NORTH STAR
RESEARCH CORPORATION

June 22, 2000

CE Marking of North Star Research Corporation HV Probes

To Whom It May Concern

North Star Research Corporation retained Technology International to study the question of regulatory compliance of North Star High Voltage Probes in the European Community (Letter attached). Their assessment is that CE marking is inappropriate for a device for very high voltage measurement.

The probe does comply with the creepage distance requirements of EN-61010-1. Please note that the probe is not intended to be "handheld" during activation of the equipment.

Items can be supplied from our technical construction files as required. Each probe is supplied with a certificate of conformity.

Richard J. Adler

North Star Research Corporation
Richard J. Adler, President

Technology International Inc.
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For the Attention: Mr. Richard Adler
NORTH STAR RESEARCH
4421 McCleod N.E.
Ste. A,
Albuquerque,
NM 87109.

February 2, 1998

Dear Richard,

Reference to our telephone conversation of last week, regarding European certification of your High Voltage Probes.

The high voltage probes are outside the scope of the **LVD** (***voltage range: 50Vac or 75Vdc to 1000Vac/1500Vdc***) and, therefore, the applicable European Directive for safety is the General Product Safety Directive. General Product Safety Directive is not part of the CE Marking Directive and you do not need a DoC.

Although, it would be sensible to cover Safety in the User Manual by repeating the Warning Labels of residual risks on the product and providing an explanation with safety precautions to be taken. Conformity with EN 61010-1 would cover the requirement to be safe in the General Product Safety Directive.

We recommend that the prudent manufacturer would record his assessment of conformity in a technical record similar to a Technical File and we would be very happy to assist you, if required.

Yours sincerely,

Ian Weatherilt
European Regulatory Consultant
Technology International, Inc.

4 The values given in annex D are minimum values. The manufacturer should make sure that the values will be maintained, taking account of production tolerances and other foreseeable influences.

5 Relative phasing between circuits or parts of circuits (e.g. transformers) may affect the actual working voltage between them.

D.2.2 *Application of tables D.1 to D.12*

Interpolation of CREEPAGE DISTANCE is permissible. Interpolation of CLEARANCE is only permissible for a circuit or part which has no direct connection to the mains supply, but is powered from a transformer, converter or equivalent isolation device within the equipment (see also the notes to tables D.13, D.15 and D.16). For CLEARANCES in the primaries of switching power supplies, see clause D.4.

CREEPAGE DISTANCE shall always be at least as large as the value specified for CLEARANCE.

For CREEPAGE DISTANCE between two circuits, the actual working voltage which stresses the insulation between the circuits shall be used.

For test voltage and CLEARANCE between two circuits, the values for each circuit are obtained separately from the appropriate table, using the working voltage of each circuit. The higher values of test voltage and CLEARANCE shall then be used.

D.3 Determination of CLEARANCE for working voltage above 1 000 V a.c. r.m.s. or d.c.

D.3.1 *CLEARANCE for BASIC INSULATION or SUPPLEMENTARY INSULATION*

a) For working voltages above 1 000 V a.c. r.m.s. or d.c., where neither overvoltage control nor homogeneous construction is employed within the equipment, the CLEARANCE of the table D.13 applies.

CLEARANCE values in table D.13 are for high-voltage secondary circuits where the primary circuits are low-voltage systems as described in IEC 664. The values for type 1 circuits apply when the primary is INSTALLATION CATEGORY II (OVERVOLTAGE CATEGORY II) and the values for type 2 circuits apply when the primary is INSTALLATION CATEGORY III (OVERVOLTAGE CATEGORY III).

NOTE - See also D.11.1 for rationale.

b) Acceptable CLEARANCES alternative to those of table D.13 may be calculated according to clause D.5, if applicable.

Table D.13 - CLEARANCE for BASIC INSULATION or SUPPLEMENTARY INSULATION for circuits with working voltage above 1 000 V a.c. r.m.s. or d.c.

Working voltage (U_w) V		CLEARANCE mm	
a.c. r.m.s. sinusoidal	d.c., or peak if mixed or a.c. non-sinusoidal	Type 1 circuit	Type 2 circuit
1 060	1 000 to 1 500	3,71	5,82
1 250	1 770	4,25	6,42
1 600	2 260	5,31	7,55
2 000	2 830	6,60	8,86
2 500	3 540	8,17	10,5
3 200	4 530	10,4	12,9
4 000	5 660	13,0	15,4
5 000	7 070	16,2	18,6
6 300	8 910	20,4	22,9
8 000	11 300	26,1	28,7
10 000	14 100	33,0	35,7
12 500	17 700	42,0	44,7
16 000	22 600	55,0	57,9
20 000	28 300	70,5	73,5
25 000	35 400	90,6	93,6
32 000	45 200	120	123
40 000	56 600	154	158
50 000	70 700	199	203
63 000	89 100	260	264
NOTE - Linear interpolation is permitted.			

D.3.2 *CLEARANCE for REINFORCED INSULATION*

CLEARANCE for REINFORCED INSULATION shall be twice the CLEARANCE value determined for BASIC INSULATION or SUPPLEMENTARY INSULATION.

D.4 CLEARANCE in the primary of switching power supplies

The CLEARANCE between circuits connected to the mains and other circuits or ACCESSIBLE parts shall be not less than the CLEARANCE given in the appropriate table of D.1 to D.12. However, if a repetitive working voltage exists, whose peak value exceeds the appropriate phase-to-earth voltage of table D.14 (caused for example by voltage doubling), the CLEARANCE shall be calculated according to clause D.5.

CLEARANCES for circuits in which controlled overvoltage is employed (see D.5.1 and clause D.10) and which are between poles of the mains, can be calculated according to clause D.5.