut, Director
Division of Licensing
Office of Nuclear Reactor Regulation
U. S. Nuclear Regulatory Commission
Washington, D.C. 20555

Dear Mr. Eisenhut:

Subject: Weidmuller/Supply System Joint
Terminal Block Test Program

This test program will be conducted at Wyle Laboratories , Norco, California facility in the near future. A meeting was held at Wyle September 17, between Wyle, Weidmuller and the Supply System to discuss the technical aspects of the test program and resolve any differences that might arise and also to assign the various responsibilities. Wyle has provided the Supply System with a schedule as to when the testing will start and end. The start date is targeted for Friday, October 16, with test completion expected Wednesday, November 25. Test setup and checkout will start Thursday, October 15.

A test procedure has been included as an attachment to this letter for your consideration. The test samples have been previously aged and tested by Weidmuller. Our test program is an extension of the post-LOCA conditions one might expect inside containment at our Nuclear Project No. 2 (WNP-2).

The cognizant contact for further information concerning this program is Mr. J. E. Rhoads. Mr. Rhoads may be reached at (509) 372-5271.

Please address all formal communications to my attention.

Very truly yours,

G. D. Bouchey

G. D. Bouchey, Director
Nuclear Safety

GDB:CJZ:fawp

Attachment

cc: A. Bennett, NRC, Mail Stop 359 E/W

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TEST PROCEDUCE FOR POST-LOCA QUALIFICATION TEST PROGRAM

The test specimens consist of five different assemblies of Weidmuller Terminations, Inc. Rail Mounted Modular Terminal Blocks which have previously completed the Qualification Test Program Sequence detailed in Franklin Research Center Report F-C 5205-3. The five specimens are each housed in a Hoffman Type NF NEMA 4 Enclosure, Catalog No. A-806 NF which has previously been exposed to the LOCA/MLSB Simulation in Test Program F-C 5205-3.

Specimens are identified as follows:

*FRC Reference No.	Type	Catalog No.	Remarks
5205-A	SAK10	6943.0	No intermediate barriers
5205-B	SAK6N	6942.0	No intermediate barriers
5205-F	SAK6N	6942.0	With intermediate barriers
5205-G	SAK10	6943.0	With intermediate barriers
5205-0	SAK4	6941.0	With intermediate barriers

*These FRC references are stamped into the mounting rail of the terminal block assemblies.

Test Arrangement

The enclosures, complete with terminal block specimens, will be installed inside the test vessel on a suitable framework such that the major axis of the enclosures is horizontal with the wire entries on the underside. (Generally as illustrated on the enclosed Figure 1.)

The teminal blocks are to be wired using GE Vulkene XLPE #12 AWG 7 strand wire with alternate poles in series. (Generally as indicated in Figure 7 of the Report F-C 5205-3, except that each specimen shall have an independent potential and current source.) With this arrangement, each terminal block will be energized with a test current of 20 Amps 60 Hz and adjacent poles will be at 600 V AC potential.

The connections from the terminal blocks shall be routed through the NEMA 4 Enclosures through existing Crouse Hinds Type CGB 192 Compression Fittings and the wires shall pass from the terminal block specimens through the wall of the test vessel to the supply source and monitoring equipment in one continuous length (without the use of intermedite butt splices). Means shall be provided to monitor leakage currents on a continuous basis.

Means shall be provided to disconnect individual specimens from the supply source in the event of excessive leakage currents occurring in that specimen. Means shall be provided to ensure continuity of the grounding between the mounting rail of the terminal blocks and the ground termination external to the test vessel.

Test Procedure for Post-LOCA Qualification Test Program -(Cont'd)

The lids of the NEMA 4 Enclosures are to be fitted and secured.

Test Procedure

Contact resistance mesurements will be made from a termination or base conductor to terminal strip bar for one (1) of each pair of opposite terminals. The contact resistance measurement will be made prior to installation of test items in test chamber.

The wired specimens will be subjected to Insulation Resistance measurements at 500 V DC. The measurements shall be made on each specimen, a) between adjacent terminal blocks, and b) between all terminal blocks and ground.

All supply sources, measuring instruments and monitoring equipment is to be calibrated.

The specimens are to be energized and the test vessel subjected to the specified environmental conditions:

Temperature: 230°F Steam
Pressure: 30 Psig
Spray conditions to be demineralized water activated intermittently.
Duration of the test: 40 days (960 hours)

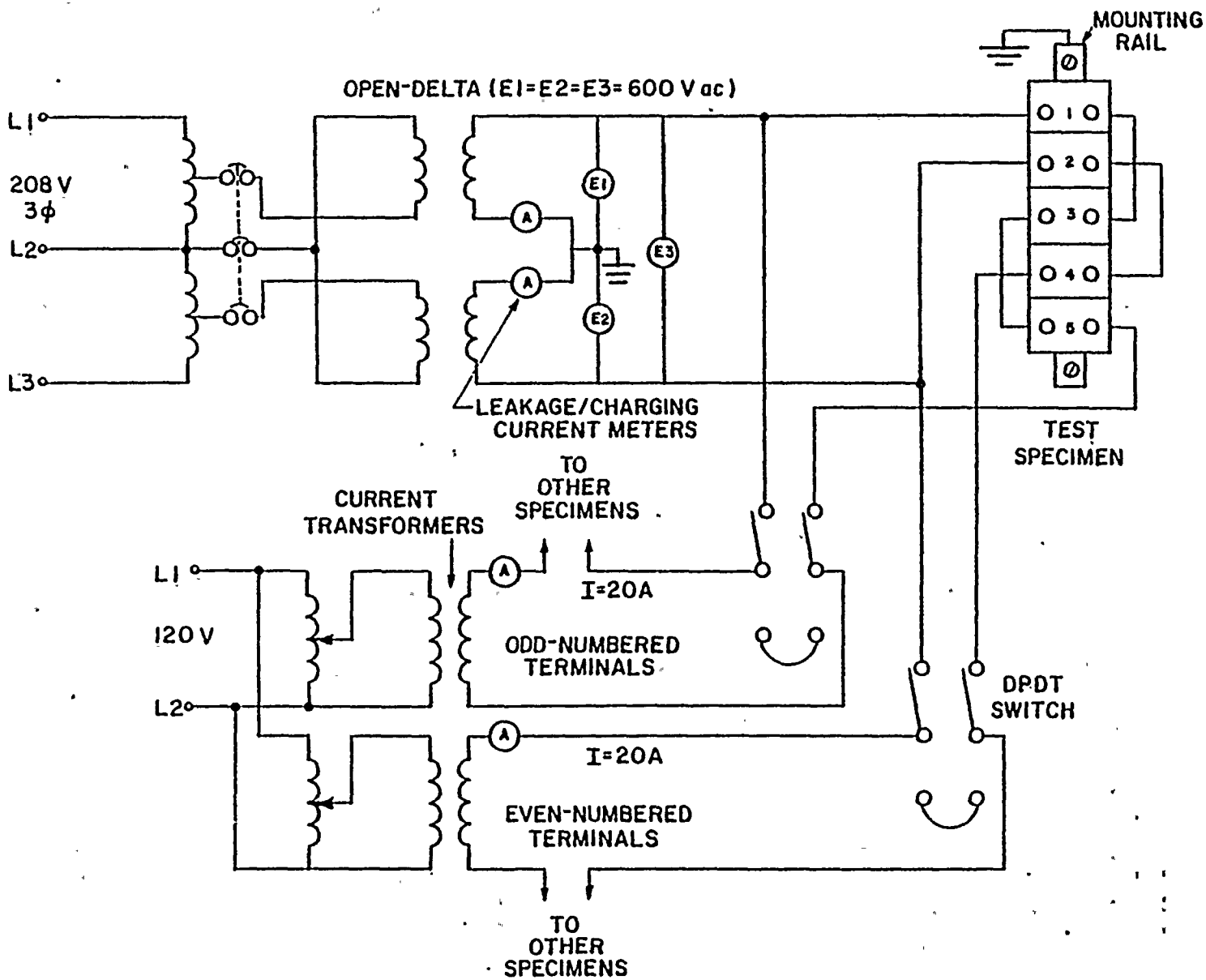
The direction of the Steam and Chemical Spray shall be agreed.

Throughout the duration of the program, the leakage currents shall be monitored and in the event of excessive leakage currents occurring on an individual specimen, this shall be disconnected from its energizing source. (Excessive leakage current is 1 Amp or othe agreed value dependent on the available power source.)

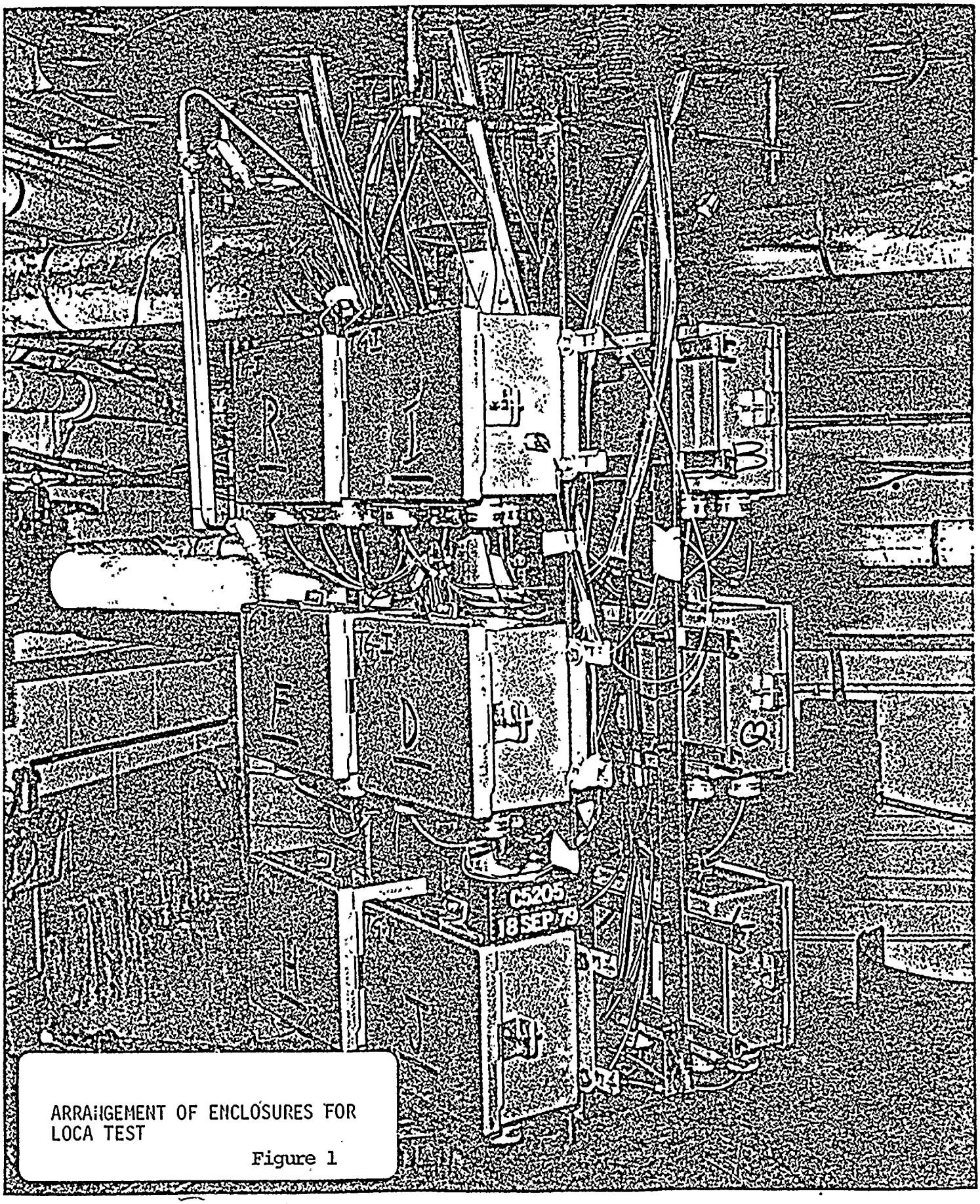
On completion of the forty-day environmental sequence, specimens shall be subjected to Insulation Resistance readings at 500 V DC. The Insulation Resistance shall again be measured 24 hours after the test vessel is opened up.

Contact resistance measurements will be performed as indicated above after the test specimens are removed from the chamber.

Some splice connections are going to be made inside the NEMA-4 enclosure to address the moisture leakage problem outlined in IE Circular 79-05.

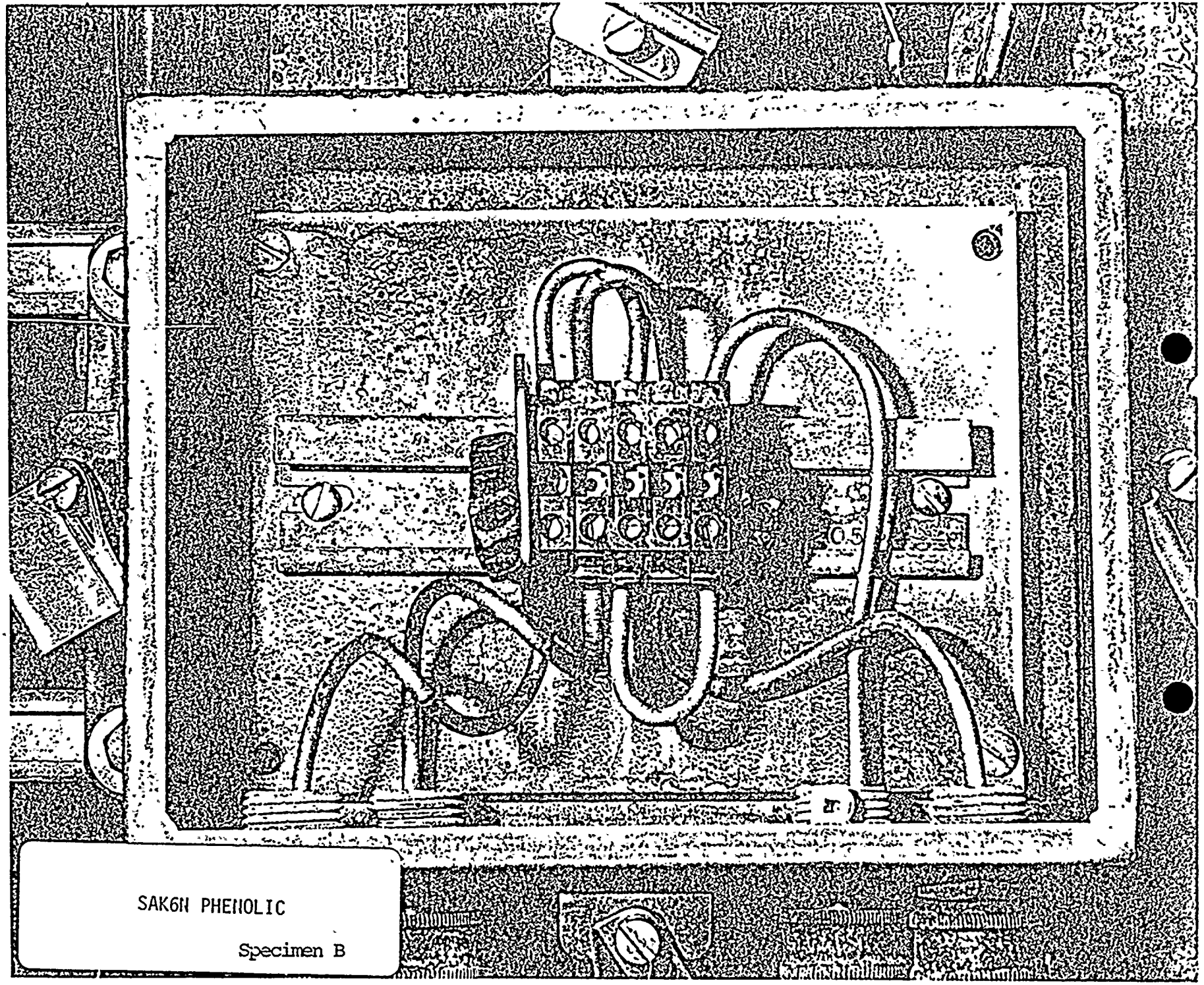


Schematic of Electrical Energizing Circuits



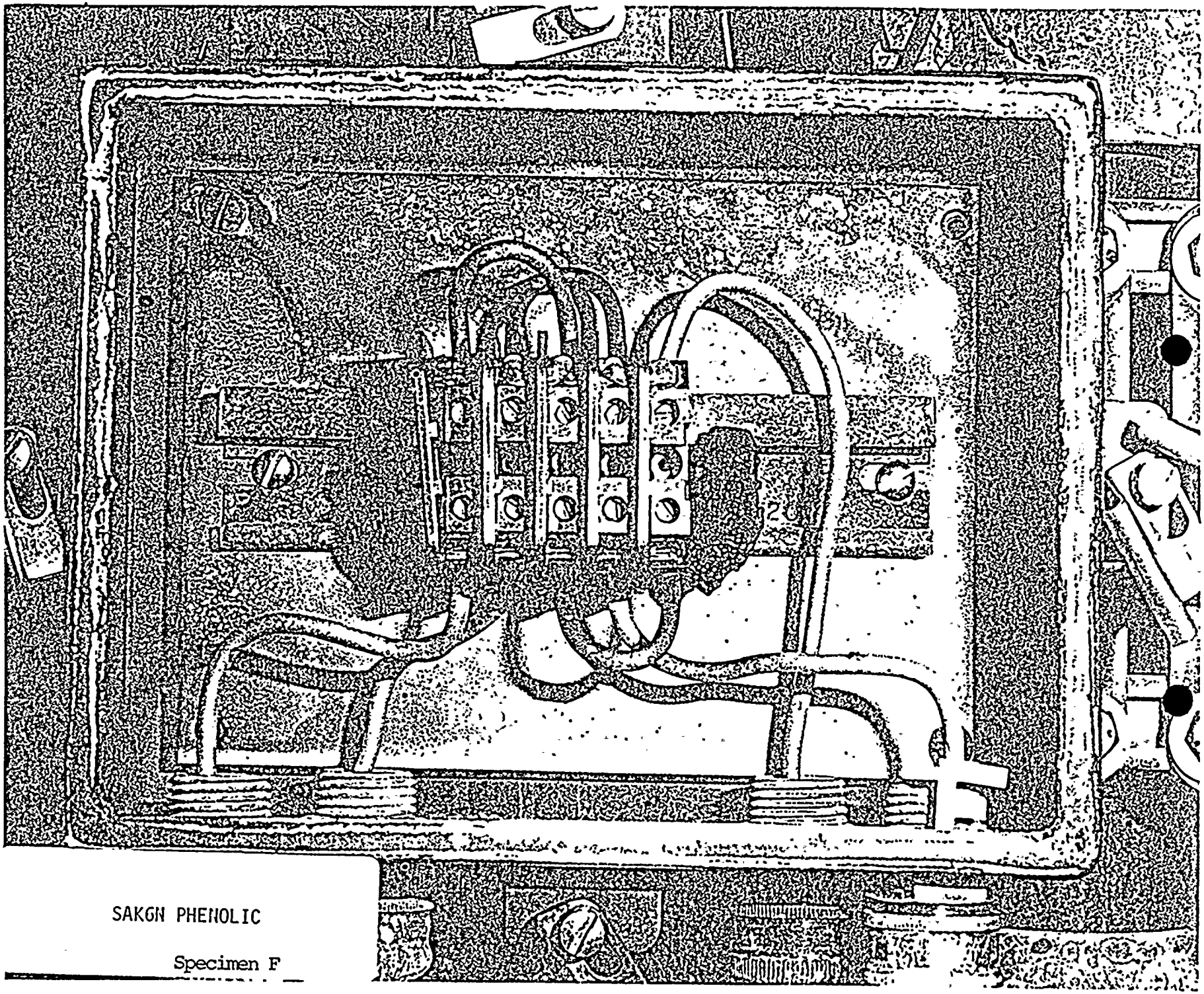
ARRANGEMENT OF ENCLOSURES FOR LOCA TEST

Figure 1



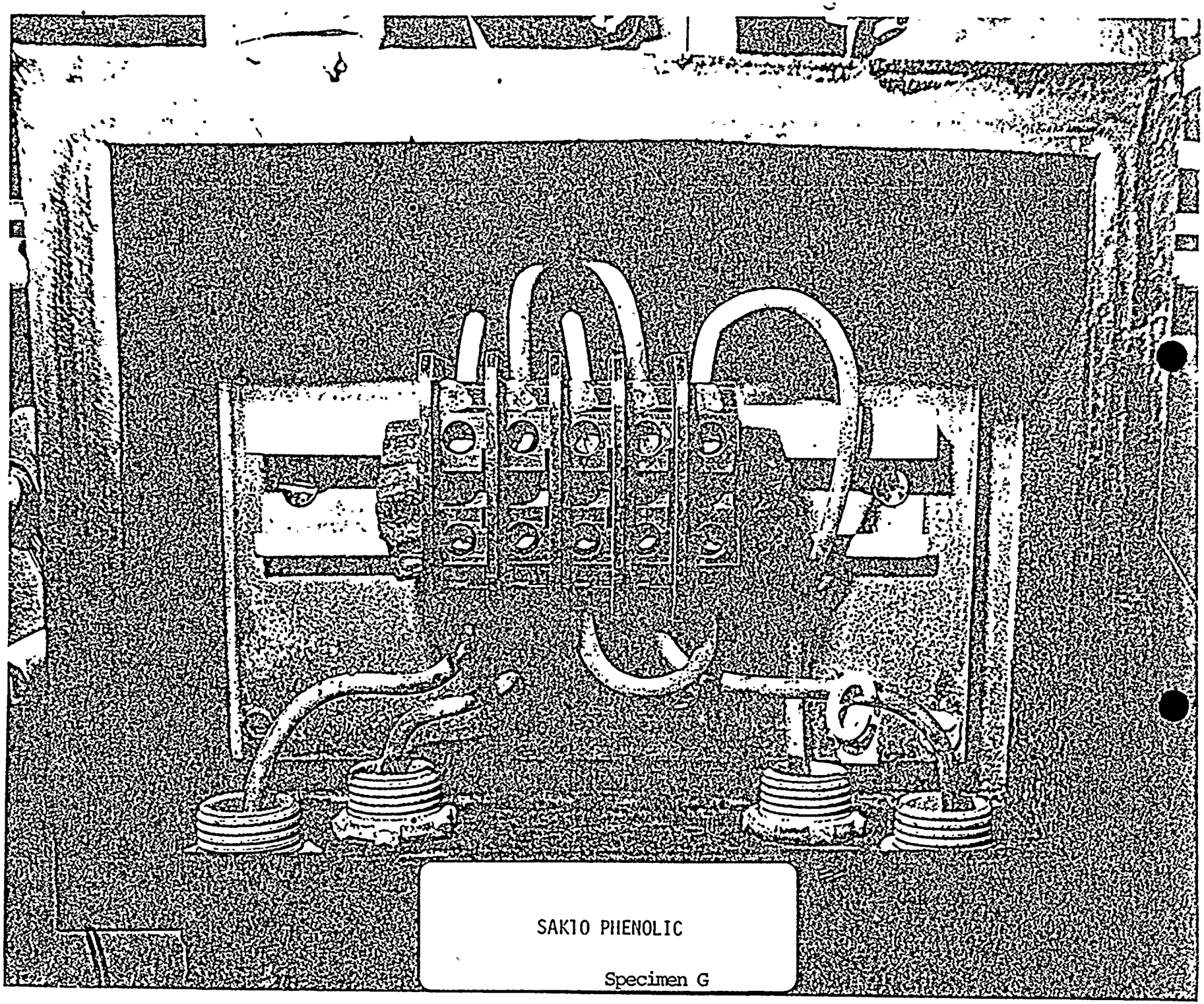
SAK6N PHENOLIC

Specimen B



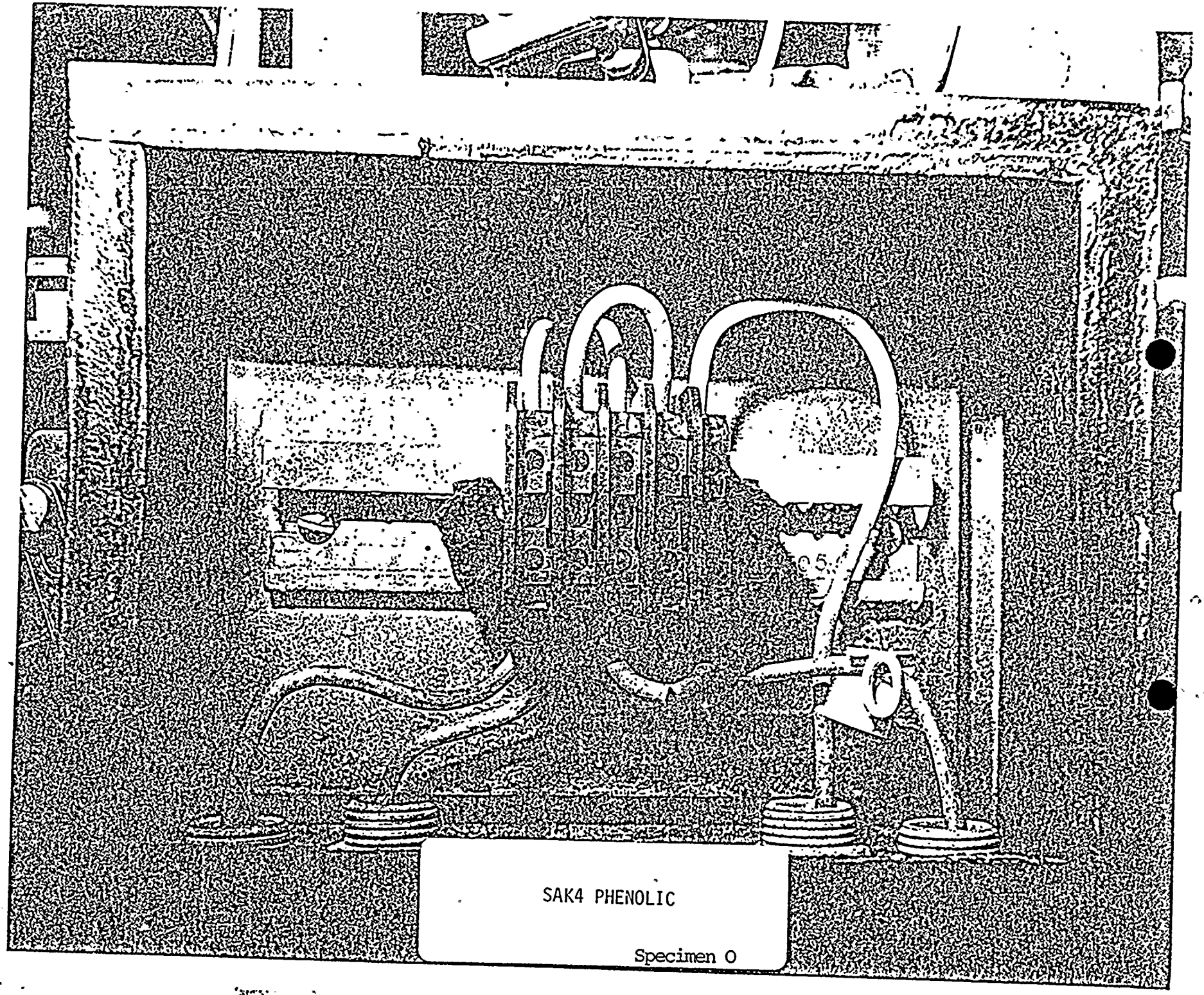
SAKON PHENOLIC

Specimen F



SAKIO PHENOLIC

Specimen G



SAK4 PHENOLIC

Specimen O