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SERVICE BULLETIN

Supersedes: Nothing	1288	Form 220.11-NM1(SB1)
File with Form: 220.11-NM1		

CIRCULAR LETTER

FACTORY SERVICE

NO:

DATE: November 29, 1988

TO: Applied Systems Field Service

FROM: Applied Systems Service/J. Hilbert

SUBJECT: Multistage Centrifugal Compressors utilizing proximeter probes

We have determined that some applications of proximeter probes are susceptible to "ground loops". A "ground loop" can occur when two remote points of a circuit are connected to non-identical grounds. This can result in noise interference on the signals which may result in an artificially elevated vibration level at the monitor. Connections between system common and earth ground must occur at earth ground points of equal voltage potential. This is most easily accomplished by connecting the system common to earthground at a single point. This point should be at the instrument rack (or for intrinsically safe systems at the barrier "earth" ground bus bar.) In order to achieve a single point earth ground it is necessary to electrically isolate the metal portions of the coaxial connectors from ground. (Note: Ground could be a probe housing, electrical conduit, or the machine casing etc.)

We suggest that as the opportunity presents itself, every coaxial connector in the system be properly isolated. It is especially important to verify the isolation of any connectors located inside the compressor casings any time they are accessible. All coaxial connectors inside the compressors should be isolated (after servicing) whether they had/had not been done previously. Since the connectors located inside the compressor are subjected to the oil/refrigerant mist, we suggest that the connectors be wrapped with teflon tape then covered with shrinkable plastic tubing. Connectors outside the compressor can be electrically isolated by using only the shrinkable tubing. For most applications, shrinkable tubing with a nominal diameter of .300 inches should work best. Shrinkable tubing is available at most electronics supply outlets.

In addition to isolation of the coaxial connectors there are other areas within the vibration detection system that require consideration when addressing the prevention of "ground loops". York will address those areas when we are responsible for the total system. In those cases where there is a joint responsibility, the person(s) mounting/wiring the monitor is required to address the interconnecting wiring and perhaps the proximeter isolation for prevention of possible ground loops as well as other installation pitfalls.

Consult the appropriate manufacturer's installation instructions if there are any questions concerning grounding (earthing) of machinery information systems.

Code:SJ3,M7