

Field Testing Services Division



On-site Testing Service for HV & EHV Underground Transmission Cable

Phenix Technologies, a leader in manufacturing High Voltage, High Current, High Power test equipment and components is currently providing on-site AC testing and commissioning service for High Voltage and Extra High Voltage underground transmission cable. Our state-of-the-art trailer-mounted Variable Voltage & Frequency Resonance Test Systems are capable of supplying up to 225 KV at 16 MVA, 17 A of on-site testing power.

Underground transmission cable is a highly capacitive load where standard hipot systems are not capable of testing such loads in the field. Phenix is utilizing trailer-mounted variable frequency resonance test systems to perform on-site AC testing on newly installed or in-service underground transmission cable. By varying testing frequency (20 to 300 Hz) testing power requirements is significantly reduced, thus making it feasible to perform transmission cable field testing using our mobile system.

Phenix's field testing capabilities are designed to meet the latest transmission cable testing standards IEC-60840 for HV and IEC-62067 for extra HV cable class.

Our 16 MVA variable frequency mobile test system is capable of testing various transmission cable sizes ranging from 45 KV up to 345 KV class.

Our system is capable of testing 21 Km of a typical 138 KV (2000 kcmil) cable class.


Our primary mission is to provide our customers with underground transmission cable testing service in a timely and accurate manner at competitive prices.


Safety is one of our main objectives, followed closely by industry standards compliance, coupled with state-of-the-art equipment, to provide a world class power cable testing service within North America.



Phenix's mobile 16 MVA system testing 138 KV superconductor transmission cable.

Power Cable Rated Voltage $U_{(KV)^{\circ}}$		$U_{0(KV)}$	Test Voltage (KV)			
			$1.2 U_0$	$1.4 U_0$	$1.5 U_0$	$1.7 U_0$
HV CABLE IEC 60840	45 - 47	26	31	36	39	44
	60 - 69	36	43	50	54	61
	110 - 115	64	77	90	96	109
	132 - 138	76	91	106	114	129
	150 - 161	87	104	122	131	148
EHV CABLE IEC 62067	220 - 230	127	152	178	191	216
	275 - 287	160	192	224	240	272
	330 - 345	190	228	266	285	323
	380 - 400	220	264	308	330	374
	500	290	348	406	435	493

 Using one 225 KV / 16 MVA Reactor

 A second reactor will be required to achieve test parameters.



Phenix Technologies will supply all required equipment and manpower to perform on-site cable testing.

- Mobile testing systems allow ease of transportation and quick set-up at the job site.
- Constant 16 MVA testing power at 225 KV & 125 KV taps to test longer cable feeders.
- Capacitive Divider platform already assembled on trailer, thus expediting setup time.
- Programmable test parameters to meet customer's voltage and duration requirements.
- Real time data acquisition of all test parameters.
- Certified test reports including voltage, current, duration, dwell time, and frequency.
- Optional Partial Discharge measurement using our own vendor or customer's preferred vendor.



Phenix's mobile 16 MVA system setup to test 138 KV superconductor transmission cable with optional partial discharge measurement.

Benefits of testing underground transmission cable after installation or repair can identify the following:

- Damage during transportation to job site.
- Faulty joints and/or terminations.
- Damage during installation.
- Damage due to improper repair.
- Damage due to overload.
- Damage due to aging.
- Damage due to environment.
- Transmission cable upgrade.
- Verify transmission cable integrity and establish a condition reference.



Optional Partial Discharge measurement setup.



Automatic PLC data acquisition and controls

Our professional staff is eager to work closely with our customers to develop an optimized and cost effective power cable testing schedule and criteria that meet industry & utility standards.



Dielectric testing 138 KV class transmission cable in Long Island, NY.



Mobile 16 MVA / 225 KV High Voltage trailer

Typical Onsite test report is automatically generated upon completion of job.

Phenix Technologies
Field Testing Services Division
75 Speicher Drive, Accident, MD. 21520
(301) 746-8118

Company: NEXANS Test Date: 2/26/2013
Feeder ID: 600M 3 PHASE 138KV Test Time: 6:42:03 PM
Feeder Description: SUPERCONDUCTOR LPA
Test Engineer: HASSAN YOUNES
Test Result: Test Complete Failure Voltage: n/a

Step	Voltage	Current	Dwell	Duration	Hz	ED
	0 kV	0 A		00:00:00	0	0
3	70.2 kV	10.4 A	00:05:00	00:07:01	61.5	0
5	113.9 kV	15.6 A	01:00:00	00:14:02	61.5	0
5	114.1 kV	15.6 A	01:00:00	00:21:03	61.5	0
5	114.1 kV	15.6 A	01:00:00	00:28:04	61.5	0
5	114 kV	15.6 A	01:00:00	00:35:05	61.5	0
5	113.9 kV	15.6 A	01:00:00	00:42:06	61.5	0
5	114 kV	15.6 A	01:00:00	00:49:07	61.5	0
5	113.9 kV	15.6 A	01:00:00	00:56:08	61.5	0
5	113.9 kV	15.6 A	01:00:00	01:03:09	61.5	0
5	113.7 kV	15.6 A	01:00:00	01:10:10	61.5	0
9	0.7 kV	0 A	00:02:00	01:14:34	61.5	0

Tested By: _____ Witnessed By: _____



PHENIX Technologies is committed to providing leadership, innovation, technology, quality, and service in all areas of our business.

Our 85,000 square-foot headquarters is a modern manufacturing facility. All aspects of electrical, mechanical, and software design and production are performed in this facility. Our engineers offer a unique blend of theoretical knowledge and practical experience. Our Service and Calibration Department assists customers during and after installation to ensure years of trouble free service.

We carry our commitment into the future as we proudly continue to provide the best in **high voltage, high current, high power test systems and components.**



PHENIX TECHNOLOGIES

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ISO
9001:2008
Compliant

