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SANDIA CORPORATION
SANDIA BASE, ALBUQUERQUE, N. M.

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SANDIA SYSTEMATIC DECLASSIFICATION REVIEW

1st Review Date: 10/01/97
Authority: ☐ ADC ☒ ADD
Name: W.H. LAWRENCE
1st Review Date: 10/01/97
Authority: ADD
Name: W Payne

Determination (Circle Numbers):
1. Classification Retained
2. Classification Changed to: UNCL
3. Contains No DOE Classified Information
4. Coordinate With: _____
5. Contains UCNI? _____
6. Comments: _____

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June 29, 1965

Colonel S. H. Sherrill
Space Systems Division, SSUN
Air Force Unit Post Office
Los Angeles, California

Re: 461 EMI Problem

We at Sandia have received informal word from SSD that a ROM proposal has been submitted by LMSC concerning the cost and schedule implications of making EMI reduction modifications to the 461 vehicle and performing screen room tests to check the capability of these modifications. We understand that the proposed work would cost $300,000 and would require a month's launch slip.

The EMI problems in the 461/Vela Program cannot be defined. As presently planned, there is no capability to test the compatibility of the 461 vehicle and the W Experiment. Sandia Corporation has scheduled and will perform tests to define EMI radiation from the Vela System and also to determine the susceptibility of the Vela System to input radiation. These tests will be conducted in a screen room and although valuable, will have no direct relation to vehicle inputs which are undefined.

The sensitivity of the 461 W Experiment has been lowered from the Vela III level by a factor of ten but various estimates of 461 vehicle outputs indicate radiation above the threshold levels in the bounds of interest may be encountered. If the 461 vehicle is as quiet as the Vela Launch III spacecraft, there would be no problem. LMSC did accept a 100 micro volt per meter requirement noise level (20 db above the actual Vela III spacecraft condition) but would not accept any testing requirement. This implies to us that they do not feel the 461 vehicle can meet this requirement. Our understanding is that this requirement is about as severe as that imposed by 461's own EMI specification.

Without testing of the mutual compatibility between 461 and Vela, the value of the W Experiment is seriously degraded. How much degradation is a matter for conjecture since no data is available. The cost estimates of engineering fixes, testing time, and schedule slip indicate that only engineering fixes, as determined by the 461 EMI design review, would be feasible. Sandia Corporation has not seen any data which define how much improvement the engineering fixes would provide but certainly improvement is required.

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SANDIA SYSTEMATIC DECLASSIFICATION REVIEW
DOWNGRADING OR DECLASSIFICATION STAMP

CLASSIFICATION CHANGED TO: U
Emelda Selph 11/3/97
PERSON CHANGING MARKING & DATE
Emelda Selph 11/11/97
PERSON VERIFYING MARKING & DATE

AUTHORITY: W.C. Layne
RECORD ID: 98SN0012
DATED: 10/01/97

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The choices involved are: (1) to fly with no fixes and no EMI data, or (2) to fly with fixes in equipment and no EMI data, or (3) not to fly the W system at all. The second choice seems the best in view of the facts of life (particularly in this program) and we recommend that it be pursued. Even though the W Experiment will be degraded there is a probability that useful information may be gained. What this probability is, however, cannot be predicted on known data. From information provided by the fixes used on Vela III there is a good chance of improvement that would allow W Experiment operation on the 461 vehicle (assuming this experience can be transmitted by A/S to LMSC and if it is used by LMSC).

W. C. Myre, Supervisor
Satellite Systems Division

WCM:9231:dwp

Copy to:
R. C. Danta, Aerospace

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