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WASHINGTON, D.C. 20548

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Dear Mr. Aspin:

The enclosed information is provided in response to questions by your office about selected aspects of the Safeguard Ballistic Missile Defense program. Safeguard is one of the programs included in our annual evaluations of major weapon systems.

At the time the Treaty on the Limitation of Anti-Ballistic Missile Systems was signed in May 1972, the approved Safeguard program consisted of a Ballistic Missile Defense Center at Colorado Springs, Colorado; deployment sites at Grand Forks, North Dakota, and Malmstrom, Montana; and advanced preparation of deployment sites at Whiteman, Missouri, and Warren, Wyoming.

As you know, the Treaty on the Limitation of Anti-Ballistic Missile Systems reduced the Safeguard program from a planned 12-site deployment to two sites and the Congress later limited the program to only one site.

The Army estimates that about \$481 million of "lost effort" resulted from the site reductions. Safeguard officials, however, have identified potential users for about \$112 million of the excess equipment and materials. Corps of Engineer's officials estimate that about \$110 million of the lost effort was attributable to termination and restoration costs of the Malmstrom site. This site was about 10 percent completed when the treaty was signed.

The enclosure also provides the information requested by your office concerning the Army's handling of certain costs in the Safeguard Selected Acquisition Reports. The June 30, 1973, Selected Acquisition Report cost categories contained estimated costs applicable to the three sites which were canceled.

The costs applicable to the canceled sites should have been eliminated from the cost change categories in order to have established a meaningful cost trail between the May 1969 planning estimate and the June 30, 1973, one-site estimate. The reduction from the four sites to the one site was reported as a quantity change. According to the

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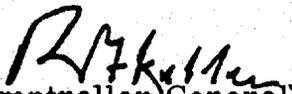
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Safeguard officials, this procedure was used for all deployment changes and the Safeguard Manager obtained approval from the Office of the Secretary of Defense (Comptroller).

We will be pleased to provide additional details if they are desired.

Sincerely yours,


Acting Comptroller General
of the United States

Enclosure

INFORMATION ON SELECTED ASPECTS OF THE
SAFEGUARD BALLISTIC MISSILE DEFENSE PROGRAM

The Safeguard ballistic missile defense system consists of two phased-array radar subsystems, two interceptor missile subsystems, and a data processor subsystem. The Perimeter Acquisition Radar will be used for early detection of incoming targets, and the Missile Site Radar will be used to track warheads at closer ranges and to launch and guide the defensive interceptors. The Spartan interceptor will be used for interceptions above the atmosphere, and the Sprint interceptor will be used for closer range interceptions. The data processor subsystem will contain the computer hardware and software programs necessary to operate and control the system. Operational command and control of the system will be maintained through a Ballistic Missile Defense Center.

In March 1969 the President established three primary defense objectives for the Safeguard program: (1) protect our land-based retaliatory forces against a direct attack by the Soviet Union, (2) defend the American people against the kind of nuclear attack which Communist China would likely be able to mount within the decade, and (3) protect the United States against the possibility of accidental attack from any source. To meet these objectives, the Safeguard system was to have been deployed at 12 sites, and the rate of deployment was to have been based on annual evaluations of the projected Soviet threat.

On May 26, 1972, the President signed the Treaty on the Limitation of Anti-Ballistic Missile Systems (ABM Treaty) which limited ballistic missile defense deployment to two sites, placed constraints on the configurations of the two sites, and limited the type of ballistic missile defense research and development programs which could be undertaken. When the ABM Treaty was signed, the approved Safeguard program consisted of a Ballistic Missile Defense Center at Colorado Springs, Colorado; deployment sites at Grand Forks, North Dakota, and Malmstrom, Montana; and advanced preparation of deployment sites at Whiteman, Missouri, and Warren, Wyoming.

As a result of the ABM Treaty, the Secretary of Defense directed the Department of the Army to immediately (1) suspend construction at Malmstrom and initiate plans to dismantle the site, (2) suspend all future work for the Whiteman and Warren sites, (3) initiate planning to cancel the 12-site program, (4) continue with deployment of the Grand Forks site, and (5) initiate planning to deploy on the fastest reasonable schedule a defense of the National Command Authority at Washington, D. C.

The Army therefore requested congressional approval to continue the Grand Forks deployment and to initiate deployment of the Safeguard system at Washington, D. C., using components already on contract for those sites at which work was to be terminated. The Congress approved the Army's request for continuing the Grand Forks deployment but denied deployment authorization for the system at Washington, D. C. The Army then terminated all production considered to be excess to the requirements of the Grand Forks site and the Ballistic Missile Defense Center.

LOST EFFORT

The June 30, 1973, Selected Acquisition Report for the Safeguard program showed that lost effort of \$501 million resulted from the ABM Treaty which limited system deployment to two sites and from subsequent congressional action which limited system deployment to one site.

The Army's \$501 million estimate contained \$17 million for early construction in the Sentinel program which could not be attributed to the Safeguard deployment reduction. Safeguard officials estimated that, of the remaining \$484 million, lost effort of \$272 million could be attributed to the ABM Treaty and that the remaining \$212 million could be attributed to the congressional action which denied deployment authorization for the system at Washington, D. C.

The Safeguard officials' estimate of excess equipment that could have been used at the Washington, D. C., site would, of course, have depended upon the actual configuration selected for the site. The \$212 million estimate prepared by Safeguard officials was based on what they considered to be the most likely configuration and consisted of \$165 million for radar components, \$22 million for Spartan interceptors, \$9 million for Sprint interceptors, and \$16 million for construction material.

Safeguard officials told us on February 15, 1974, that their current estimate for lost effort totaled \$481 million which represents a reduction of \$20 million from the June 30, 1973, estimate.

Use of excess equipment

At the time of our review, Safeguard officials had identified potential uses for about \$112 million of the excess equipment and material. Safeguard officials provided information showing that, of the \$112 million in excess equipment, Department of Defense (DOD) agencies could use about \$105 million and other Government agencies could use the remaining \$7 million. The planned uses for the excess equipment and material are discussed below.

Safeguard program

About \$46 million of the excess equipment is planned to be used to support the one-site Safeguard deployment at Grand Forks. Most of this equipment will be used for repair parts.

Site Defense program

About \$7 million is planned to be used in the Site Defense program: \$4.1 million for Sprint missile hardware and propellant, \$1.9 million for excess construction equipment and material, and \$1.2 million for two computers initially purchased for the Safeguard training facility.

Other Army programs

About \$4.4 million is planned for use in other Army programs. Most of this amount represents the cost of a maintenance and diagnostic subsystem trainer which is being held for use in the Army's SAM-D program.

Air Force uses

The Air Force plans to use excess Perimeter Acquisition Radar components to upgrade its 474N submarine-launched ballistic missile warning radar system. At the time of our review, \$700,000 of the equipment had been turned over to the Air Force and Safeguard officials estimated that the Air Force might be able to use additional Perimeter Acquisition Radar components worth about \$28 million. A Perimeter Acquisition Radar trainer worth \$7.4 million is also being held for Air Force use. In addition the Air Force will be given five diesel engines worth \$2.3 million.

Safeguard officials said their current disposal schedule permitted holding the excess Perimeter Acquisition Radar equipment for the Air Force until July 1, 1974. After this date, the Army plans to dispose of the equipment through normal disposal procedures.

Navy uses

Four diesel engines worth \$1.7 million have been turned over to the Navy.

Other uses

Corps of Engineers officials advised us that DOD activities have selected items worth about \$6.8 million from the residual inventories of the terminated construction contracts and that other Government agencies have selected items worth about \$7 million from these inventories.

MALMSTROM SITE TERMINATION AND RESTORATION

When the ABM Treaty was signed on May 26, 1972, about 10 percent of the Malmstrom construction had been completed. At June 30, 1973, the Corps of Engineers estimated that about \$147 million of the \$501 million lost effort was attributable to termination of the Malmstrom construction. The \$147 million included \$4 million for community impact assistance, \$71.3 million for design and construction costs before termination, \$70.4 million for estimated termination costs, and \$1.5 million for restoration of the site.

Estimated termination costs

The Corps of Engineers reduced the estimate for termination cost to \$34 million in January 1974. Corps of Engineers officials told us that the current estimate of \$34 million was based primarily on the construction contractors' settlement proposals. They also stated that they had not prepared an independent Government estimate but that the Defense Contract Audit Agency had made detailed audits of the contractors' proposed settlement costs.

Estimated restoration costs

The Corps of Engineers reduced the estimate for dismantling the Malmstrom site and restoring the landscape to \$900,000 in September 1973. The \$900,000 estimate includes \$604,000 for two firm-fixed-price contracts awarded in September 1973 and \$296,000 for Government contract management costs and a contingency to cover any further work that may be required.

METHOD USED TO HANDLE CERTAIN COSTS
IN SELECTED ACQUISITION REPORT

The June 30, 1973, Selected Acquisition Report contained an estimate of \$5.468 billion for the one-site deployment but excluded certain costs that were disclosed as either non-add items or in a footnote. Safeguard officials gave the following reasons for handling these costs this way.

Acquisition costs required after
the equipment readiness date

A footnote in the Selected Acquisition Report showed that acquisition costs of \$110 million would be required between the equipment readiness date of October 1974 and June 30, 1975, and that smaller amounts would be required in subsequent fiscal years. A total of \$153 million was estimated to be required between the equipment readiness date and June 30, 1979. On February 15, 1974, Safeguard officials advised us that their estimate for additional acquisition costs had been reduced to \$44 million.

We discussed the reasons for excluding the \$153 million from the one-site estimate with Safeguard officials, and they said that acquisition costs beyond the equipment readiness date of the last site have never been included in the program cost estimate for selected acquisition reporting. Safeguard officials stated that the procedure used had been approved by the Office of the Assistant Secretary of Defense (Comptroller) and had been agreed to by the staffs of the Armed Services Committees which use the Selected Acquisition Reports.

The December 1973 Selected Acquisition Report listed these post equipment readiness date costs as a separate column to the acquisition cost. A footnote explained these dollars. This method of cost reporting is an improvement over the previous method of showing the cost in a footnote. In our opinion, however, these costs meet the definition of acquisition costs and should be included in the program acquisition cost estimate.

Interceptor warhead cost

The Selected Acquisition Report showed the Atomic Energy Commission's cost to acquire nuclear warheads for Safeguard interceptors as a non-add item. We discussed the reasons for excluding nuclear warhead costs from the June 30, 1973, one-site estimate with an official of the Office of the Assistant Secretary of Defense (Comptroller) and were told that the cost was shown as a non-add item because DOD did not prepare the estimate or exercise control over expenditures of the funds.

As requested by the House Appropriations Committee, the Assistant Secretary of Defense (Comptroller) directed in January 1973 that warhead costs be included as a non-add item in the Selected Acquisition Reports. Before this direction, these costs were not disclosed in the Safeguard Selected Acquisition Reports. The disclosure of these costs, in our opinion, improves the reporting process.

Complementary development program cost

The Selected Acquisition Report showed costs of \$23 million for a complementary development program as a non-add item. Safeguard officials told us that the cost was not included in the June 30, 1973, one-site estimate because the program was not directly related to the Safeguard deployment at Grand Forks. This program is to modify the Safeguard Missile Site Radar at the Kwajalein Missile Range, Meacham Island, to support the Safeguard, Site Defense, and Advanced Ballistic Missile Defense Agency programs.

Safeguard funds of about \$7 million were spent in fiscal year 1973 for study, software design, and procurement of long leadtime hardware and the fiscal year 1974 Safeguard budget request included \$16 million to continue the program. The Senate Armed Services Committee, however, concluded that the complementary development program should be carried out under the research and development program conducted

by the Advanced Ballistic Missile Defense Agency. Responsibility for the program was transferred to that activity, therefore, these costs will not be included in future Safeguard Selected Acquisition Reports.

BASIS FOR SELECTED COST CHANGES SHOWN IN SELECTED ACQUISITION REPORT

The June 30, 1973, Selected Acquisition Report showed an estimated cost of \$5.468 billion for the one-site deployment which represents an increase of \$1.283 billion over the May 1969 initial planning estimate of \$4.185 billion for deploying two sites. Three of the largest changes included in the \$1.283 billion increase were \$790 million for inflation, \$697 million for schedule changes, and \$362 million for support changes. The results of our review of these changes and the method used by the Safeguard organization to allocate cost to these change categories are discussed below.

Inflation

DOD instructions require that inflation be computed on the basis of specific data considering such factors as actual contract provisions and labor agreements. When specific data is not available, however, the Assistant Secretary of Defense (Comptroller) provides indexes to be used in arriving at the inflation.

Of the \$790 million shown for inflation, \$488 million was computed based on indexes provided by the Assistant Secretary of Defense (Comptroller) and the remaining \$302 million was computed on the basis of specific data, such as actual labor and materials cost increases. The results of our examination into the methods used for computing inflation are discussed below.

The May 1969 planning estimate did not contain an allowance for inflation. In November 1969 the Safeguard organization updated the planning estimate to include \$136 million for inflation to cover price level increases from December 1968 to December 1969. We were provided information showing that \$104 million of this amount was computed using indexes provided by the Assistant Secretary of Defense (Comptroller) and that the remaining \$32 million was based directly on relative costs of construction labor and materials contained in the Engineering News Record Building Index of Cost Trends. Safeguard officials advised us that this publication was an accepted standard within both Government and industry.

In September 1970 the program estimate was increased by \$237 million to cover price level increases from December 1969 to December 1970. An ad hoc task force developed inflation rates for

the Safeguard program. These inflation rates were used to compute the \$237 million increase and were based on factors, such as actual labor and materials cost increases, Bureau of Labor Statistics indexes, and the Engineering News Record Building Index of Cost Trends. The rates were from 1.9 to 3.8 percent higher than the indexes provided by the Assistant Secretary of Defense (Comptroller).

Also in September 1970 the program estimate was increased by \$218 million to cover projected price level increases for future years. Of the \$218 million, \$185 million was computed by using the indexes provided by the Assistant Secretary of Defense (Comptroller), and the remaining \$33 million was based on actual signed labor agreements.

In January 1972 the Safeguard organization updated the program estimate for future year price level increases by including an additional \$199 million in the estimate. The \$199 million was computed on the basis of indexes provided by the Assistant Secretary of Defense (Comptroller).

Schedule changes

The \$697 million cost increase attributed to schedule changes consisted of \$202 million for research and development, \$481 million for procurement, and \$14 million for construction. Although documentation was not available to show how the costs were computed, the Army attributed most of these costs to congressional actions as discussed below.

The November 30, 1969, Selected Acquisition Report showed that initiation of construction at the Grand Forks and Malmstrom sites was delayed from the fall of 1969 to the spring of 1970 because of late congressional action on the fiscal year 1970 appropriation bill. The Army estimated that the delay caused a \$55 million increase in program costs.

In February 1970 the Army decided to delay the Grand Forks and Malmstrom schedules by 6 and 4 months, respectively, to allow a less compressed construction schedule and to reduce premium construction costs. The Army estimated that this delay increased program costs by \$82 million.

Because of late congressional approval of the fiscal year 1971 appropriation bill, initiation of work at the Whiteman site was deferred. The Army estimated that the delay would cause a 6-month delay in completing the site. Consequently, the Army also decided to delay completion of the Malmstrom site to provide a more even distribution of production and construction for the three authorized sites. The Army estimated that these delays would increase program costs by \$143 million.

Congressional action on the fiscal year 1972 budget request restricted effort for the Whiteman site to only advanced preparation as opposed to deployment which had been previously authorized. Consequently, construction at this site was again deferred, and the planned completion date was extended 14 months. The Army estimated that the delay would increase program costs by \$417 million.

Support changes

The \$362 million cost increase attributed to support changes resulted from revisions to estimated requirements for support items. We reviewed three of the most significant revisions which included increases of (1) \$20 million for additional data processing equipment, (2) \$43 million for community impact assistance, and (3) \$194 million for a reliability test program for Safeguard missiles. The results of our examination are discussed below.

Additional data processing equipment

In preparing the May 1969 planning estimate, Safeguard officials assumed that the data processor planned to be used at the software testing facility could also be used at the Malmstrom site. The Army subsequently determined, however, that the data processor could not complete its testing mission in time to meet the completion schedule for the Malmstrom site. The Safeguard System Manager therefore decided to purchase an additional data processor valued at \$20 million for the Malmstrom site and retain the one at the testing facility for spare parts or use at a future deployment site. We found no evidence to indicate that Safeguard officials could have anticipated these costs at the time the planning estimate was prepared.

Community impact assistance

The need of \$43 million for community impact assistance was not anticipated in May 1969 because the law providing for assistance payments had not yet been enacted. The \$43 million included \$17 million appropriated for the Grand Forks and Malmstrom areas and \$26 million estimated to complete the assistance in those areas and initiate assistance in the Whiteman and Warren areas.

Reliability test program

The \$194 million for the missile reliability test program was not included in the program cost estimate until January 1972. Safeguard officials told us that they anticipated the need for reliability testing in May 1969 but that the number of missiles required was not known at that time. The officials said that costs for the test program were

therefore not included in the cost estimate until the missile quantities were determined and the System Manager approved the reliability test plan. Although Safeguard officials were aware of the need for the test program when the planning estimate was prepared, a representative cost estimate would probably have been difficult to prepare at that time because missile quantities had not been determined.

Allocation of cost between
Selected Acquisition Report
change categories

The amounts included in the above discussed cost change categories contained estimated costs applicable to the three sites which were canceled. The cost applicable to the canceled sites should have been eliminated from the cost change categories in order to have established a meaningful cost trail between the May 1969 planning estimate and the June 30, 1973, one-site estimate.

DOD instructions for selected acquisition reporting require that cost increases and decreases be classified and accumulated in categories, such as economic, schedule, support, estimating, engineering, and quantity changes. At any time, the balances in these change categories should provide a cost trail showing the general reasons and dollar amounts of changes from the planning estimate to the current estimate. The Safeguard organization, however, did not follow these procedures in allocating cost to the change categories when the program deployment level changed. As a result, the cost amounts contained in the Selected Acquisition Report change categories do not provide a meaningful cost trail from the planning estimate to the current estimate.

Safeguard officials told us that a new program cost baseline was established each time the deployment level was changed and that the total difference between the estimated cost of the two deployment levels was reported as a quantity change. When the program was reduced from four sites to one site, for example, the total difference between the four-site estimate and the one-site estimate was reported as a quantity change. Consequently, the costs for economic, estimating, and other changes associated with the three canceled sites were not eliminated from the balances already accumulated in those change categories.

Safeguard officials told us that the current instructions for selected acquisition reporting were issued after the Safeguard deployment changes had occurred and that the Safeguard Manager had obtained approval from the Office of the Secretary of Defense (Comptroller) to continue employing the procedures originally agreed

upon by both to insure consistency and because of the time, cost, and difficulty which would be involved in recomputing the quantity change. Because the Safeguard program is nearing completion, we do not believe that significant benefits would be derived from reallocating these costs.