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BENDIX SYSTEMS DIVISION ANN ARBOR, MICH.

ALSEP Experiment Power Line
Protection

NO.

ATM-289

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In order to proceed on schedule with the design effort for the Power Distribution Unit of the Data Subsystem a design philosophy has been established by the Data Subsystem Group. This ATM describes the design approach relative to experiment Power Line Protection.

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Protecting ALSEP against out of specification or catastrophic failure caused by excessive out of spec loads being placed on any of the experiment heater power or experiment prime power lines by means of current limiters, located in the Power Distribution Unit, is not considered to be in the best interests of the entire system.

In the event of a short circuit in the heater power line at the experiment end, the power to which the line was limited would be dissipated in the current limiter device. If the device were located in the Central Station, it would dissipate this heat and the experiment heater none. In addition, this could impose severe constraints on the central station thermal design and control.

If an experimenter chooses to use a current limiter, it should be located in his experiment package and be his responsibility.

To prevent uncontrolled overload on power lines to experiments, resetable circuit breakers will be employed in each line which feeds power to an experiment. These will be located in the Power Distribution Unit.

Locating heater current limiters in the experiment is to the experimenters benefit. If a heater element should short, the heat is still dissipated within the experiment packages and in effect serves as a redundant heater for the package.