

~~SECRET~~
CONFIDENTIAL Advance Copy
File RD-103
7.0.8
JLV

DOC	REV DATE	BY
ORIG COMP	GPI	TYPE
ORIG CLASS	PAGES	REV CLASS
JUST	NEXT REV	AUTH: HR 70-2

25X1

ILLEGIB



25X1

Dear

25X1

A preliminary study of the primary power supply requirements of the AS-6 has indicated a need for additional information regarding the watt half-second power drain.

It is noted that your proposal suggests that a five ampere hour NiCd battery is adequate for supplying 4.73 ampere hours at the anticipated yearly drain. Batteries of this type are rated by the manufacturer at the eight hour discharge rate, although the actual capacity is a function of discharge rate and end point voltage for the particular application. The discharge characteristics of a typical 5 ampere hour "high rate" cell at elevated current drains are as follows:

Current (Amps)	Voltage End Point	Period	Capacity (AH)
0.625	1.14	8 hrs.	5
2.7	1.14	1 hr.	4.7
6.91	1.14	30 mins.	4.455
23.7	1.14	10 mins.	3.95
30.0	1.14	1 min.	0.5
45.0	1.10	1 min.	0.75

In consideration of the above, the useful capacity of a 5 ampere hour cell is reduced to 0.75 ampere hours under a 45 ampere load with the end point voltage established at 1.10 volts. This cell when packaged as a 26 volt battery would yield 1260 watt minutes, or approximately one half the power requirements of the AS-6 for one year.

DOC	57	REV DATE	31 MAR 1980	BY	064540
ORIG COMP	033	GPI	56	TYPE	01
ORIG CLASS	5	PAGES	2	REV CLASS	C
JUST	22	NEXT REV	2010	AUTH:	HR 70-2

CONFIDENTIAL

~~SECRET~~

CONFIDENTIAL

The specific information we require to carry this investigation further is as follows: (a) Acceptable battery end point voltage, (b) Current drain during the 0.5 second transmission (c) Current drain during the warm-up period, (d) High voltage and current requirements for the 0.5 second transmission (e) High voltage and current requirements for the warm-up period. Items (d) and (e) above, relate to the feasibility of providing a radioisotope primary supply.



25X1

OC-E/R+D-EP: CEM:njr (18 Apr. 58)

cc: R+D Subject File

Reading

OC-E Chrono

R+D Chrono

EP Chrono

CONFIDENTIAL