COMPTROLLER GENERAL OF THE UNITED STATES
WASHINGTON, D.C. 20548

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Dear Senator Cook:

This is in response to your request that we examine into Mr. Robert S. Triplett's statements about wasteful practices at the National Civil Defense Computer Facility, Olney, Maryland.

Mr. Triplett stated in his letter to you and in discussions with us that little or no use was being made of computer system software costing about $600,000, disk files installed about 3 years ago costing about $550,000, a high-speed printer costing about $100,000, and an extensive data communication system costing about $500,000. He also said that the Olney facility had not claimed about $4,000 due under the computer maintenance contract.

We found that some of Mr. Triplett's charges had considerable merit in that extensive disk capability had been acquired substantially in advance of Olney's ability to use it, about $500,000 had been invested in computer system software which had not yet been put into use, and a high-speed printer costing about $100,000 had had very little use.

CONTRACT WITH INFORMATICS, INC.

In March 1967 a contract was awarded to Informatics, Inc., for design and specifications of a new disk-resident programming support system designated "DH-36." This system was intended to provide greater utilization of computers than was possible with the existing SCOPE system furnished by the equipment manufacturer. Olney officials explained that the original SCOPE system, which utilizes tape, provided no disk-processing capability. The essential requirements of the contract were analysis, design, detailed specifications of the system, and coding of a new compiler and certain other programs in the system. Plans called for coding the programs in-house on the basis of the contract specifications. The officials informed us that they took this approach because funds for all the work were not available at the time. Final contract costs were $491,410.

The initial target date for contract completion was June 1968. When additional tasks were added in May 1968, the target date was extended to January 1969. By subsequent no-cost modifications, the target date was extended to March 4 and then to June 3, 1969.

Shortly after the award of the contract, Olney learned that 10 authorized employee spaces could not be filled. At about the same

time, we were told that a number of employees, including some of the most capable in computer skills, had left the facility. The net effect of the reduced employee spaces and the employee loss had been that employees having computer experience had to be shifted to the most essential duties and that, as a result, the in-house effort in support of the contract could not be sustained at the planned level.

The contract work was completed in June 1969, or 1 year later than the original target date. At the time of the contract award, the target date for completion of the in-house work was January 1970 based on the projected use of seven employees full time for about 1-$\frac{1}{2}$ years beginning about June 1967 and fewer employees thereafter. The actual level of effort amounted to about 2-$\frac{1}{2}$ full-time spaces, attributable, according to Olney officials, to the employee losses and to the reduction in authorized employee spaces.

Olney officials explained that they allocated experienced employees to cover essential duties having higher priorities than the DH-36 system development. Our discussion of priorities indicated that the DH-36 program was considered to be about third or fourth in priority, following the fallout shelter programs, shielding analyses, and shelter analysis and design work. These officials pointed out that the DH-36 system was first priority only for the 2-$\frac{1}{2}$ employee spaces directly utilized on that program.

According to present plans, a preliminary version of the DH-36 system was scheduled to be installed sometime during June 1971, and it is expected to be fully operational about 3 months later. Thus it will be about 2 years after contract completion before Olney will begin using the DH-36 system and be in a position to move forward in utilizing the disk storage capacity for direct access to data in its applications work.

We agree generally with Mr. Triplett's statement that it is wasteful to invest in computer software for a system that is not implemented on a timely basis. However, it is difficult to establish a realistic basis for measurement of progress in computer programming work, and a certain amount of slippage appears to be the rule rather than the exception. Because design, programming, and installation of a sophisticated system, such as the DH-36, requires experienced, skillful systems personnel, we believe that the scheduled target date for completion of coding with the number and skill level of employees available at Olney was optimistic. The DH-36 system has not yet been implemented because of slippage in both the contract and the in-house parts of the work. Consequently the investment in the software effort has not begun to pay off.

CONTROL DATA CORPORATION 814 DISK FILES

Two Control Data Corporation (CDC) 814 disk files were installed in June 1967 and early in 1968 for about $508,000. Plans were for the National Fallout Shelter Survey program to be put on disk storage to permit random access to shelter data. The DH-36 operating system was intended to provide for use of the disks by the existing CDC 3200 and 3600 computers and to expand the capabilities of the computer system.

To date, the storage capacity and direct-accessing capability of these disks scarcely have been used. Future use of the disks will depend upon the installation of the DH-36 system, the planning for use of the disks during the systems design phase of current applications work, and the training of the systems and programming employees in disk use and capability.

Disk capability was necessary for use with the DH-36 system, but the requirement could have been met without buying both files at the outset. One unit could have been obtained, either by lease or by purchase, and the other unit could have been deferred until the DH-36 system became usable. Alternatively, a CDC 854 disk pack could have been leased to develop the DH-36 system. The disk pack is a smaller unit which Olney officials agree would have been sufficient for development of the DH-36 system, and it could have been leased for about $500 a month.

An official of the Office of Civil Defense explained that no additional justification was required for purchasing the second disk, because both units had been approved in the original authorization. Olney officials have stated that the DH-36 system will be operational sometime after mid-1971 and that work can then be started on using the mass disk storage capacity. It should be noted that further delay may occur during the initial phase of installing the DH-36 system. It will take much planning, systems, and programming work to use the disk storage capacity and direct access capability effectively. Officials at Olney recognize this fact and have indicated that they will develop a file management/information retrieval system to take full advantage of information stored on mass storage files.

In our opinion, it would have been more prudent to acquire only one disk unit, at least until the DH-36 system was operational and it was proven that the disks could be used to good advantage.

DATA COMMUNICATION SYSTEM

Four Digitronics 521 data communications terminals were acquired at a contract cost of about $516,000. They were ordered in June 1964, delivered in September 1966, and accepted in April 1967.

We were told that this purchase had been directed by the Office of Civil Defense as a backup for a similar system related to a classified activity. The purpose of this equipment is to provide an emergency data communication system which will allow receiving and sending magnetic tape information vital to civil defense should a national emergency arise. There has been no emergency to date requiring the use of this system.

We were told that the system was being tested every day to ensure that it was functional. Operating employees also were using the system to certify magnetic tape for usability and, on occasion, were converting tape character representation from a given bit-structure to another bit-structure as a service to another installation. These are not optimum applications for the equipment, but they do serve to keep it functional.

HIGH-SPEED PRINTER

An A. B. Dick 9041 printer was acquired in 1965 at a cost of $98,500. This machine had had limited use and was declared surplus in the latter part of 1970.

The requirements for recording data at the designed speed of this printer never materialized, and its use for other purposes was limited by the fact that the maximum number of characters a line was 120, whereas all data files in use at Olney were structured to 136 characters a line consistent with the Control Data Corporation equipment. In addition, the recommendation to declare this printer surplus stated that its principal disadvantage was poor print quality and that a series of visits by the vendor's representatives through February 1968 failed to improve quality sufficiently to permit its use.

Officials explained to us that action to declare the printer surplus had not been taken earlier because they knew of no prospective users and that the decision came when plans were made to move to a new building.

COMPUTER MAINTENANCE CONTRACT CREDITS

Our inquiry into the maintenance contract with Control Data Corporation showed that the contractor was billed on January 22, 1971, for the $4,395 applicable to the period March through December 1970, that was questioned by Mr. Triplett. On February 10, 1971, a claim for $641 additional for January was submitted.

In the process of obtaining this information, we met with knowledgeable officials and employees at Olney. We reviewed documentation

related to the software contract and discussed certain matters with appropriate officials of the Office of Civil Defense. We also consulted the Office of the Engineer Inspector General concerning its previous investigations.

We plan to make no further distribution of this report unless copies are specifically requested, and then we shall make distribution only after your agreement has been obtained. We shall be glad to discuss these matters with you or your staff if you so desire.

Sincerely yours,

Comptroller General
of the United States

The Honorable Marlow W. Cook
United States Senate