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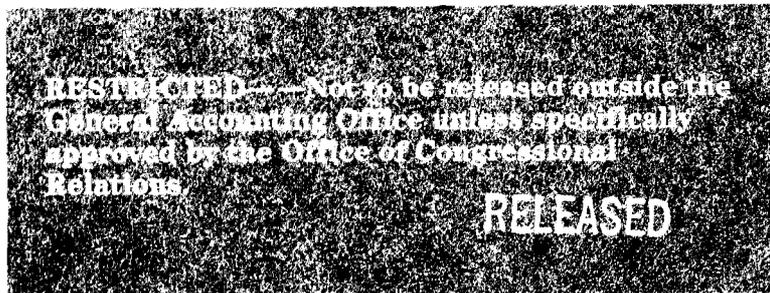
United States General Accounting Office

Briefing Report to the Honorable
Herbert H. Bateman, House of
Representatives

August 1989

NAVY RELOCATION

Transfer of the Naval Explosives Development Engineering Department



National Security and
International Affairs Division

B-234252

August 17, 1989

The Honorable Herbert H. Bateman
House of Representatives

Dear Mr. Bateman:

As requested, we reviewed the Navy's studies supporting the transfer of the Naval Explosives Development Engineering Department (NEDED) from the Naval Weapons Station, Yorktown, Virginia, to the Naval Ordnance Station Indian Head, Maryland. As part of our review we assessed the reasonableness of assumptions and validity of the data used by the Navy to determine that the move was cost-effective. We also identified and obtained cost estimates for additional facilities that would be required by NEDED at Indian Head. In addition, as requested, we examined two other options the Navy's studies had not considered—keeping separate organizations at each location (status quo) and leaving NEDED at Yorktown as a detachment of Indian Head.

This briefing report summarizes the information we provided to you and your staff and includes the views of the Defense Department and the Navy on the results of our work (see app. I). Also, we have updated some of the information we previously discussed with you.

Results in Brief

Our review did not refute the Navy's conclusion that potential savings could accrue from relocating NEDED to Indian Head but did lead us to conclude that the projected savings should be revised from \$10.3 million¹ over 30 years to \$7.1 million. We identified some factors that raise concern over the reliability of these projected savings. For example, the projected savings are based in part on the uncertain assumption that a new facility will be built. Of the two other alternatives we reviewed—the status quo and the Yorktown detachment option—the latter seems the most likely. While Defense and Navy officials said they still plan to relocate NEDED to Indian Head, they agreed that fiscal constraints may preclude or delay the relocation.

¹Costs discussed in this report are present values calculated by the Department of the Navy using a 10-percent discount rate, as in accordance with Office of Management and Budget Circular A-94 (Revised). Our policy on the calculation of present value differs from the methodology prescribed by the circular; we believe that the average yield of marketable Treasury securities is a more appropriate discount rate. However, calculations using our methodology did not change the conclusion of the Navy's economic analysis.

Background

In May 1987 the Naval Sea Systems Command (NAVSEA) announced its decision to transfer NEDED from Yorktown to Indian Head. Navy officials advised us that cost savings were not the primary reason for the transfer. They explained that the rationale for the transfer was a desire to (1) consolidate business lines and improve leadership and supervision at NEDED, (2) eliminate activities that did not contribute to the primary mission of the Navy's coastal weapons stations, and (3) use the same facilities for explosive and propellant materials engineering.

The move was to be accomplished in two steps: an administrative transfer in October 1987 and a physical move 5 years later. However, because of questions raised by affected personnel and subsequent congressional interest, the administrative transfer was delayed to allow time for (1) NAVSEA to prepare studies and (2) the Office of the Secretary of Defense and the Navy to consider the proposed move. The Navy's studies concluded that (1) the proposed move was feasible, although several concerns needed to be resolved, (2) there would be no significant or controversial environmental impact, and (3) the transfer to Indian Head would result in potential savings of \$10.3 million over 30 years. Short term savings would be generated by canceling three military construction projects at Yorktown and reducing planned capital equipment purchases. Savings over the remaining years (years 6-30) would be realized through increased productivity and a reduction in personnel and base operating costs. To effect these savings, the Navy expects to incur near-term building renovation and moving costs of about \$2.3 million.

Both the Navy and the Office of the Secretary of Defense supported the move, and the administrative transfer was made in June 1988. The Navy still plans to complete the physical move in fiscal year 1993. Engineers and managers at Indian Head are currently involved in planning, which includes preparing a detailed site plan and contracting to obtain designs, costs, and specifications for the move. This architectural and engineering contract is expected to cost about \$300,000.

Potential for Savings Exists, but Their Realization Is Uncertain

The assumptions and methodologies used in the economic analysis appeared, with several exceptions, to be reasonable, but the Navy did not always use the best source data available. We identified a number of inconsistencies and discrepancies that affected both the alternatives under consideration but did not refute the Navy's conclusion that potential savings were possible through the transfer to Indian Head. We revised the Navy's analysis using its operational assumptions and the

best available information. The revised analysis indicates potential savings of \$7.1 million over 30 years.

Although there is a potential for savings from the transfer of NEDED, a significant part of the savings is contingent on approval of a construction project. About \$3.2 million of the \$7.1 million in potential savings is based on the construction of a continuous processing facility. This savings would be generated by building one facility at Indian Head, to be shared between propellant and explosive development work, rather than building a facility at Yorktown dedicated to explosive development. However, it is not likely that the project will be built at either of the two installations involved. Navy officials told us that this project has a relatively low priority, and considering fiscal constraints, it would not likely be funded in the foreseeable future. If the project is not built, that portion of projected savings would not be realized. The uncertainty associated with estimated savings is compounded by the lack of precise information on which to base cost allocations and the unknown future direction of Navy munitions.

Yorktown Detachment Alternative

Because of the uncertainty of the reliability of the projected cost savings, we explored the potential for continuing to operate NEDED at Yorktown as a detachment of Indian Head. We used the revised data and estimated that over 30 years this alternative would cost about \$5.8 million more than the transfer to Indian Head. However, by keeping NEDED as a Yorktown detachment, the Navy would not incur, over the short term, the approximately \$3 million in training, relocation, and building renovation costs. Furthermore, Navy officials agreed that most of the original objectives had been accomplished by the June 1988 administrative realignment, and they identified several advantages to continuing to operate NEDED at Yorktown. These included the additional flexibility and capacity afforded the munitions community and the avoidance of potential loss of capability and expertise. Officials expressed concerns about the difficulty of managing and supervising NEDED from Indian Head and obtaining the required coordination and cooperation between safety departments. The officials agreed, however, that appropriate management and coordination could effectively resolve these problems.

Conclusions and Recommendation

The Navy's economic analysis, as revised during our review, continues to indicate that potential savings may be realized by consolidating at Indian Head. However, the uncertainty surrounding the military construction projects and the lack of reliable data on which to base operating cost projections provide little assurance that the potential savings will be realized. To effect the transfer, the Navy estimates it will incur near term costs of \$3 million, but it plans to contract with an architectural and engineering firm to obtain better estimates of the costs involved. The Navy will be investing the \$3 million to achieve a potential return of \$7.1 million over the next 30 years and must decide whether the amount and reliability of the potential savings constitute the best use of its limited financial resources.

In view of our lower estimated potential savings, likely fiscal constraints, and the resulting uncertainty that the physical move will take place, we recommend that the Secretary of the Navy reconsider the need for awarding an architectural and engineering contract to study the costs involved in moving NEDED to Indian Head until the likelihood of a move is more certain.

As requested, we did not obtain official agency comments on this report; however, we did discuss the results of our work with Defense and Navy officials. These officials generally agreed with the facts presented in this report. They advised us that they still plan to physically relocate NEDED to Indian Head but stated that fiscal constraints may preclude or postpone the consolidation.

As agreed with your Office, we plan no further distribution of this report until 7 days after its issue date. At that time we will send copies to Representative Roy Dyson and the Secretaries of Defense and the Navy. We will make copies available to other interested parties on request.

Staff members who made major contributions to this report are listed in appendix II. If you have any questions about the matters discussed in this report, please call me on 275-6504.

Sincerely yours,

A handwritten signature in cursive script, appearing to read "Martin M. Ferber".

Martin M Ferber
Director, Navy Issues

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Abbreviations

ACP	Asset Capitalization Program
DOD	Department of Defense
MILCON	Military Construction
NAVSEA	Naval Sea Systems Command
NEDED	Naval Explosives Development Engineering Department
NOS	Naval Ordnance Station
NWS	Naval Weapons Station

Transfer of Naval Explosives Development Engineering Department

Figure 1: Congressional Briefing

CONGRESSIONAL BRIEFING

Transfer of Naval Explosives Development Engineering Department (NEDED)

Figure 2: Background of NEDED Transfer

Background of NEDED Transfer

- May 1987, Navy announced transfer of NEDED
- October 1987 proposed effective date
- Physical move 5 years later
- Transfer delayed due to congressional interest

Figure 2: Background of NEDED Transfer (Cont'd)

Background of NEDED Transfer (Cont'd)

- Navy prepared studies to support the decision
- Secretaries of Defense and Navy supported decision
- Administrative transfer made in June 1988

Figure 2: Background of NEDED Transfer (Cont'd)

Background of NEDED Transfer (Cont'd)

- Estimated savings over 30 years -- \$10.3 million
- Revised savings estimate-- \$7.1 million
- Savings uncertain
- Other alternatives

Background

In May 1987 the Naval Sea Systems Command (NAVSEA) announced its decision to transfer the Naval Explosives Development Engineering Department (NEDED) from the Naval Weapons Station (NWS), Yorktown, Virginia, to the Naval Ordnance Station (NOS), Indian Head, Maryland. The move was to be accomplished in two steps: an administrative transfer in October 1987 and a physical move 5 years after that date. However, because of questions raised by affected personnel and subsequent congressional interest, the transfer was delayed to allow NAVSEA to prepare studies and to provide time for the Office of the Secretary of Defense and the Navy to consider the proposed move. Both eventually

supported the move. The administrative transfer was made in June 1988, and the physical move is planned for fiscal year 1993.

The administrative move consisted of placing NEDED under the Commanding Officer at NOS, Indian Head, and transferring operational, financial, and personnel support functions from Yorktown to Indian Head. NEDED, established at Yorktown in 1944, currently employs about 50 people and has an annual budget of about \$4 million. Its primary mission is development engineering of highly explosive materials approved for use in Navy munitions. Essentially, the unit develops and documents procedures to be used in processing explosives and loading them into warheads. The documentation, known as the Navy Munitions Document, provides the specifications to others who perform production operations. NOS performs similar engineering functions but works predominantly with propellants. However, it does have a small contingent (11 people) that works with highly explosive materials.

NAVSEA estimated that the planned move would be \$10.3 million less costly, over a 30-year period, than the consolidation of all explosive development engineering activities at NEDED. Our review of the NAVSEA analysis indicated that the difference would be about \$7.1 million. However, we identified some concerns regarding the reliability of the predicted cost savings. We also explored the costs of keeping the status quo and leaving NEDED at Yorktown as a detachment of Indian Head.

Figure 3: Objective, Scope, and Methodology

Objective, Scope, and Methodology

- Objective
 - Assess reasonableness of assumptions and validity of data used to determine the proposed physical move was cost-effective

Figure 3: Objective, Scope, and Methodology (Cont'd)

Objective, Scope, and Methodology (Cont'd)

- Scope
 - Reviewed Navy feasibility and environmental studies
 - Evaluated Navy economic analysis, assessed cost factors, and examined assumptions used

Figure 3: Objective, Scope, and Methodology (Cont'd)

Objective, Scope, and Methodology (Cont'd)

- Methodology
 - Analyzed Navy's approach and methodology
 - Reviewed available supporting documentation for the studies
 - Tested Navy calculations
 - Interviewed DOD officials

Figure 3: Objective, Scope, and Methodology (Cont'd)

Objective, Scope, and Methodology (Cont'd)

- Methodology
 - Visited NOS, Indian Head; NWS, Yorktown; and NAVSEA and DOD headquarters offices

Objective, Scope, and Methodology

We reviewed the Navy's studies supporting the management decision to transfer NEDED from NWS, Yorktown, to NOS, Indian Head. Our objective was to assess the reasonableness of assumptions and validity of the data the Navy used to determine that the move was cost-effective.

We also identified and obtained cost estimates for any additional facilities that would be required to accommodate the physical move to Indian Head. In addition, as requested, we examined two other options the Navy's studies had not considered—keeping separate organizations at each location (status quo) and leaving NEDED at Yorktown as a detachment of Indian Head.

To assess the accuracy and reliability of the assumptions, methodology, and data used, we reviewed available supporting documentation; tested the accuracy of the Navy's calculations; evaluated the Navy's analytic methodology; and interviewed Navy and Department of Defense (DOD) officials, including DOD Inspector General officials who had previously reviewed the Navy's studies. We also visited NAVSEA headquarters, NOS, and NWS to observe and obtain briefings on the missions and work loads of each location.

Because the methodology we used to calculate present values differs from that used by the Navy, we recalculated the Navy's present values. The Navy's approach, as prescribed by Office of Management and Budget Circular A-94 (Revised), is to use a 10-percent discount rate applied to constant dollar expenditures to calculate a present value. (Constant dollars correct for changes in the purchasing power due to inflation.)

Our policy on the calculation of present value is to use a discount rate that is based on the average yield of marketable Treasury debt comparable to the length of the project being evaluated. Given the existing Treasury rates at this time, this would imply a discount rate in the range of 3 to 5 percent to be applied to the Navy's constant dollar expenditures. We used discount rates of 3 percent and 5 percent to recalculate the present values but found that use of these lower rates did not change the conclusion of the Navy's economic analysis.

Our review was performed from June 1988 through March 1989 in accordance with generally accepted government auditing standards.

Figure 4: Rationale for NEDED Transfer

Rationale for NEDED Transfer

- Consolidate business lines
- Improve leadership and supervision for NEDED
- Purify Navy's coastal weapons stations
- Use same facilities for explosive and propellant materials engineering

Rationale for NEDED Transfer

Navy officials provided several reasons for the decision to transfer NEDED to Indian Head. The first factor was a desire to consolidate business lines and to improve the leadership and supervision provided to NEDED. NAVSEA personnel said that they believed overall management would be improved by consolidating similar engineering functions under a single manager whose primary activity was engineering development and processing of materials for propellants and explosives. NAVSEA officials also believed that the consolidation would reduce redundant operations, increase productivity, and ultimately save money.

A second factor cited by NAVSEA personnel was the desire to “purify” coastal weapons stations by removing activities that did not contribute to the primary mission of a station—the receipt, storage, segregation, and issue of munitions in support of fleet operations. Removal of activities such as NEDED would allow a station to concentrate on its primary mission.

A third consideration was the growing similarity between materials used for propellants and for explosives and the future construction required to facilitate the development of each. Essentially, this issue concerns using the same equipment and facilities for both propellants and explosives and the opportunity for constructing one facility to meet the needs of both.

Figure 5: Navy Studies

Navy Studies

- Feasibility study
 - Performed by Crane Weapons Support Center experts
 - Addressed feasibility only; no cost estimates
 - Concluded that no technical, safety, or capacity issues preclude the move

Figure 5: Navy Studies (Cont'd)

Navy Studies (Cont'd)

- Environmental impact study
- Performed by Naval Facilities Engineering Command
- Identified waste water issue
- Concluded direct impact of move was not significant or controversial

Figure 5: Navy Studies (Cont'd)

Navy Studies (Cont'd)

- Economic analysis
 - Compiled by Indian Head with NAVSEA guidance & assistance
 - Compared only two options: consolidating at Indian Head to consolidating at Yorktown
 - Concluded consolidation at Indian Head to be about \$10 million less

Figure 5: Navy Studies (Cont'd)

Navy Studies (Cont'd)

- Alternative A, consolidation at Indian Head: \$36.5 million
- Alternative B, consolidation at Yorktown: \$46.8 million
- Consolidation at Indian Head \$10.3 million less over 30-year economic life

Figure 5: Navy Studies (Cont'd)

Navy Studies (Cont'd)

- Major cost differences
 - MILCON and operation of new facilities, \$5.4 million
 - Equipment ACP purchases, \$2.8 million
 - Salaries, \$2.3 million
 - Explosives development operations, \$1.2 million

Navy Studies Supporting the Move

As of May 1987, when the document directing the transfer was issued, no comprehensive studies of the move had been made. However, because of congressional interest, NAVSEA initiated three separate studies to address the feasibility of consolidating explosive operations at Indian Head, the environmental impact of the consolidation, and the anticipated costs of the consolidation at either Indian Head or Yorktown. The studies were completed about the end of September 1987.

A team of experienced personnel, headed by the Commander of the Naval Weapons Support Center at Crane, Indiana, made the feasibility study. According to the team leader, the purpose of the study was to see

if the operations then being performed at NEDED could be transferred to NOS, Indian Head. The team did not address the costs associated with the transfer or future work load; it studied only the current operations at NEDED. The study did identify several concerns about the proposed move that would require additional expenditures to ensure safe operations. The study concluded that there was nothing to preclude NOS, Indian Head, from absorbing those functions being done at NEDED.

NAVSEA tasked the Naval Facilities Engineering Command, Chesapeake Division, with assessing the environmental impact of the move. The study concluded that the direct environmental impact of the move was neither significant nor controversial. The study did identify, however, certain problems with waste water (specifically, "pink water," the result of processing the explosive compound TNT) that would need to be addressed. It was proposed that a carbon absorption system be included in a waste water system planned for NOS, Indian Head.

The third study was NAVSEA's economic analysis, which was based primarily on information compiled by Indian Head. This study compares the anticipated costs of operations over the next 30 years for two alternatives: the consolidation of explosive development engineering functions at Indian Head (Alternative A: \$36.5 million) and the consolidation of those functions at Yorktown (Alternative B: \$46.8 million). Since the Navy had decided to consolidate operations at a single location, the study did not address keeping the status quo. The analysis was prepared in accordance with Navy instructions for cost analyses to explore alternative courses of action.

The conclusion of the economic analysis was that consolidating the engineering functions at Indian Head would cost, over 30 years, the government about \$10.3 million less than consolidating at Yorktown. A large part of the savings was to be generated by deleting Military Construction (MILCON) projects and equipment purchases under the Asset Capitalization Program (ACP). For example, the cost differential in the anticipated cancellation of MILCON projects was \$5.4 million and in equipment purchases it was \$2.8 million. Most of the remaining savings were to be achieved through reductions in personnel costs (\$2.3 million) and operating expenses (\$1.2 million). NAVSEA concluded that, although cost reduction was not the motivation for the move, the cost analysis supported its decision to consolidate at Indian Head rather than at Yorktown.

Figure 6: Evaluation of Navy Economic Analysis

Evaluation of Navy Economic Analysis

- Our review and revisions of estimated costs did not alter the conclusion
- Identified discrepancies in assumptions, methodologies, and estimated costs

Figure 6: Evaluation of Navy Economic Analysis (Cont'd)

Evaluation of Navy Economic Analysis (Cont'd)

- Discrepancies identified
 - NEDED pilot plant MILCON and operation overstated \$2.2 million
 - NEDED curing facility MILCON and operation overstated \$648,000
 - NEDED laboratory expansion overstated \$607,000

Figure 6: Evaluation of Navy Economic Analysis (Cont'd)

Evaluation of Navy Economic Analysis (Cont'd)

- Discrepancies identified
 - Maintenance of existing NEDED facilities understated \$832,000
 - NEDED utilities understated \$1.8 million
 - Indian Head electricity costs understated \$3.2 million

Figure 6: Evaluation of Navy Economic Analysis (Cont'd)

Evaluation of Navy Economic Analysis (Cont'd)

- Discrepancies identified
 - Indian Head facility upgrade and modification understated \$358,000
 - Additional Indian Head facility modifications, \$319,000
 - NEDED ACP equipment purchases overstated \$750,000

Figure 6: Evaluation of Navy Economic Analysis (Cont'd)

Evaluation of Navy Economic Analysis (Cont'd)

- Revised cost estimates indicate consolidation at Indian Head \$7.1 million less
- Consolidation at Indian Head \$38.3 million
- Consolidation at NEDED \$45.4 million

Evaluation of Navy Economic Analysis

The assumptions and methodologies used in the economic analysis appeared, with several exceptions, to be reasonable. However, the analysis was done quickly, and in some cases the Navy used readily available information rather than the best information available at the time. Also, the use of imprecise information to allocate operating costs raises concerns about the reliability of predicted cost savings. In the analysis itself we identified omissions, computational errors, and other discrepancies in both alternatives. Nevertheless, the revised analysis still indicates that the planned move is the lower cost alternative—by about \$7.1 million over 30 years.

During our review we revised almost all the cost categories to correct for inconsistencies, methodology changes, omitted costs, and duplicate costs. For example, numerical rounding in the Navy's analysis was not consistent. To enhance accuracy, we obtained source data and rounded to the nearest hundred. Some other examples of discrepancies follow.

- Planned costs for construction and operation of new facilities at Yorktown were overstated by about \$3.5 million, comprising \$2.2 million for a continuous processing plant, \$648,000 for a curing facility, and \$607,000 for a laboratory expansion. The analysis included about \$10.3 million for a continuous processing plant at Yorktown but only \$7.6 million for one at Indian Head. The reason for the difference was that the plant at Yorktown was planned to be considerably larger. We believe, and NAVSEA officials agreed, that NAVSEA should decide what size plant is needed, and then the construction cost should essentially be the same at either site. The cost of a proposed laboratory expansion was overstated due to a misunderstanding of the type of space to be built. Finally, the analysis included costs for a new curing facility, but there were no actual plans for one. Navy officials agreed that work load requirements could be met without this facility.
- The facility maintenance cost at Yorktown was computed differently than the same type of cost at Indian Head. Correction of this inconsistency increased the cost at Yorktown by about \$832,000 over the 30-year period. A similar correction increased utility costs by \$1.8 million.
- The estimate for electricity costs at Indian Head was improperly computed. The costs did not properly allow for certain high usage facilities and were computed using the wrong electricity rate. Our revision, which corrected these errors, increased the expected electricity cost by \$3.2 million.
- The cost of facility modernization at Indian Head was understated by about \$358,000 because inflation costs for work to be done under contract in fiscal year 1992 were omitted. Also, an additional \$319,000 was estimated to address the concerns raised in the feasibility and environmental studies and in subsequent planning meetings between Indian Head and NEDED engineers. However, this cost was absorbed by a contingency included in the original estimate.
- The ACP equipment purchases planned for Yorktown included about \$750,000 for equipment already included as part of the MILCON project for a continuous processing facility.

The analysis includes only identified costs of explosive development engineering at the two installations. In addition, either alternative could result in additional costs being incurred by other Navy activities. For

example, officials at NWS, Yorktown, said that if the move occurs, they would have to equip and staff a laboratory or arrange to purchase services from another source. Station officials estimated the equipment cost to be \$800,000 and annual salaries of the necessary staff to be \$196,000. Over the 30-year period, the discounted cost would be about \$1.6 million. Indian Head officials maintained that if operations were consolidated at Yorktown, they would still need a continuous processing facility for propellants, at a cost of about \$9.7 million. These costs were not included in the analysis.

In summary, our revisions and corrections do not affect the Navy's conclusion; over time, it will be more economical to consolidate explosive development engineering functions at Indian Head. Our analysis still indicates that the planned move will cost about \$7.1 million less than a consolidation at Yorktown (\$45.4 million at NEDED versus \$38.3 million at Indian Head). However, these savings assume certain events will occur.

Figure 7: Factors Affecting the Reliability of Predicted Cost Savings

Factors Affecting the Reliability of Predicted Cost Savings

- Reliability of cost savings
 - Depend heavily on uncertain MILCON plans
 - Imprecise data used for estimates
 - Future direction of munitions development uncertain

Factors Affecting the Reliability of Predicted Cost Savings

The likelihood that the savings forecasted by the cost analysis would be realized is diminished by (1) the uncertainty surrounding some assumptions, especially about military construction projects, (2) the imprecise source data used to prepare some estimates, and (3) the uncertain future of Navy munitions and the technologies involved with producing them.

A large part of the predicted savings involves the Navy's plans to construct a continuous processing plant. The assumption used in the analysis was that a plant planned for NEDED would be eliminated and a dual-

use plant would be built at Indian Head. Indian Head officials maintained that the cost of the facility would be split about 50-50 between propellant and explosive activities; therefore, only half the costs of the dual-use plant should have been included in the analysis. However, Indian Head officials could not provide written estimates of the percentage of costs attributable to explosive development operations or documentation showing that the dual-use plant was planned prior to the consolidation decision. Further, there is no certainty that either facility would actually be supported by the Navy and funded by the Congress. Several key Navy officials believed that such a facility would not be built at either location because of funding constraints and its low priority status. If neither plant were considered in the analysis, the \$7.1 million projected savings would be reduced by \$3.2 million.

A second factor is the lack of reliable data for use in estimating costs. An example is the estimate of facility usage that Indian Head used to predict operating costs for the 30-year period. Since some facilities would be used for both propellant and explosive operations, the Indian Head estimators used only a portion of the facilities' operating costs in the analysis. However, there was no reliable source data on which to base the allocation. The allocations used in the analysis were very rough estimates, based only on fiscal year 1989 planned work load and the judgment of management. This was the only source we were able to identify for this type of data. Historical usage data developed over a longer period would have provided a better basis for projecting costs.

The third factor, the uncertain future of Navy explosive development, was raised by several Navy officials. The analysis is based on the assumption that the composition and volume of the explosive development engineering work load would remain essentially constant for the next 30 years. Navy officials said that is extremely unlikely. The Navy is currently pursuing a program to develop munitions that are less susceptible to impact and heat and is exploring a number of alternatives for use in future Navy weapons. Changes in the type of explosives under development and the technology needed to process them could have a significant impact on the work load at both NEDED and NOS, Indian Head.

Figure 8: Alternatives to Consolidation

Alternatives to Consolidation

- Status Quo (prior to administrative transfer)
- NEDED as Indian Head detachment operating at Yorktown

Figure 8: Alternatives to Consolidation (Cont'd)

Alternatives to Consolidation (Cont'd)

- Indian Head consolidation, \$38.3 million
- Yorktown consolidation, \$45.4 million
- Status Quo, \$52.1 million
- NEDED as Indian Head detachment, \$44.1 million

Alternatives to Consolidation

We also examined the potential for two other alternatives: keeping the status quo and operating NEDED at Yorktown as a detachment of NOS, Indian Head. Of the two, the latter seems the most likely alternative. NAVSEA officials essentially rejected the return to status quo because they believed that the administrative move was made for sound business and managerial reasons. The Navy stated that its plan was still to physically consolidate the activities, but considering budgetary constraints, there was a possibility that NEDED would remain at Yorktown. The Navy expects to contract with an architectural and engineering firm to obtain better estimates of the cost of building renovation and equipment relocation. The cost of this contract will be about \$300,000. Navy

officials said that this would provide a better basis for a final decision on the move.

Status Quo Costs

We used the same overall assumptions and data as the revised analysis to prepare an estimate of the costs of continuing the status quo for the 30-year period. Our figures showed that this alternative would cost about \$13.8 million more than the consolidation at Indian Head. This is primarily because similar facilities would have been constructed at both locations; thus, all the planned MILCON costs would be incurred, and none of the savings attributable to consolidation would be realized, that is, personnel reductions and reduced operating costs.

Continued Operation of NEDED as a Detachment of Indian Head

Again using the same information, we estimated the costs of continuing NEDED operations at Yorktown but under the command and control of Indian Head. These costs indicate this alternative would be about \$5.8 million more expensive than physical consolidation at Indian Head. However, this amount is subject to the same reliability concerns discussed previously, and Navy officials agreed that there are arguments for leaving NEDED at Yorktown. The following are some of the arguments.

- The June 1988 administrative realignment satisfied most of the concerns that prompted the Navy's action. Officials said that placing NEDED under the command and control of an engineering activity (Indian Head) consolidated business lines and provided improved leadership and supervision. This also "purified" the mission of NWS, Yorktown, since it was no longer responsible for daily operations of NEDED and could concentrate its management efforts on its primary mission of handling munitions for the fleet.
- A large part of the short term savings (actually cost-avoidance) suggested by the economic analysis could be achieved without physically transferring the facility, simply by not funding MILCON projects and ACP purchases.
- Indian Head's corporate structure and capacity would be expanded by operating NEDED as a detachment, thereby providing future flexibility due to new developments in munitions or changes in work load.
- The Navy would not be faced with a loss of expertise or training expense. Of the 50 NEDED employees, 47 have stated that they will not move to Indian Head. Also, the Navy would not incur the approximately \$3 million (in fiscal years 1992, 1993 dollars) renovation and moving costs.

- NEDED could continue to provide laboratory and engineering services to NWS, Yorktown, ordnance department. Yorktown officials said that if NEDED is moved, the station will have to contract for these services or develop organic capability.

Navy officials also identified some disadvantages, which primarily involve the difficulty of remotely managing a hazardous operation, and the requirement for NEDED to deal with two safety departments. Officials agreed, however, that these disadvantages could be overcome through management and coordination.

Figure 9: Conclusions and Recommendation

CONCLUSIONS AND RECOMMENDATION

- Revised analysis still indicates cost savings
- Potential savings are uncertain
- Navy's decision

Is it worth investing \$3 million in the near term to save \$7.1 million over 30 years?

Figure 9: Conclusions and Recommendation (Cont'd)

CONCLUSIONS AND RECOMMENDATION (CONT'D)

- Secretary of the Navy should reconsider the need for awarding an architectural and engineering contract for about \$300,000

Conclusions and Recommendation

The Navy's economic analysis, as revised during our review, continues to indicate that potential savings may be realized by consolidating at Indian Head. However, the uncertainty surrounding the military construction projects and the lack of reliable data on which to base operating cost projections provide little assurance that the potential savings will be realized.

To effect the transfer, the Navy estimates it will incur near term costs of \$3 million. However, it plans to contract with an architectural and engineering firm to obtain better estimates of the costs involved. Essentially, the Navy will be investing the \$3 million to achieve a potential return of

\$7.1 million over the next 30 years and must decide whether the amount and reliability of the potential savings constitute the best use of its limited financial resources.

In view of our lower estimated potential savings, likely fiscal constraints, and uncertainty that the physical move will take place, we recommend that the Secretary of the Navy reconsider the need for awarding an architectural and engineering contract to study the costs involved in moving NEDED to Indian Head until the likelihood of a move is more certain.

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