Audit Report

OFFICE OF THE INSPECTOR GENERAL

MICROELECTRONICS (ELECTRONIC DEVICES) RESEARCH, DEVELOPMENT, TEST, AND EVALUATION LABORATORIES WITHIN DOD

Report No. 94-078 April 8, 1994

Department of Defense

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Acronyms

BRAC	Base Realignment and Closure
DMRD	Defense Management Review Decision
DDR&E	Director, Defense Research and Engineering
GAO	General Accounting Office
IG	Inspector General
RDT&E	Research, Development, Test and Evaluation

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
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April 8, 1994

MEMORANDUM FOR COMPTROLLER OF THE DEPARTMENT OF DEFENSE
DIRECTOR, DEFENSE RESEARCH AND ENGINEERING
ASSISTANT SECRETARY OF THE NAVY (FINANCIAL MANAGEMENT)
ASSISTANT SECRETARY OF THE AIR FORCE (FINANCIAL MANAGEMENT AND COMPTROLLER)
AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Audit Report on Microelectronics (Electronic Devices) Research, Development, Test, and Evaluation Laboratories Within DoD (Report No. 94-078)

We are providing this final report for your information and use. Comments on the draft report were considered in preparing this final report and are included in Part IV, Management Comments. Report No. 94-075, "Report on Advanced Materials Research, Development, Test and Evaluation Laboratories within DoD," April 1, 1994 is a companion report addressing similar issues. Management replies to that report were identical or very similar to the responses to the draft of this report. Nevertheless, for completeness they are addressed again in detail in this report.

Because a contract award for a new Microelectronics Laboratory at Adelphi, Maryland, is being suspended pending resolution of our recommendations, we request the Director, Defense Research and Engineering to reconsider her position on Recommendation 1 and provide comments within 15 days.

The courtesies extended to the audit staff are appreciated. If you have any questions on the audit, please contact Mr. Raymond Spencer, Program Director, at (703) 614-3995 (DSN 224-3995) or Mr. David Vincent, Project Manager, at (703) 693-0355 (DSN 223-0355). Appendix H lists the planned distribution of this report.

Robert J. Lieberman
Assistant Inspector General
for Auditing

Enclosure

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This report was prepared by the Acquisition Management Directorate, Office of the Assistant Inspector General for Auditing, Department of Defense.

Office of the Inspector General, DoD

Report No. 94-078 **April 8, 1994**
(Project No. 3AB-0058.02)

REPORT ON MICROELECTRONICS (ELECTRONIC DEVICES) RESEARCH, DEVELOPMENT, TEST, AND EVALUATION LABORATORIES WITHIN DOD

EXECUTIVE SUMMARY

Introduction. The mission of DoD laboratories is to maintain U.S. technological superiority over potential adversaries. The DoD laboratories also provide technical expertise to enable the Military Departments to be smart buyers and users of new and improved weapons systems and support capabilities. The Director, Defense Research and Engineering, indicated that in FY 1991, total DoD funding for research, development, test, and evaluation laboratories was $13.8 billion. In May 1993, we began a self-initiated audit of advanced materials and electronic devices research laboratories within DoD (Project No. 3AB-0058). This is one of two quick-reaction reports on DoD laboratories. This report was issued to preclude the issuance of a construction contract and the related obligation of funds.

Objectives. The overall audit objective is to determine whether redundant investment is being made by DoD in advanced materials and electronic devices research and development laboratories. Specific objectives include evaluating the adequacy of DoD management and oversight of the various laboratories and the effectiveness of Project Reliance as implemented by the Joint Directors of Laboratories. We are also evaluating laboratory consolidations and realignments to verify cost avoidance claimed by Project Reliance in response to Defense Management Review Decision 922 initiatives. This report was issued to preclude the issuance of a construction contract and the related obligation of funds for new construction of DoD laboraties. A complete review of all objectives will be discussed in a subsequent report.

Audit Results. The Army plans to build a major new laboratory facility and to procure new equipment for microelectronic (electronic devices) research that may be unnecessary and redundant to existing DoD capability. The Army may be spending as much as $306 million for new construction, equipment, and associated personnel-related expenses.

Internal Controls. The audit identified material internal control weaknesses. Internal controls and the implementation of the DoD Internal Management Control Program were not effective to ensure that financial data submitted by DoD and the Army to the 1991 base realignment and closure commission were complete and accurate. However, in light of new certification requirements for future Base Realignment and Closure submissions, we make no recommendations in this report regarding internal controls. See Part I for a discussion of internal controls reviewed.

Potential Benefits of Audit. We calculated that DoD could avoid expending as much as $306 million for new building construction, equipment, and associated personnel costs by utilizing existing laboratory space and equipment. See Appendix F for a summary of the potential benefits resulting from this audit.

Summary of Recommendations. We recommended that the Comptroller of the Department of Defense withhold the military construction funds for the Army laboratory construction until an independent and objective analysis has been completed on the need for the proposed new laboratory. We recommended that the Under Secretary of Defense for Acquisition and Technology task the Defense Science Board to study the need for the new Army laboratory from a DoD perspective.

Management Comments. The Director, Defense Research and Engineering, nonconcurred with the recommendation to evaluate the need for the new Army laboratory, stating that further study of the issue was not justified because the 1991 Base Realignment and Closure Commission requires the Army laboratory to move. The Comptroller of the Department of Defense concurred with the recommendation to withhold funds and stated that a temporary hold had been placed on military construction funds pending a ruling by the Office of General Counsel, DoD, of the legal implications. The Comptroller of the Department of Defense suggested that the issue of moving the Army laboratory could be studied further as part of the 1995 base realignment and closure process.

Although not required, the Army, the Navy, and the Air Force also provided comments on a draft of this report. The Army disagreed with the audit conclusions, stating that the report was factually inaccurate, badly flawed in logic, and contained legally objectionable conclusions. The Navy also disagreed, stating that the Defense Science Board had conducted a thorough study of the issue of DoD laboratory management. The Air Force agreed that an independent assessment by a group of outside technical experts would be valuable.

A summary of management comments on the recommendations and the finding is in Part II of this report. A summary of the Army comments on the report and our response is in Appendix C. The complete text of all management comments is in Part IV.

Audit Response. The Director, Defense Research and Engineering, position that the Army laboratory move is required by the 1991 Base Realignment and Closure Commission is correct. However, several legal opinions and recently issued policy guidance regarding the 1995 Base Realignment and Closure Commission allow earlier Commission recommendations to be reconsidered. We found the Comptroller of the Department of Defense comments to be responsive. We found only limited new facts in the Army's lengthy comments. An extensive point-by-point rebuttal of the Army comments appears at Appendix C. We request the Director, Defense Research and Engineering, to reconsider her position on Recommendation 1 and provide comments within 15 days.

Part I - Introduction

Background

Mission of DoD Laboratories. The mission of DoD laboratories is to maintain technological superiority over potential adversaries. DoD laboratories also provide technical expertise to the Military Departments to educate them as smart buyers and users of new and improved weapon systems and support capabilities.

Organization and Management of Army Laboratories. As of March 1, 1994, the Army operates 21 laboratories, centers, and institutes that employ approximately 29,000 military and civilian personnel. Total funding for the Army activities was $4 billion in FY 1993. The Deputy Assistant Secretary of the Army for Research and Technology provides policy and oversight for the Army's laboratory system.

Defense Management Review Decision 922 to Manage DoD Laboratories. In 1989, Defense Management Review Decision (DMRD) 922 originally proposed that the Under Secretary of Defense for Acquisition develop a comprehensive management plan for the Military Departments' efforts to increase efficiency and to reduce the cost of their research, development, test, and evaluation (RDT&E) operations. Two primary alternatives were considered as part of DMRD 922:

o The first alternative, sponsored by the Military Departments, proposed the Tri-Service Science and Technology Reliance Program (now known as Project Reliance).

o The second alternative would have created a Defense Science, Engineering, and Test Agency to centrally manage and operate all DoD science and technology activities.

Concerned about perceived risks associated with the second alternative, the Deputy Secretary of Defense approved implementation of Project Reliance, even though the second alternative might result in significantly higher savings.

Army Recommendations. The Army chose to present its recommendations as part of the 1991 Base Realignment and Closure (BRAC) process. In the April 22, 1991, issue of Defense News, a senior Army research official was quoted as saying, "The situation we are faced with is a major reorganization trying to take place. If we fold the moves under base closure, we can capitalize on the fact that it becomes law." The Army claims the official was misquoted.

1991 BRAC Commission Approval of Army Laboratory Consolidation Plans. The 1991 BRAC Commission approved establishment of the Combat Material Research Laboratory (subsequently renamed the Army Research Laboratory in October 1992) at Adelphi, Maryland.

Army Research Laboratory Organization. In October 1992, the Army Research Laboratory was established from the Army Laboratory Command and elements of the Army Research Institute; Belvoir Research and Development Center, Center for Night Vision and Electro-Optics; Tank-Automotive Command; Aviation Systems Command; Chemical Research, Development and Engineering Center; and the Army Institute for Research in Management Information, Communications, and Computer Sciences.

Army Research Laboratory Planned Locations. The Army plans to locate the Army Research Laboratory at two major sites: Adelphi and Aberdeen Proving Ground, Maryland. The Army Research Laboratory also plans to have several adjunct locations at White Sands Missile Range, New Mexico, the National Aeronautics and Space Administration Langley Research Center in Hampton, Virginia, and the Lewis Research Center in Cleveland, Ohio.

Army Research Laboratory Construction Projects. Three laboratory construction projects are directly related to the Army Research Laboratory. Specifically, the Army plans to build a new advanced materials laboratory at Aberdeen Proving Ground projected to cost $109 million; a new microelectronics laboratory at Adelphi projected to cost $169 million; and, as a result of the Army Research Laboratory consolidation and objectives, a new fuze evaluation facility at Redstone Arsenal, Alabama, projected to cost $3 million. In its FY 1994 "Justification Data Submitted to Congress," March 1993, the Army estimated the total implementation cost to reorganize, construct, and equip the new facilities for the Army Research Laboratory to be $415 million.

Commission on Base Realignment and Closure

Initial BRAC Commission Charter and Recommendations. On May 3, 1988, the Secretary of Defense chartered the BRAC Commission to recommend military installations for realignment and closure. The 1988 BRAC Commission recommended 59 realignments and 86 base closures using cost estimates provided by the Military Departments. Subsequently, Public Law 100-526, "Defense Authorization Amendments and Base Closure and Realignment Act," October 24, 1988, was passed by Congress and signed by the President to enact the Commission's recommendations. Public Law 100-526 also established the DoD Base Closure Account to fund any necessary facility renovation or MILCON projects related to the realignments and closures.

Subsequent BRAC Commission Recommendations. Public Law 101-510, "Defense Base Closure and Realignment Act of 1990," November 5, 1990, re-established the Commission and chartered it to meet during calendar years 1991, 1993, and 1995. To ensure that the process for realigning and closing military installations was timely and independent, Public Law 101-510

stipulated that realignment and closure actions must be completed within 6 years after the President transits the recommendations to Congress. The 1991 Commission recommended that an additional 34 bases be closed and 48 bases be realigned.

Section 2822 of Public Law 102-190, "National Defense Authorization Act for Fiscal Years 1992 and 1993," December 5, 1991, as amended by the National Defense Authorization Act for Fiscal Year 1993, Section 2825, Revision of Requirements Relating to Budget Data on Base Closures (Public Law 102-190, sec. 2822, December 5, 1991, 105 Stat. 1546, as amended by Public Law 102-484, sec. 2825, October 23, 1992, 106 Stat. 2609; 10 U.S.C. 2687 note), requires that the Secretary of Defense ensure that the authorization amount DoD requests for military construction relating to the closure or realignment of each military installation in each of the fiscal years 1992 through 1999 not exceed the original estimated cost (adjusted as appropriate for inflation) that was provided to the BRAC Commission.

The Secretary of Defense may submit a request for authorization that exceeds the estimated cost submitted to the Commission, if he determines the greater amount is necessary. However, if he does, a complete explanation of the reasons for the increase must accompany the request to the Congress.

The law requires the Inspector General (IG), DoD, to investigate each military construction project the Secretary is required to explain, if (under standards prescribed by the IG) the IG, DoD, considers the cost differences to be significant. The IG, DoD, is required to determine why the amount requested to be authorized for a project that exceeds the estimated cost of the project that was submitted to the Commission by DoD, and determine whether the relevant information submitted to the Commission with respect to that project was inaccurate, incomplete, or misleading in any material respect.

Separate submissions were provided by DoD and the Army to the 1991 BRAC Commission regarding the LAB 21 Study (Army Research Laboratory). Specifically, the DoD submission stipulated an estimated cost of $92 million. The separate Army Submission stipulated an estimated cost of $348 million. The 1991 BRAC Commission in its report recognized a cost of $281.8 million through FY 1997 for implementing the ARL. Subsequently, in March 1993 the Army requested $415 million beginning in FY 1994 for ARL military construction costs.

Objectives

Our overall audit objective is to determine whether redundant investment is being made by DoD in advanced materials and electronic devices research and development laboratories. Specific objectives include evaluating the adequacy of DoD management and oversight of those laboratories and the effectiveness

of Project Reliance as implemented by the Joint Directors of Laboratories. We are also evaluating laboratory consolidations and realignments to verify cost avoidance claimed by Project Reliance in response to DMRD 922 initiatives.

Scope and Methodology

Audit Standards and Technical Assistance. This economy and efficiency audit is being conducted in accordance with standards issued by the Comptroller General of the United States as implemented by the Inspector General, DoD. We included such tests of internal controls as were deemed necessary. We limited the scope of the audit to advanced materials and electronic devices (microelectronics) research and development laboratories. The Director, Defense Research and Engineering (DDR&E), provided technical assistance by assigning a staff specialist for microelectronics to assist the audit team in analyzing Research and Development program documentation and evaluating facilities and laboratory equipment.

Methodology. We started the audit on May 10, 1993, and it is ongoing. The Research and Development program documentation and other relevant information are being analyzed for the most recent 3 years from FY 1991 through FY 1993. We are also evaluating Project Reliance implementation agreements among the Military Departments for evidence of cooperation, collocation, or Military Department leads in the specified technology areas and to verify cost avoidance claimed by Project Reliance in response to DMRD 922 initiatives. We did not use computer-processed data or statistical sampling procedures to conduct this portion of the overall audit. Appendix G lists organizations we visited or contacted. See Appendix F for the potential benefits associated with the audit.

Internal Controls

We evaluated internal controls to determine their adequacy for evaluating new facilities and equipment for DoD laboratories. The audit identified material internal control weaknesses as defined by DoD Directive 5010.38, "Internal Management Control Program," April 14, 1987. Controls were not effective to ensure that financial data submitted by DoD and the Army to the 1991 BRAC Commission were complete and accurate.

Amendments to Public Law 101-510, "Defense Base Closures and Realignments" subsequently imposed additional controls on the process. Specifically, provisions of law relating to BRAC actions, as amended by Public Law 102-590, December 31, 1992, now require that the Secretaries of the Military Departments and the heads of Defense Agencies submitting information to the Secretary of Defense or the Commission concerning the

closure or realignment of a military installation shall certify that such information is accurate and complete to the best of that person's knowledge and belief.

In view of the additional certification requirement governing future BRAC phases, we are not making recommendations in this report regarding internal controls. A copy of our final report will be provided to the senior official responsible for internal controls within the Office of the Secretary of Defense and the Army.

Prior Audits and Other Reviews

The General Accounting Office (GAO) has recently completed two reviews and has one other review in process that are related to the consolidation of DoD laboratories. In addition, the IG, DoD, has issued three related reports.

General Accounting Office Reviews. Report No. GAO/NSIAD-92-316 (OSD Case No. 9211), "Military Bases: Navy's Planned Consolidation of RDT&E Activities," August 20, 1992, concluded that the Navy's April 1991 estimated costs for military construction for the Navy laboratory consolidation had not changed materially since the Navy submitted its estimates to the BRAC Commission. The report also concluded that DoD is taking steps to reduce duplication among the Military Departments in common research areas through the Tri-Service Science and Technology Reliance Program. The report contained no recommendations.

Report No. GAO/NSIAD-93-150 (OSD Case No. 9391), "Military Bases: Army's Planned Consolidation of RDT&E Activities," April 29, 1993, concluded that the Army's April 1991 estimated costs for military construction for the Army Research Laboratory consolidation have increased slightly. The estimated savings from the Army consolidation will result from the elimination of 774 civilian positions. The report contained no recommendations.

Inspector General, DoD, Reports. Report No. 93-092, "Base Closure and Realignment Budget Data for the Naval Surface Warfare Center," was issued April 29, 1993. The audit objective was to evaluate increases in military construction project costs for base realignment and closure over the estimated costs provided to the BRAC Commission. This review concentrated on the realignments of portions of three facilities to Naval Surface Warfare Center, Dahlgren Division, and another activity from the Annapolis Detachment to the Philadelphia Detachment of the Carderock Division. The report concluded that project costs, at a combined cost of $36.5 million for two military construction projects, were overstated by at least $4.8 million. The audit questioned an additional $9.8 million. The report recommended that the Navy revise and resubmit military construction cost estimates and adjust allocated funding. In addition, the report recommended that the Navy establish procedures to validate military construction estimates before budget submissions. The Navy concurred with the recommendations, submitted revised cost estimates, and reduced the

funding allocations by $5.7 million. The Navy also issued procedures for the validation of military construction estimates. The report also recommended that the Comptroller, DoD, adjust Navy funding as appropriate. The Comptroller, DoD, concurred and reduced the funding.

Report No. 93-052, "Base Closure and Realignment Budget Data for the Naval Surface Warfare Center," was issued February 10, 1993. The objective of the audit was to evaluate increases in military construction project costs for BRAC over the estimated costs provided to the BRAC Commission. This audit focused on the realignment of two Naval Surface Warfare Center elements to Dahlgren, Virginia, and of another facility to Carderock, Maryland. The audit concluded that the costs for the Dahlgren project, estimated at $33 million, were overstated by $18.4 million and that the costs for the two Carderock projects, estimated at a total of $26.5 million, were understated by $7.5 million. The report recommended that the Navy revise and resubmit military construction cost estimates. The Navy concurred with the recommendations but nonconcurred with the $18.4 million reduction for the Dahlgren project. The Navy revised and resubmitted the military construction cost estimates for the projects. The Navy also reduced the cost for the Dahlgren project by $9.8 million and increased the Carderock project costs by $3.8 million.

Report No. 94-075," Advanced Materials Research, Development, Test and Evaluation Laboratories within DoD," was issued April 1, 1994. The overall audit objective was to determine whether redundant investment was being made by DoD in Advanced Materials and Electronic Devices Research and Development Laboratories. In the survey phase of the audit, we identified plans by the Army and Navy to build major new laboratory facilities and to procure new equipment for advanced materials research that may be unnecessary and redundant to existing DoD capability. The audit concluded that the DoD could save a significant portion of $160 million currently planned for new building construction and equipment by utilizing existing Air Force laboratory space and equipment. The report recommended that the Comptroller of the Department of Defense withhold the military construction funds for the identified projects until an independent and objective analysis has been completed that reevaluates the proposed new laboratories. The report also recommended that the Under Secretary of Defense for Acquisition and Technology task the Defense Science Review Board to study the need for those new facilities from an overall DoD perspective. The DoD Comptroller stated that a temporary withhold had been placed on MILCON funds and suggested that BRAC 95 would provide an appropriate opportunity to restudy the issues. The Director, Defense Research and Engineering nonconcurred because they felt that further study of the issue was not justified based on advice that BRAC 91 requires the moves to the designated locations. The Army nonconcurred stating that the report was factually inaccurate, badly flawed in logic, and the conclusions were legally objectionable. The Navy nonconcurred stating that the Navy has demonstrated a need for the planned materials facilities as part of the 91 and 93 BRAC process. The Air Force agreed that an independent assessment by a group of outside technical experts would be valuable.

Part II - Finding and Recommendations

New Construction of Microelectronics Laboratory

The Army Research Laboratory is in the process of realigning its research and development laboratories in accordance with a plan approved by the 1991 BRAC Commission. As a part of this process, the Army plans to build and equip a new laboratory facility for microelectronics (electronic devices) research and development at Adelphi that may be unnecessary and redundant to existing DoD capability. When the 1991 BRAC Commission approved the Army laboratory realignment plan, the Commission relied on studies and financial data originated by the Army that were incomplete and inaccurate. As a result, the Army will soon be negotiating contracts to spend more than $172 million for new building construction and equipment that appears to be unnecessary. The Army will also spend an additional $134 million for personnel-related expenses for this realignment that also appear unnecessary. By not considering the need for this new laboratory construction and other realignment-related expenses from a DoD perspective, the Army could unnecessarily expend $306 million.

Background

Pending completion of the study by the Federal Advisory Commission on Consolidation and Conversion of Defense Research and Development Laboratories (the Federal Advisory Commission Study), the 1991 BRAC Commission approved the Army's proposal to permanently close the existing Electronics and Power Sources Directorate of the Army Research Laboratory at Fort Monmouth, New Jersey, and relocate the laboratory to Adelphi. As a result of the 1991 BRAC Commission decision, the recently consolidated Army Research Laboratory is starting project 37098 to build a new microelectronics laboratory at Adelphi and to procure new laboratory equipment at a total projected cost of about $169 million (Appendix A). The new laboratory building would cost $115 million to construct and more than $54 million to equip.

Realigning the Electronic and Power Sources Directorate to Adelphi will transfer fuze-related research and development from Adelphi to another location. Moving the fuze-related research and development has resulted in another Army project to construct and equip a new fuze evaluation facility at Redstone Arsenal, Alabama (project 38057), at a total projected cost of $2.9 million.

The 1991 BRAC Commission realignment of the Electronics and Power Sources Directorate will transfer 214 positions from an existing facility at Fort Monmouth to the proposed new laboratory at Adelphi.

Army Studies and Justification

The Army plans to build a new advanced materials laboratory at Aberdeen Proving Ground; a new microelectronics laboratory at Adelphi; and a new fuze evaluation facility at Redstone Arsenal. The Army maintains that guidance and direction used as the basis to create the concept of a "flagship" Army Research Laboratory principally located at two sites, Aberdeen Proving Ground and Adelphi, relied upon the following studies and justifications:

- Army LAB 21 Study,
- Army Laboratory Consolidation Study, and
- technological synergism and critical mass.

We requested the Army to provide us with copies of their Army LAB 21 Study and Army Laboratory Consolidation Study. In response, the Office of the Deputy Assistant Secretary of the Army for Research and Technology provided us with a copy of a "Draft" LAB 21 Report and informed us that the Laboratory Consolidation Study did not exist per se. We subsequently found another reference to the Army Laboratory Consolidation Study. The Executive Summary of the Army Research Laboratory Implementation Plan, July 15, 1992, stated, "A secondary study, the Laboratory Consolidation Study, submitted to the Under Secretary of Defense (Acquisition) on 12 July 1990, provided the Army's planned actions to satisfy Defense Management Review Decision (DMRD) 922 and resource LAB 21 recommendations."

Accordingly, we requested a copy of the documents submitted to the Under Secretary of Defense for Acquisition on July 12, 1990. Responding to this request, the Army provided a copy of a Deputy Under Secretary of the Army (Operations Research) July 12, 1990, memorandum, "Request for Revisions to Service Plans in Response to DMRD 922," with numerous attachments. The Army identified this memorandum as the Army Laboratory Consolidation Study.

The Army Draft LAB 21 Report proposed creating the Combat Material Research Laboratory (subsequently renamed the Army Research Laboratory), to achieve a form of "technological synergism." Theoretically, this technological synergism would result in productivity enhancement flowing from a combination of quick assembly of creative blends of talent and technology, more effective communication and coordination, and ease of technology transfer. By providing procedures and quality facilities, the Army believes that a "critical mass" of talent fundamental to worthwhile research will result.

Although conceptually attractive, the Army has been unable to quantify and document tangible benefits that would result from forming this "critical mass" and "technological synergism."

After reviewing these Army studies, we concluded that Army proposals in the 1991 BRAC process were not supported by the study documents. Specifically, in its "Report to the Defense Base Closure and Realignment Commission," April 1, 1991, the Army recommended the creation of the Combat Material Research Laboratory at Adelphi and Aberdeen Proving Ground. Our review of the Draft LAB 21 Report disclosed that the study did not conclude that such a move was logical or cost-effective.

Cost and Savings

As detailed in the "1991 Defense Base Closure and Realignment Report to the President," the 1991 BRAC Commission relied on the economic justification submitted by the Army in its "Report to the Defense Base Closure and Realignment Commission" when it approved the Army's recommended realignment of Army laboratories (LAB 21 Study). Specifically, the 1991 BRAC Commission Report stipulated a realignment cost of $281.8 million. In addition, it stipulated annual savings of $44.7 million and a savings over the 6-year Future Year Defense Plan of $106 million, with a 4-year payback period.

In a footnote to its submission, the Army stated:

> The savings associated with this realignment are also included in Defense Management Report Decision (DMRD) 922. In order to implement this DMRD initiative, it must be approved by the Commission on Base Closure and Realignment.

However, when these costs and savings are compared to the Army submission on DMRD 922 to the "DoD Update Justification of Estimates for Defense Management Report Initiatives," April 1992, estimated military construction costs for implementing this same DMRD initiative are reported as being $15.1 million.

The source of the $44.7 million in personnel-related cost savings was not clearly specified in the Army "Report to the Defense Base Closure and Realignment Commission." We were told by the Army Research Laboratory that 774 administrative personnel spaces would be eliminated through the Army Research Laboratory consolidation. Elimination of 774 personnel spaces would ultimately result in annual administrative cost savings of $55.5 million. However, according to the Army Research Laboratory Implementation Plan, July 15, 1992, of these 774 personnel spaces, 469 spaces had already been eliminated before the Army Research Laboratory consolidation was ever started.

Accordingly, the annual administrative cost savings of $55.5 million claimed by the Army for the Army Research Laboratory consolidation should be reduced to an estimated $21.9 million. This same Army Research Laboratory Implementation Plan, July 15, 1992, specifies the total cost of the Army Research Laboratory implementation as being $406.9 million as opposed to the 1991 BRAC Commission Report realignment cost of $281.8 million. Therefore, if the total cost of $406.9 million specified in Army Research Laboratory Implementation Plan is compared with the adjusted savings specified in this same plan, the payback period would stretch beyond 18 years, as compared to the 4 years assumed by the 1991 BRAC Commission.

Regarding the new microelectronics laboratory at Adelphi, analysis of the Army Research Laboratory Implementation Plan indicated that only 12 personnel spaces would be eliminated. The reduction would result in estimated administrative cost savings of only approximately $860,000 per year. Accordingly, if the construction and equipment costs of $169 million for this new microelectronics laboratory yield savings of only $860,000 per year, the project cannot be defended on economic grounds and, in fact, a huge premium would be paid to achieve the previously mentioned "synergism."

Independent Review and Recommendations

Contrary to Army claims, the Federal Advisory Commission study does not support construction of a new microelectronics laboratory at Adelphi. Specifically, the Federal Advisory Study Commission recommended that the Army delay implementation of the Electronic Devices and Technology Laboratory at Adelphi pending completion of a study by the Defense Science Board Task Force on Microelectronics Research Facilities (Defense Science Board Task Force study). The Defense Science Board Task Force was charged with assessing the advantages and disadvantages of a single microelectronics research facility for all three Military Departments.

The Defense Science Board was created to advise the Secretary of Defense, the Deputy Secretary of Defense, the Under Secretary of Defense for Acquisition, and the Chairman of the Joint Chiefs of Staff on scientific, technical, manufacturing, and other matters of special interest to DoD. Defense Science Board membership consists of approximately 30 members selected for a 2-year term on the basis of their preeminence in the field of science and technology.

The Defense Science Board Task Force released its report in June 1992, concluding that a single DoD tri-service microelectronics facility should be capable of developing Defense-unique technologies. The study also concluded that one research facility serving the needs of all DoD was necessary and sufficient. In addition, the Defense Science Board concluded that the proposed Army investment to build additional corporate microelectronics research facilities is unwarranted.

Conclusion

The Army plans to build and equip three new laboratory facilities to implement the Army Research Laboratory in accordance with its LAB 21 Study. Total implementation cost including new construction and personnel-related costs is now estimated to be $415 million.

We believe that the Army Research Laboratory plans should be reevaluated from a DoD perspective before proceeding with the 1991 BRAC Commission approved realignment of the Electronics and Power Sources Directorate from Fort Monmouth to Adelphi. The Defense Science Board is an independent group of preeminent scientists that possess this necessary DoD perspective.

The Army Draft LAB 21 Study proposed creating the Army Research Laboratory to achieve a form of technological synergism. Theoretically, this technological synergism would result in productivity enhancement flowing from a combination of quick assembly of creative blends of talent and technology, more effective communication and coordination, and ease of technology transfer. Providing procedures and quality facilities will result in a critical mass of talent fundamental to worthwhile research. Although conceptually attractive, the Army has been unable to quantify and document tangible benefits from forming this critical mass and technological synergism.

Our analysis of the Army's Report to the 1991 BRAC Commission indicated that the financial data in this report were incomplete and inaccurate. The 1991 BRAC Commission subsequently relied on this inaccurate data when it granted conditional approval of the LAB 21 Study. Except for the notional concepts of technological synergism and critical mass, the Army has presented no justification for spending $306 million for a new microelectronics laboratory, new equipment, and personnel-related costs. Accordingly, the Army has not demonstrated any compelling reason for realigning the Electronics and Power Sources Directorate from Fort Monmouth to Adelphi.

Recommendations, Management Comments, and Audit Response

1. We recommend that the Under Secretary of Defense for Acquisition and Technology task the Defense Science Board to reevaluate the need for a new Army microelectronics laboratory from a DoD perspective and provide appropriate input into the 1995 Base Realignment and Closure process.

2. We recommend that the Comptroller of the Department of Defense withhold military construction funds for project 37098 until an independent and objective analysis has been completed that justifies the proposed new Army Microelectronics Laboratory.

Director, Defense Research and Engineering, Comments. DDR&E responded for the Under Secretary of Defense for Acquisition and Technology. DDR&E nonconcurred and stated that the 1991 BRAC Commission decision requires that the Electronic Technology and Devices Laboratory move to Adelphi. Therefore, further study of the issue does not seem justified.

Audit Response. We urge DDR&E to reconsider its position, which may be based on the premise that a 1991 BRAC decision cannot be altered even by the 1995 BRAC Commission. The wording of our recommendation has been altered to make it clear that any recommendation not to implement the 1991 BRAC plan must go to the 1995 BRAC Commission.

DDR&E has chartered a Defense Science Board Task Force on Defense Laboratory Management. The Defense Science Board Task Force has been charged with developing a strategy for restructuring and substantially reducing the size of the Defense laboratory infrastructure. The Defense Science Board Task Force was directed to consider all Defense laboratories that perform work ranging from basic research, through technology development and acquisition support, to in-service engineering and maintenance support (essentially all DoD efforts funded under category 6). The formation of this Defense Science Board Task Force and the charter assigned to it substantially satisfies our recommendation to the Under Secretary of Defense for Acquisition and Technology to reevaluate the need for this new Army microelectronics laboratory from a DoD perspective.

As part of the 1995 BRAC process, the Under Secretary of Defense has established six Joint Cross-Service Groups to examine areas with significant potential for cross-service impacts. One of these six specific Joint Cross-Service Groups was established to examine DoD laboratories. Policy issued for the 1995 BRAC specifically states that DoD Components may propose to the 1995 BRAC Commission changes to previously approved designated receiving base recommendations of the 1988, 1991, and 1993 BRAC Commissions. Proposed changes should be necessitated by revisions to force structure, mission or organization, or significant revisions to cost-effectiveness that have occurred since the relevant BRAC Commission recommendation was made. If the Army proceeds with plans to build a new microelectronics laboratory, this preemptive action would foreclose any meaningful recommendation resulting from an analysis by the Joint Cross-Service Group established for laboratories.

Comptroller of the Department of Defense Comments. The Comptroller of the Department of Defense stated that a temporary hold was placed on FY 1994 military construction funding, pending a ruling by the Office of the General Counsel, DoD, of the legal implications. The Comptroller also suggested that, if the proposed IG, DoD, audit reports are finalized and issued, the recommendation for the Comptroller to withhold funding be made contingent upon action by the Under Secretary of Defense for Acquisition and Technology to commission an independent study. The Comptroller suggested that the 1995 BRAC process would provide an opportunity to study this issue from a DoD perspective. The Comptroller further stated that the only effective way to modify the 1991 BRAC Commission's recommendations is to propose changes to the 1995 BRAC Commission.

Audit Response. We consider the comments from the Comptroller of the Department of Defense to be responsive. We agree that the 1995 BRAC process would provide an opportunity to study this issue on a comprehensive basis from a DoD perspective.

The Assistant Secretary of Defense (Economic Security) Comments. The Assistant Secretary of Defense (Economic Security) nonconcurred with the audit report, stating that the subject draft report had serious flaws, that these flaws were based on faulty logic on page 10 of the report, and recommending that these flaws be corrected before finalizing the report. Specifically, the Assistant Secretary stated that financial data submitted by the DoD and the Army to the 1991 BRAC Commission were not incomplete or inaccurate. The Assistant Secretary also asserts that the 774 personnel spaces will in fact be saved because the GAO made this statement in a report (GAO/NSIAD-93-150) and that all President's Budget BRAC justification books since FY 1993 have listed the savings at 774 positions. In addition, the Assistant Secretary concludes that based upon the most recent Army submission, a better payback picture now exists than was originally estimated.

Audit Response. The Assistant Secretary never states what the faulty logic on page 10 of the draft report is and does not provide substantive data to support the conclusions and recommendations in the response.

GAO Report GAO/NSIAD-93-150 contains the following statement with respect to the 774 civilian positions that would be eliminated by the proposed Army consolidation. "Manpower documents reviewed at the Army Research Laboratory support plans to reduce 774 positions." We also saw these documents during the course of our audit. However, the Army apparently neglected to mention that the personnel savings of 774 civilian positions were based on the number of spaces authorized to constituent elements comprising the Army Research Laboratory as of October 1, 1989. This means that the savings presented to the 1991 BRAC Commission were based on all personnel reductions to constituent elements of the Army Research Laboratory 11 months before even the concept of an Army Research Laboratory was briefed to the Deputy Secretary of Defense (August 1990), and 16 months before the Army Research Laboratory concept was approved by the Secretary of the Army (December 1990). Therefore, savings that were recognized by other Program Budget Decisions as much as 20 months before the Army submitted this analysis to the 1991 BRAC Commission were presented by the Army as being related to the investment in the Army Research Laboratory. It is simply absurd to couple savings already achieved as early as October 1989 to an investment that has yet to be made in FY 1994. But, the Army now acknowledges it did so in its 1991 BRAC Commission submission.

In its submission, "FY 1994 Budget Estimates and Justification Data Submitted to Congress for the 1991 BRAC" (Appendix E), the Army estimated the total cost of implementation of the Army Research Laboratory to be $415 million. In this same submission, the cost savings for these 774 civilian positions was estimated to be $120 million per year. The Army was queried by the IG, DoD, as to the amount of this cost increase and the increase in the associated savings. The Army never provided an explanation for these cost and savings estimates.

Instead, the Army subsequently revised its estimates for submission with its FY 1995 Budget Estimates and Justification Data Submitted to Congress for the 1991 BRAC Commission for implementation of the Army Research Laboratory and reduced total estimated costs to $365 million. Accordingly, because the Army has not provided information to document the changes, we feel that the proper baseline to be used in this context is the $415 million total implementation cost for the Army Research Laboratory as specified in the Army's FY 1994 Justification Submitted to Congress, March 1993.

Army Comments. The Army disagreed with the audit report, stating that it contained factual inaccuracies, badly flawed logic, and legally objectionable conclusions. The Army also stated that the report was "unencumbered by the facts" and the conclusions were "legally objectionable" because the report assumes authority to disregard binding recommendations of the 1988 and 1991 BRAC Commissions. The Army also stated that, if the report is finalized in its current form, it will severely reduce the Army's science and technology capability and seriously impair the Secretary of Defense's legal responsibility to implement the recommendations of the BRAC Commissions in a timely manner. The Army feels that resolving the issues and errors identified in the Army response is imperative, and that the corrections must be reflected in the final audit report. The Army further recommended that if resolution does not occur, the report should not be finalized and issued. The Army provided a point-by-point rebuttal to the subject draft audit report. The full text of the Army comments is in Part IV.

Audit Response. We stand by our findings and recommendations. The Army submitted nothing in the form of information that could be verified and audited that would demonstrate factual inaccuracies in the draft report. Other than an opinion that the draft report was flawed in logic, the Army offered no evidentiary matter to contradict the report on substantive matters.

Regarding the Army claim that the draft report was legally objectionable, the Army may have misunderstood the draft report recommendation as assuming the 1991 BRAC decisions could be altered without recourse to the 1995 BRAC Commission. This was not our intent and the wording in the recommendation has been clarified. In any event, we agree with the Army Office of the Judge Advocate General stipulates in a November 24, 1993, letter page 6, paragraph 4, "If circumstances warrant, the SECDEF may submit additional recommendations to the 1995 Commission to revise the earlier Commissions' recommendations." The Army Office of General Counsel concurred with these comments in a November 29, 1993, letter that specifically stated:

> The DoD IG may well feel that the BRAC 91 recommendations regarding laboratory realignments should be revisited. The DoD IG however, should include in any final reports the warning that the decried realignments must take place unless DoD undertakes to seek their modification in BRAC 95.

We do not disagree with either legal opinion and indeed we agree that the entire concept of the Army Research Laboratory should be revisited by the 1995 BRAC Commission. However, to preclude preemptive actions on the part of the Army to make moot any recommendations to the 1995 BRAC Commission,

we continue to recommend that the Comptroller of the Department of Defense withhold military construction funds for these projects until the need for a new Army microelectronics laboratory is evaluated by the Defense Science Board and the 1995 BRAC Commission Joint Cross-Service Group for laboratories.

In addition, in a January 7, 1994, letter regarding the 1995 BRAC Commission, the Deputy Secretary of Defense stressed the need to emphasize cross-service utilization of common support assets. Policy guidance attached to the January 7, 1994, letter concerning changes to previous recommendations specifically states:

> DoD components may propose changes to previously approved designated receiving base recommendations of the 1988, 1991, and 1993 Commissions provided such changes are necessitated by revisions to force structure, mission or organization, or significant revisions to cost effectiveness that have occurred since the relevant commission recommendation was made.

See Appendix B for the summary of the Army's point-by-point comments and our audit response.

Navy Comments. The Navy nonconcurred with the audit report finding and recommendations, stating that the Defense Science Board Task Force released its report in June 1992 and that it was a thorough study. The report recommended one applications facility per Military Department and one corporate science and technology laboratory facility to serve all Military Departments and Defense agencies, specifically identified as the Naval Research Laboratory, Washington, D.C. The Navy concludes that these recommendations are still valid.

Audit Response. We agree with the Navy conclusion that the report prepared by the Defense Science Board Task Force recommended one applications facility per Military Department and one corporate science and technology laboratory facility to serve all Military Departments and Defense Agencies. However, the Navy response neglects to mention that this same report concluded that "the proposed Army investment to build additional corporate microelectronics research facilities is unwarranted."

In a November 22, 1992, letter to the Executive Director of the Defense Science Board, this conclusion was amplified by the chair of the 1992 Defense Science Board Task Force on Microelectronics Research Facilities. Specifically, the letter states that:

> the Task Force noted that the present Army Applications Microelectronics Research Facility at Fort Monmouth is very closely tied to the Communications and Electronics Command, the principal Army microelectronics user. It is now performing the applications function.

The same letter concludes:

> In light of the substantial cost of establishing a new microelectronics research facility, the Army's plan to move its microelectronics

> operations to Army Research Laboratory, away from the primary Army microelectronics user, is not consistent with the Task Force's recommendations.

In a January 21, 1994, letter to the Deputy DDR&E, the task force chair reinforced the conclusions in his letter of November 22, 1992. Referring to the November 22, 1992, letter, he states that: "I don't see that there is much room for misinterpretation of the message that the Army's new facility was not what the Task Force had in mind."

Air Force Comments. The Department of the Air Force did not comment on legal or contractual issues regarding the proposed new Army microelectronics laboratory. The Air Force did, however, agree that an independent assessment by outside technical experts, such as the Defense Science Board, would be of value in technically assessing unique aspects of laboratory facility utilization. The Air Force recommended that, if an additional assessment of materials laboratories is conducted, a "two laboratory option" alternative be considered. The Air Force explained that the two laboratory alternative would consist of a joint-Services air and space materials and processes laboratory led by the Air Force at Wright Laboratory and the second facility would be a joint Services land and sea materials and processes laboratory led by the Army or Navy at a site or sites to be determined. The Air Force also stated that more value can be obtained from a more vigorous application of the tri-service Project Reliance process to total program content, and also to identify and resolve major facility and equipment issues.

Audit Response. We agree that an independent assessment by outside technical experts, such as the DSB, would be valuable in evaluating the unique aspects of laboratory facility utilization. We also agree with the Air Force that much more value can be obtained from a more vigorous application of a joint cross-service process to identify and resolve major facility and equipment issues as well as total program content.

Part III - Additional Information

Appendix A. Army Research Laboratory Military Construction Project for a Microelectronics Laboratory

Project No. 37098
Adelphi, Maryland

Proposed Area	Square Feet	Proposed Cost
Clean Room/Special Labs	115,000	$31,800,000
General R&T[1] & H6 Labs	75,000	14,730,000
Clean Room & Special Lab Support	25,000	2,750,000
Clean Room & Spec Lab S&E[2] Office	55,000	6,960,000
Lab Renovation	145,000	6,460,000
Parking Structure	224,000	6,429,000
Office Renovation	55,000	1,540,000
Admin. Office w/Shielding	90,000	11,530,000
H/C[3] Plant Expansion	5,000	1,900,000
Building Code Deficiencies	31,000	240,000
High Bay Building Expansion	13,000	1,440,000
Chem Waste Treatment Facility	10,000	6,290,000
HAZMAT[4] Emerg Response Ctr.	6,000	835,000
IDS[5] Installation		780,000
EMCS[6]		3,348,000
Building Information Systems		2,439,000

[1] Research and Technology
[2] Science and Engineering
[3] Heating and Cooling
[4] Hazardous Material
[5] Intrusion Detection System
[6] Energy Monitoring and Control System

Appendix A. Army Research Laboratory Military Construction Project for a Microelectronics Laboratory

Proposed Area	Square Feet	Proposed Cost
Supporting Facilities		
Electric Service		553,000
Water, Sewer, and Gas		283,000
Steam and/or Chilled Water Distribution		164,000
Paving, Walks, Curbs, and Gutters		1,077,000
Storm Drainage		48,000
Site Improvements		892,000
Information Systems		381,000
Other		
Contingency at 5 percent		5,617,000
Supervision, Inspection, and Overhead at 6 percent		6,509,000
Subtotal		$114,995,000
Installed Equipment - Other Appropriations		53,799,000
Total		$168,794,000

Appendix B. Summary of Army Comments and Audit Response

Management Comments on the Executive Summary. The Army strongly disagrees with the statements made in the Executive Summary. The Army stated that the Army Research Laboratory was officially formed in October 1992 after years of study by DoD and the Army's research and development community by both internal and external groups. The most recent studies, LAB 21, the 1991 BRAC Commission, and the Federal Advisory Commission specifically endorsed the concept of a consolidated, multi-disciplinary, "world class" Army Research Laboratory.

Furthermore, the Defense Science Board Task Force recommended that each Military Department should maintain its own applications-oriented research facility.

The Army Research Laboratory is the corporate laboratory for the Army, providing a research capability to enable the Army to meet the warfighting challenges of the future battlefield. Such a corporate laboratory must have a strong in-house research capability with a critical mass of work in key technology areas. Electronics and materials are fundamental technologies and constitute core competencies for the laboratory. State-of-the-art research facilities and equipment must be made available to attract and retain a highly competent and dedicated workforce. The Army is committed to the planned investment in the Army Research Laboratory.

Audit Response. The Army never specifically states with which statements it disagrees.

On October 7, 1993, representatives of the IG, DoD, met with the Deputy Under Secretary of the Army (Operations Research) and the Deputy Assistant Secretary of the Army for Research and Technology, to discuss questions that had arisen during the audit. Before this meeting, the IG, DoD, representatives provided a detailed list of written questions to be discussed. In a written response to these questions provided during the meeting, the Army specifically wrote that, "The draft LAB 21 report is the 'only' study that is the foundation for the establishment of the 'flagship' Army Research Laboratory." The Army further wrote that the LAB 21 "report itself was not finalized, however, the main concept of establishing a corporate flagship research laboratory carried on up to and including inclusion in BRAC 91." Accordingly, we believe the Army statement that both internal and external groups have studied the Army Research Laboratory is inconsistent with the response given to the IG, DoD, at the meeting on October 7, 1993.

We also believe it is important to recognize that the 1991 BRAC Commission relied on incomplete, inaccurate, and misleading information supplied by the Army when it endorsed the concept of the Army Research Laboratory. In addition, the Federal Advisory Commission study endorsed only the concept of a consolidated, multi-disciplinary, "world class" Army Research Laboratory. The Federal Advisory Commission did not conduct an in-depth feasibility study considering all elements involved with a decision to create one.

In addition, while we agree that the Defense Science Board Task Force recommended that each Military Department should maintain its own applications-oriented research facility, the Army neglected to mention that the Task Force further recommended that the applications-oriented facility should be chosen from an existing facility. The Defense Science Board Task Force also specifically concluded that the proposed Army investment to build additional corporate microelectronics research facilities is unwarranted.

Management Comments on Part I, Background. The Department of the Army nonconcurs with page 2, paragraph 2, that reads: "During FY 1991, the Army operated 44 laboratories, centers, and institutes that employed 30,500 military and civilian personnel. Total Army funding for those laboratories in FY 1993 was $6.0 billion." The Army feels the paragraph is incorrect and misleading and provided additional data for FY 1993 that states: "The Army currently operates 21 laboratories, centers, and institutes that employs (sic) 29,000 military and civilian personnel. Total funding for these activities was approximately $4.0 billion in FY 1993.

Audit Response. We have revised our audit report on page 2, paragraph 2, to reflect the FY 1993 data provided by the Army.

Management Comments on Part I, Background. The Department of the Army nonconcurs with page 2, paragraph 3, the last sentence which reads:

> ". . . Concerned about perceived risks associated with this approach, the Deputy Secretary of Defense approved implementation of Project Reliance, even though estimated savings were significantly higher with the second alternative."

The Army recommends that this sentence be either deleted or revised in accordance with suggested Army wording. The Army rationale for making this suggestion is that the sentence is misleading because it discusses only part of the reasoning behind the selection of Project Reliance and that total savings for Project Reliance were higher than for the Defense Science, Engineering, and Test Agency that was proposed as an alternative.

Audit Response. The briefing charts presented to the Deputy Secretary of Defense on August 22, 1990, detail $2.3 billion in total potential savings from FYs 1991 through 1995 for the first alternative, Project Reliance. The estimated potential savings would result from field activity restructuring and streamlining that would be accomplished under either the first alternative or second alternative (Defense Science, Engineering, and Test Agency). These

same charts indicate that implementation of the second alternative would result in an additional $30 million to $115 million savings by reducing 1,863 headquarters management positions that would not be eliminated through implementation of the first alternative.

Management Comments on Part I, Background. The Department of the Army also nonconcurs with page 2, paragraph 4 that states: "To expedite implementation of its laboratory consolidation plans and avoid "bureaucratic opposition," the Army chose to present its recommendations to the 1991 Base Closure and Realignment (BRAC) Commission. In the April 22, 1991, issue of Defense News, a senior Army research official was quoted as saying, "The situation we are faced with is a major reorganization trying to take place. If we fold the moves under base closure, we can capitalize on the fact that it becomes law." The Army believes that this statement is inaccurate and misleading, and the Army strongly disagrees with the innuendo of the paragraph.

Audit Response. These are direct quotes from the April 22, 1991, issue of Defense News and are pertinent to the audit report, but we have noted the Army demurral.

Management Comments on Part I, Background. The Department of the Army also nonconcurs with the statement, ". . .The 1991 BRAC Commission approved...." The Army believes this paragraph should be omitted because it refers to Public Law 102-190 that requires the IG, DoD, to investigate each military construction project with a significant difference between the requested amount and the estimate for the project. The Army contends that this law does not apply to 1991 BRAC Commission actions.

Audit Response. The Army has erred in its contention that Public Law 102-190 does not apply to 1991 BRAC Commission actions. Specifically, Public Law 102-190 prescribes that the IG, DoD, must evaluate significant increases in military construction costs over the estimated costs provided to the BRAC Commission and send a report to the congressional Defense committees. Since April 1992, the IG, DoD, has prepared at least 15 reports concerning 1991 BRAC Commission actions.

Management Comments on Part I, Background. The Army nonconcurs with the statement, "Three laboratory construction projects are directly related to the Army Research Laboratory...." The Army believes that for purposes of accuracy and completeness, this paragraph should be restated.

Audit Response. We did not specifically detail what Army entity was going to build the new facility at Redstone Arsenal. As a result of the Army Research Laboratory consolidation and divestiture, a new fuze evaluation facility will be built at Redstone Arsenal and this point was clarified in our final audit report.

Management Comments on Internal Controls. The Army nonconcurs with the paragraphs concerning internal controls and requests that we delete them. The Army strongly disagrees with the report's contention that internal controls were not effective to ensure financial data submitted to the 1991 BRAC Commission were complete and accurate. The Army believes that this

contention is completely unsubstantiated, as the report does not identify that any specific internal control weaknesses existed. The Army also states that the report does not identify what questionable data were submitted to the 1991 BRAC Commission.

Audit Response. We respond in detail to the Army nonconcurrence regarding internal control weaknesses and the submission of misleading data on page 30 of this appendix, which discusses the Army nonconcurrence with the cost and savings. We believe that our response substantiates numerous internal control weaknesses.

Management Comments on Prior Audits and Other Reviews. The Army wants to add a reference to the "Federal Advisory Commission on Consolidation and Conversion of Defense Research and Development Laboratories - Report to the Secretary of Defense," September 1991. The Army also desires us to quote from the findings of the Federal Advisory Commission.

In addition, the Army requests that we include in this section Army Audit Agency Report No. SR 92-702, "Base Realignment and Closure Construction Requirements," August 12, 1992. The Army states that Army Research Laboratory adjusted requirements not supported by the Army Audit Agency.

Audit Response. We feel that the overall Army nonconcurrence as stated above is disingenuous. Specifically, we did consider the "Federal Advisory Commission on Consolidation and Conversion of Defense Research and Development Laboratories - Report to the Secretary of Defense," September 1991, and we specifically refer to it in Part II, Independent Review and Recommendations. Contrary to Army claims, the Federal Advisory Commission study does not support construction of a new microelectronics laboratory at Adelphi. To the extent that the study does support consolidation of Army laboratories, it does so on a conceptual basis, not on the basis of a detailed study that would consider, among other things, the cost of implementation. In any case, the Federal Advisory Commission study recommended that the Army delay implementation of the Army Research Laboratory Adelphi laboratory facility pending completion of a Defense Science Board Task Force study. Subsequently, this Defense Science Board Task Force concluded that the proposed Army investment to build additional microelectronics research facilities was unwarranted.

We also obtained and reviewed Army Audit Agency Report No. SR 92-702. The audit objective was to review the adequacy of support for military construction projects related to realignments involving eight installations from the 1991 BRAC Commission. Included among the eight installations were the Adelphi Laboratory Center and Aberdeen Proving Ground. At Aberdeen Proving Ground, the Army Audit Agency reviewed one project estimated to cost $66.4 million. The Army Audit Agency found that $54.7 million (82 percent) of the estimated costs was adequately supported, $2.9 million (4 percent) was not adequately supported, and $8.8 million (13 percent) was inappropriate for BRAC funding. The Army Audit Agency also found that $20.6 million (31 percent) in costs should have been included that were not.

At the Adelphi Laboratory Center, the audit found that, on a project reviewed with a total estimated cost of $126.3 million, $10 million (8 percent) of the cost was not adequately supported and $15.2 million (12 percent) of the cost was inappropriate for BRAC funding. Specifically, the Army Audit Agency concluded that a proposed $7.2 million parking structure included as part of the project was unnecessary. The DD Form 1391 enclosed with the Army's FY 1994 "Justification Submitted to Congress," March 1993, detailed this same parking structure as a part of the Adelphi construction project. This directly contradicts the Army claim that "where ARL requirements were not supported by the AAA, the ARL adjusted the cost and square footage on the DD Form 1391 in accordance with the AAA recommendations."

We also obtained and reviewed Army Audit Agency "Review of DMRD 922 Implementation: Memorandum Report to Assistant Secretary of the Army (Financial Management)," March 30, 1992. The audit objective was to evaluate DMRD 922 savings and a baseline for measuring these savings. The audit found that the savings calculations provided by the Army for DMRD 922 were not supported. The audit also found that only a small portion of the costs associated with implementation of DMRD 922 had been reported.

Management Comments on Prior Audits and Other Reviews. The Army nonconcurs with the statement, "We were then advised that this memorandum with attachments constituted the Army Research Laboratory Consolidation Study." The Army suggests that we should revise this sentence to read as follows: "We were then advised that "Mr. Hollis' memo is simply a summary and maturation of the concept and has never been referred to as the 'Laboratory Consolidation Study' by the Department of the Army."

Audit Response. In the statement made in our draft report we reiterated exactly what we were told by the Army with reference to this memorandum written by Mr. Hollis. In a memorandum dated September 15, 1993, (Appendix C), the Army specifically states:

> Attached is the study you requested sometime back entitled the Laboratory Consolidation Study. We have determined that the attachment is the correct document. You will note that the title is otherwise stated, which was a prime cause for the difficulties in locating this document. I have verified with separate Army sources, that this document is that which is referenced in the Army Research Laboratory Implementation Plan, dated July 1992. I apologize for the confusion and delay in locating this study.

Attached to this memorandum is the document dated July 12, 1990, and signed by the Deputy Under Secretary of the Army (Operations Research) whose subject was "Request for Revisions to Service Plans in Response to DMRD 922." The Army has specifically referred to an Army Laboratory Consolidation Study on at least two occasions.

Management Comments on Prior Audits and Other Reviews. The Army also nonconcurs with page 10, paragraph 2, that states "By providing procedures and quality facilities, the Army believes that a 'critical mass' of talent fundamental to worthwhile research will result." The Army believes this should be rewritten in accordance with an Army suggestion for purposes of accuracy and completeness.

Audit Response. Our statement is factually correct and accurate. The Army never offers evidence or documentation purporting to quantify tangible benefits resulting from critical mass and technological synergism. In our draft audit report, we specifically addressed recommendations of the Federal Advisory Commission, the Defense Science Board, and DoD. We reviewed these documents thoroughly and did not find in them the justification that the Army claims.

Management Comments on Prior Audits and Other Reviews. The Army nonconcurs with page 10, paragraph 3, that states "After reviewing these Army studies, we concluded that Army proposals to the 1991 BRAC Commission were not supported by the study documents." The Army states that a briefing to the Federal Advisory Commission outlining the methodology and various options was provided to the IG, DoD, as part of the October 8, 1993, response to the IG's interim set of questions. The Army states that its decision to establish the Army Research Laboratory at Adelphi and Aberdeen Proving Ground is clearly the most logical and cost effective solution and is well documented in the referenced briefing.

Audit Response. Our statement is factually correct. With respect to the briefing provided to the Federal Advisory Commission, it is important to summarize the findings of the commission with respect to the proposed construction. Specifically, on page 11 of its September 1991 report, the Federal Advisory Commission stated that, with respect to the Army, "The large capital investment planned for a new Army microelectronics research facility at the Combat Material Research Laboratory may not be warranted." The Federal Advisory Commission also recommended that "An independently appointed review group should assess the advantages and disadvantages of a single microelectronics research facility for all three Services. If a single facility is a viable solution, consideration should be given to a Government-Owned, Contractor-Operated Laboratory."

Management Comments on Cost and Savings. The Army made numerous comments and suggestions.

First, the Army nonconcurs with page 10, paragraph 4, that states:

> "As detailed in the '1991 Defense Base Closure and Realignment report to the President, the 1991 BRAC

> Commission relied on the economic justification submitted by the Army in its "Report to the Defense Base Closure and Realignment Commission" when it approved the Army's recommended realignment of Army Laboratories (LAB 21 Study). Specifically, the BRAC Commission report stipulated a realignment cost of $281.8 million."

The Army's rationale for nonconcurrence is based on the Army's 1991 BRAC Commission report to the Secretary of Defense dated April 1, 1991 that clearly showed the Army's estimate for the establishment of Army Research Laboratory to be approximately $318 million. The Army states that, in response to IG, DoD questions submitted before the October 7, 1993 meeting, that the Army did not know why the cost figures had changed.

The Army further nonconcurs with page 11, paragraph 1, that states:

> "However, when these costs and savings are compared to the Army submission on DMRD 922 to the "DoD Update Justification of Estimates for Defense Management Review Initiatives," April 1992, estimated military construction costs for implementing this same DMRD initiative are reported as being $15.1 million."

In the Army's opinion, this statement should be deleted because no military construction costs should be associated with DMRD 922, because the basis for the 922 savings is productivity improvements and not the 1991 BRAC Commission action to establish the consolidated Army Research Laboratory.

The Army also nonconcurs with page 11, paragraph 2, last sentence that states "However, according to the Army Research Laboratory Implementation Plan,' July 15, 1992, of these 774 personnel spaces, 469 had already been eliminated before the Army Research Laboratory consolidation was ever started." The Army feels this sentence should be deleted, because the baseline for the Army Research Laboratory personnel reductions was the number of spaces authorized to the constituent elements that comprised Army Research Laboratory as of October 1, 1989, unadjusted for any previously approved Program Budget Decision decreases.

The Army further nonconcurs with page 11, paragraph 3, that begins "Accordingly, the annual administrative cost savings of $55.5 million claimed by the Army for the Army Research Laboratory consolidation should be reduced to an estimated $21.9 million . . . ."

The Army nonconcurs with page 11, paragraph 4, that concludes as follows: "Accordingly, if the construction and equipment costs of $169 million for this

new microelectronics laboratory yield savings of only $860,000 per year, the project cannot be defended on economic grounds and, in fact, a huge premium would be paid to achieve the previously mentioned "synergism." The Army feels it is inappropriate to simply look at anticipated Electronic Technology Devices Laboratory-related eliminations when performing any type of economic analysis of Army Research Laboratory.

Audit Response. The 1991 and 1993 BRAC Commissions evaluated proposed realignments and closures based on three major criteria: military value, return-on-investment, and economic and environmental impacts.

o Military value is concerned with current and future mission requirements and the impact of operational readiness of the Department of Defense's total force; the availability and condition of land, facilities, and associated airspace at both the existing and potential receiving locations; the ability to accommodate contingency, mobilization, and future total force requirements at both the existing and potential receiving locations; and the cost and manpower implications.

o Return-on-investment considers the extent and timing of potential costs and savings, including the number of years, beginning with the date of completion of closure or realignment, for the savings to exceed the costs.

o Economic impact on local communities considers the ability of both the existing and potential receiving communities' infrastructures to support forces, missions, and personnel and considers the environmental impact.

We are enclosing as Appendix D page G-27 of Change 1 of the Army's Report to the 1991 BRAC Commission, dated April 19, 1991, for the purpose of clarifying our response to the Army's nonconcurrences. Appendix D is the Army's return-on-investment submission to the 1991 BRAC Commission regarding the Army Research Laboratory.

We have evaluated this document as a return-on-investment calculation submitted for the purpose of obtaining $318 million in funding to invest in creation of the Army Research Laboratory. Accordingly, this Army submission should satisfy at least fundamental concepts of accuracy and completeness and the presentation should be fair and balanced. It was not. In fact, the Army presentation to the 1991 BRAC Commission was inaccurate, incomplete, and misleading.

Not all costs known to the Army at the time were included in the analysis. Approximately $81 million in personnel-related expenses were omitted. In addition, the Army claimed savings from 469 personnel spaces that had already been eliminated before the Army submitted its presentation to the DoD for the 1991 BRAC Commission.

The Army established a baseline of October 1989 for calculating savings resulting from elimination of personnel slots. All the personnel savings presented by the Army in its return-on-investment analysis were not related to the proposed investment in the Army Research Laboratory. As stated on page B-4 of the Army Research Laboratory Implementation Plan, July 15, 1992, 469 position eliminations had been assessed to laboratory command and non-laboratory command elements.

As detailed on page B-5 of the Army Research Laboratory Implementation Plan, the 469 positions that were eliminated resulted from a series of Army decisions made between September 1986 and January 1992. Therefore, 305 positions are the only ones that will be eliminated as the direct result of the proposed Army Research Laboratory construction projects. Nevertheless, the Army knowingly presented the savings associated with these 469 position eliminations as being directly related to Army Research Laboratory construction. The basis for the Army savings calculations were also not disclosed to the 1991 BRAC Commission.

The inconsistency of the Army analysis is apparent when the Army return-on-investment submission to the 1991 BRAC is compared to Justification Data Submitted to Congress for DoD Base Realignment and Closure, Account II, Army, March 1993 (Appendix E). Specifically, in its submission to the 1991 BRAC, the Army included as savings $77 million identified as being related to BRAC I (the 1988 BRAC Commission); $15 million in Funded Military Construction Army; and $11 million in revenues to be realized in 1997 from land sales. However, in its budget submission of March 1993, the Army does not mention savings from either the 1988 BRAC Commission recommendations or funded Military Construction Army. Revenues from land sales however, increase from $11 million to $30 million.

The Army was also inconsistent in its reporting on DMRD 922 to the "DoD Update Justification of Estimates for Defense Management Review Initiatives," April 1992. Specifically, the Army reported only $15.1 million of military construction costs associated with DMRD 922, even though the Army estimated over $246 million in military construction costs in its 1991 BRAC Commission submission. However, in its nonconcurrences, the Army now claims no military construction costs should be associated with DMRD 922, because the basis for the DMRD 922 savings is productivity improvements and not the 1991 BRAC Commission action to establish the Army Research Laboratory.

Army inconsistency is further demonstrated when one considers the Army return-on-investment analysis (Appendix D) where the Army states that "The savings associated with this realignment are also included in Defense Management Report Decision (DMRD) 922. In order to implement this DMRD initiative, it must be approved by the Commission on Base Closure and Realignment."

However, as the Army states in its nonconcurrences, as outlined in the paragraph above, the basis for DMRD 922 savings is not the 1991 BRAC Commission action to establish the Army Research Laboratory. The Army positions in this regard are contradictory. The savings outlined in the Army return-on-investment calculations either are or they are not related to the Army Research Laboratory and DMRD 922.

If the savings presented in the Army return-on-investment submission (Appendix D) were related to the Army Research Laboratory and DMRD 922, the Army should also have recognized the implementation costs of the Army Research Laboratory and reported them in its submission to the "DoD Update Justification of Estimates for Defense Management Review Initiatives," April 1992. If the savings were not related to the Army Research Laboratory and DMRD 922, the Army should not have made this statement in its return-on-investment submission to the 1991 BRAC Commission.

The Army's inconsistent reporting over time is further demonstrated by comparing its statement that productivity improvements were the basis for the DMRD 922 savings with its current position that the 774 position spaces are the source of the personnel savings reported to the 1991 BRAC Commission. Army documentation show that 469 of the personnel spaces were eliminated by virtue of a series of Program Budget Decisions unrelated to creation of the Army Research Laboratory.

Additional inconsistency is revealed when the total cost estimates for implementing the LAB 21 (Army Research Laboratory) are examined. These cost estimates have ranged from a low of $92 million to a high of $415 million as discussed below.

Specifically, the first submission to the 1991 BRAC Commission by the Army dated April 1, 1991, specifies a total cost of $348 million. However, the April 1991 DoD submission to the 1991 BRAC Commission detailed a total cost for implementation of only $92 million.

Subsequently, in change 1 to its 1991 BRAC Commission submission, dated April 19, 1991, the Army revised its total cost estimate to $334 million. In any case, in its BRAC Report to the President, the 1991 BRAC recognized total costs of $281.8 million for implementation of the Army Research Laboratory.

When the Army submitted its FY 1994 Budget Estimates and Justification Data Submitted to Congress for the 1991 BRAC recommended implementation of the Army Research Laboratory, the total cost was then estimated to be $415 million and the annual savings from these same 774 position eliminations was then estimated to be $120 million.

In October 1993, we queried Army officials about the amount of the increase and the associated savings. The Army subsequently revised its estimates in the FY 1995 Budget Estimates and Justification Data submitted to Congress for the implementation of the Army Research Laboratory. The Army reduced total estimated costs to $365 million and estimated savings to $55 million per year.

Despite multiple requests from the IG, DoD, the Army has yet to provide detailed information to support these changes. The IG, DoD, therefore believes the proper baseline is the $415 million total implementation cost for the Army Research Laboratory reported by the Army in its FY 1994 "Budget Estimates and Justification Submitted to Congress," March 1993.

Specifically, during the course of our audit, we told Army officials that Army documents showed the proposed microelectronics laboratory at Adelphi was designed and configured to be a "corporate research laboratory" not an applications laboratory, as was claimed by the Army. We also pointed out to the Army numerous pieces of equipment that the Army was planning to procure for their proposed advanced materials laboratory at Aberdeen Proving Ground that were redundant to equipment already owned by the Air Force, which records showed to be underutilized.

The Army submission to the 1991 BRAC Commission did not match costs and savings properly. Army officials acknowledged that the savings (revenues) associated with the 1991 BRAC Commission submission did not match the costs (investment) presented.

Specifically, as the Army stated in its nonconcurrence, the personnel savings were based on the number of spaces authorized to constituent elements comprising the Army Research Laboratory as of October 1, 1989. This means that the savings presented to the 1991 BRAC Commission included all unrelated personnel reductions to constituent elements of the Army Research Laboratory; reductions approved in other Program Budget Decision's 11 months before the Army Research Laboratory concept was briefed to the Deputy Secretary of Defense (August 1990), and 16 months before the Army Research Laboratory concept was approved by the Secretary of the Army (December 1990).

The Army Audit Agency "Review of DMRD 922 Implementation: Memorandum Report to Assistant Secretary of the Army (Financial Management)," March 30, 1992, found that the savings calculations provided by the Army for DMRD 922 were not supported. Specifically, the Army Audit Agency stated:

> "When computing the savings, they assumed that the Army would receive a 1.5 percent gain in productivity from implementing 922. We requested documentation to support the 1.5 percent productivity gain, but responsible personnel told us that it was their best estimate and support wasn't available."

In this same report, the Army Audit Agency also states, "During discussions, personnel from the Office of the Assistant Secretary informed us that they couldn't achieve the savings called for in DMR 922 based solely on LAB 21 actions."

In March 1992, the Army Audit Agency commented on the baseline used to calculate DMR 922 savings as follows:

> "We also asked DA financial management personnel about the proponent's using total workforce costs as their baseline. They expressed concern over using the costs for the total research, development, test, and evaluation workforce as the baseline, when only the workforce in the laboratories and research areas would be affected by the DMR. They felt that only 40 percent of the total workforce costs were in laboratories and, therefore, shouldn't have been included in the DMR."

In numerous documents and Army presentations discussed above, the Army stated that elimination of 774 personnel spaces was the source of the personnel savings that would result from implementation of the Army Research Laboratory. The Army estimate of annual savings resulting from these eliminations was calculated at $55.5 million.

Without explanation, in its budget submission of March 1993 (Appendix E), the Army now calculates the savings to be $120 million per year from elimination of the same 774 personnel spaces.

We pursued this question during our October 7, 1993, meeting with the Army. We specifically requested them to provide the source and calculations supporting the $120 million savings figure. In a follow-up telephone call to the designated point-of-contact, we were advised that an explanatory letter would be sent to us by the end of that week. As of March 25, 1994, no explanatory letter has been received.

All of the above calls into question the Army return-on-investment analysis (Appendix D) submitted to the 1991 BRAC Commission. For these reasons, we find the submission was incomplete, inaccurate, and misleading. In Part I of our report, we reported that significant internal control weaknesses contributed to this problem.

Management Comments on the Independent Review and Recommendations. The Army nonconcurs with page 12, paragraphs 2 and 3, "The DSB was created...." and "The DSB Task Force..." The Army feels these paragraphs should be deleted, because the Army believes that the Defense Science Board did not reach this conclusion and that this statement was not made in the Defense Science Board report.

Audit Response. We stand by the statement made in our draft report. In the cover letter to the final report of the Defense Science Board submitted to the DDR&E June 30, 1992, the Chairman of the Defense Science Board concludes;

> "a single DoD Tri-Service corporate microelectronics facility should be capable of developing defense unique technologies and alleviate the deficiencies in industry and academia. Also, since there exists a spectrum of microelectronics research which is service unique and system specific, each military department should have a single applications-oriented microelectronics facility selected from an existing MRF... (emphasis added)."

On page 20 of the final report of the Defense Science Board, the Defense Science Board further states; "The Task Force concludes that investment to build additional corporate microelectronics research facilities is unwarranted."

Management Comments on the Conclusions. The Army nonconcurs with page 12, paragraph 5, "We believe that the Army Research Laboratory plans should be reevaluated..." The Army believes this paragraph should be deleted, because any further delay in the construction of Army Research Laboratory facilities will jeopardize DoD and specifically the Army from meeting 1991 BRAC Commission personnel moves and facility closure deadlines, create confusion in Army laboratories, cause a loss of efficiency during transition and cost the taxpayers unnecessarily. The Army feels that another Defense Science Board study would be redundant, unnecessary, and wasteful. The Defense Science Board has already reviewed the DoD's microelectronics research from a DoD perspective, and the Army has fully complied with the DSB findings.

Audit Response. We strongly disagree with the Army contention that it has complied with the Defense Science Board findings. As previously stated in our audit response, if indeed the Army fully complied with the Defense Science Board findings, we believe the Army would fully concur with our recommendations in this audit report and stop planning for construction of this new facility at Adelphi.

Management Comments on the Conclusions. The Army nonconcurs with page 12, paragraph 6, "The Army Draft LAB 21 Study..." The Army states that this paragraph suggests consolidations of research functions is an ineffective means of increasing effectiveness and that this argument is simply counter to sound laboratory management, current DoD management philosophy, as well as previous studies, such as the study conducted by the Federal Advisory Commission.

Audit Response. We state in this paragraph that we found the ideas concerning technological synergism and creation of a critical mass to be conceptually attractive. However, we concluded that the Army has been unable to quantify and document tangible benefits from forming this critical mass and technological synergism. The Army offers nothing to support its nonconcurrence. Accordingly, the statement will remain.

Management Comments on the Conclusions. The Army also nonconcurred with page 13, paragraph 1, "Our analysis of the Army's 'Report to the Defense Base Closure and Realignment Commission. . ." The Army strongly disagrees with the statements in this paragraph because the Army used the COBRA model for all of its cost estimates and the first sentence of the paragraph would indicate that the COBRA is flawed and thus all Army submittals may be incomplete.

Audit Response. Our disagreement is not with the COBRA model, but rather the data that were input into it. No model can calculate correct answers from data that are inaccurate, incomplete, or misleading.

Management Comments on the Recommendations. The Army nonconcurs with the recommendations for corrective action on page 13.

Audit Response. The recommendations resulted from our audit, and the Army has not provided any factual information in its nonconcurrences to refute them.

Appendix C. Laboratory Consolidation Study Cover Letter

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
WASHINGTON DC 20310-0103

SARD-ZT-TL

15 SEP 1993

MEMORANDUM FOR JIM FRIEL, DODIG

SUBJECT: Request for Information

Attached is the study you requested sometime back entitled the Laboratory Consolidation Study. We have determined that the attachment is the correct document.

You will note that the title is otherwise stated which was a prime cause for the difficulties in locating this document. I have verified with seperate Army sources, that this document is that which is referenced in the ARL Implementation Plan, dated July 1992.

I apologize for the confusion and delay in locating this study.

DANIEL R. THOMAS
LTC, FA
Laboratory Consolidation
Office

Appendix D. Excerpt from the Army's Report to the Defense Base Closure and Realignment Commission

REALIGNMENT SUMMARY (COBRA Ver 1.23)
DMRD 922 LAB-21

Option NPV20 ($K) :			Losing Base	: HDL Woodbridge
Total One-Time Cost ($K) :	318441		Group	: AMC
Years to Break Even :	7		Service	: US Army
ROI Years :	1		Option Package	: LAB-21
Strategy :	1		Baseline Year	: 1991

(1-Transfer, 2-Close, 3-Deactivate)

Net Cost ($K) Constant Dollars

	Year1 1992	Year2 1993	Year3 1994	Year4 1995	Year5 1996	Year6 1997	Beyond
Per Costs	8627	3530	2689	28220	33310	11564	0
Per Savings	-6700	-15700	-19925	-33500	-46800	-48450	-48450
Overhead	0	0	0	0	-3000	-3000	-3000
MILCON/EQ	27490	20748	42992	66637	60188	27945	0
Funded MCA	-5000	-10000	0	0	0	0	0
BRAC I	-10000	-50000	-17000	0	0	0	0
Land Sale	0	0	0	0	0	-11000	0
NET	14417	-51422	8756	61357	43698	-22941	-51450

NOTES: Negative numbers are net savings
Positive numbers are net costs

The savings associated with this realignment are also included in Defense Management Report Decision (DMRD) 922. In order to implement this DMRD initiative, it must be approved by the Commission on Base Closure and Realignment.

Appendix E. Excerpt from the Army's Justification for DoD Base Realignment and Closure

DoD BASE REALIGNMENT AND CLOSURE

ACCOUNT II

ARMY

(BRAC 91)

FY 1994 BUDGET ESTIMATES

JUSTIFICATION DATA SUBMITTED TO CONGRESS

MARCH 1993

SENT BY:OASD (P&L) I/BCL ; 10- 4-93 ; 11:43 ; OASD (P&L) I/BCL- 97062;# 3/23

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SENT BY:OASD (P&L) I/BCL · · :10- 4-93 : 11:44 : OASD (P&L) I/BCL→ 37662:# 6/23

BASE REALIGNMENT AND CLOSURE (#)
FINANCIAL SUMMARY
ARMY RESEARCH LABORATORY
(DOLLARS IN THOUSANDS)

	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996	FY 1997	TOTAL FY 92-97
ONE-TIME IMPLEMENTATION COSTS:							
Military Construction	0	12,500	117,000	64,000	2,000	1,000	197,000
Family Housing	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0
Operations	0	0	0	0	0	0	0
Environmental	0	0	0	0	0	0	0
Operation and Maintenance	0	500	0	0	0	0	500
Military Personnel - PCS	0	10,300	59,884	12,789	15,000	40,884	138,858
Other	0	0	0	0	0	0	0
	0	0	33,577	32,921	14,639	32,800	107,938
TOTAL ONE-TIME COSTS	0	23,100	162,571	109,710	36,786	85,065	414,518
Revenues From Land Sales (-)	0	0	0	0	0	(30,000)	(30,000)
Budget Request	0	23,100	162,571	109,710	36,786	55,065	384,518
FUNDING OUTSIDE THE ACCOUNT							
Military Construction	0	0	0	0	0	0	0
Family Housing	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0
Operations	0	0	0	0	0	0	0
Environmental	0	0	0	0	0	0	0
Operation and Maintenance	4,167	0	0	0	0	0	4,167
Other	0	0	0	0	0	0	0
Homeowners Assistance Program	0	0	0	0	0	0	0
TOTAL OUTSIDE THE ACCOUNT	4,167	0	0	0	0	0	4,167
SAVINGS:							
Military Construction	0	0	0	0	0	0	0
Family Housing	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0
Operations	0	0	0	0	0	0	0
Operation and Maintenance	61,000	77,000	100,000	120,000	120,000	120,000	598,000
Military Personnel	0	0	0	0	0	0	0
Other	0	0	0	0	0	0	0
Civilian ES	(160)	(216)	(300)	(678)	(774)	(774)	(774)
Military ES	0	0	0	0	0	0	0
Total Savings	61,000	77,000	100,000	120,000	120,000	120,000	598,000
NET IMPLEMENTATION COSTS:							
Military Construction	0	12,500	117,000	64,000	2,000	1,000	197,000
Family Housing	0	0	0	0	0	0	0
Construction	0	0	0	0	0	0	0
Operations	0	0	0	0	0	0	0
Environment	0	500	0	0	0	0	500
Operation and Maintenance	(44,833)	(66,214)	(73,106)	(107,211)	(104,342)	(78,438)	(474,541)
Military Personnel	0	0	0	0	0	0	0
Other	0	0	33,577	32,921	14,639	32,800	107,938
Homeowners Assistance Program	0	0	0	0	0	0	0
Revenues From Land Sales (-)	0	0	0	0	0	(30,000)	(30,000)
NET IMPLEMENTATION COSTS LESS LAND REVENUES	(44,833)	(53,214)	62,571	(10,290)	(89,214)	(94,638)	(199,518)

11

Exhibit BC-08

Appendix F. Summary of Potential Benefits Resulting From Audit

Recommendation Reference	Description of Benefit	Amount and/or Type of Benefit
1.	Economy and Efficiency. Prevents funds from being expended for unnecessary facilities, equipment, and personnel-related costs.	Nonmonetary.
2.	Economy and Efficiency. Avoid the expenditure of scarce resources for new building construction, new equipment, and personnel-related costs that are unnecessary.	Funds Put to Better Use. $169 million 1991 BRAC military construction and equipment procurement over the 6-year Future Years Defense Plan. The Army could also avoid as much as $137 million in operations and maintenance costs of the 6-year Future Years Defense Plan.

Appendix G. Organizations Visited or Contacted

Office of the Secretary of Defense

Comptroller of the Department of Defense, Arlington, VA
Director, Defense Research and Engineering, Arlington, VA
Joint Directors of Laboratories, Andrews Air Force Base, MD

Department of the Army

Deputy Assistant Secretary of the Army (Research and Technology), Washington, DC
Army Natick Research, Development, and Engineering Center, Natick, MA
Army Research Laboratory, Adelphi, MD
Electronics and Power Sources Directorate, Army Research Laboratory, Fort Monmouth, NJ

Department of the Navy

Carderock Division, Naval Surface Warfare Center, Annapolis, MD
Naval Research Laboratory, Washington, DC
Naval Research and Development Division, Naval Command, Control, and Ocean Surveillance Center, San Diego, CA

Department of the Air Force

Phillips Laboratory, Kirtland Air Force Base, NM
Rome Laboratory, Griffiss Air Force Base, NY
Wright Laboratory, Wright-Patterson Air Force Base, OH

Non-Defense Federal Organizations

Science Policy Research Division, Congressional Research Service, Library of Congress, Washington, DC

Appendix H. Report Distribution

Office of the Secretary of Defense

Secretary of Defense
Deputy Secretary of Defense
Under Secretary of Defense for Acquisition and Technology
Comptroller of the Department of Defense
Director, Defense Research and Engineering
Assistant Secretary of Defense (Economic Security)
Deputy Under Secretary of Defense (Logistics)
Joint Directors of Laboratories

Department of the Army

Secretary of the Army
Assistant Secretary of the Army (Installations and Logistics)
Assistant Secretary of the Army (Research, Development and Technology)
Director, U.S. Army Contracting Support Agency
Commander, Army Natick Research, Development and Engineering Center
Commander, Army Research Laboratory
Auditor General, Department of the Army

Department of the Navy

Secretary of the Navy
Assistant Secretary of the Navy (Financial Management)
Comptroller of the Navy
Commander, Naval Surface Warfare Center
Commander, Naval Research Laboratory

Department of the Air Force

Secretary of the Air Force
Assistant Secretary of the Air Force (Financial Management and Comptroller)
Director, Rome Laboratory
Director, Wright Laboratory

Defense Agencies

Director, Defense Contract Audit Agency
Director, Defense Logistics Agency

Non-Defense Federal Organizations

Office of Management and Budget
U.S. General Accounting Office, National Security and International Affairs Division, Technical Information Center
Science Policy Research Division, Congressional Research Service, Library of Congress

Chairman and Ranking Minority Member of Each of the Following Congressional Committees and Subcommittees:

Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on Defense, Committee on Appropriations
House Committee on Armed Services
House Committee on Government Operations
House Subcommittee on Legislation and National Security, Committee on Government Operations

Senator Bill Bradley
Senator Howell Heflin
Senator Frank R. Lautenberg
Senator Barbara A. Mikulski
Senator Paul S. Sarbanes
Senator Richard C. Shelby
Representative Helen Delich Bently
Representative Bud Cramer
Representative Steny H. Hoyer
Representative Frank Pallone, Jr.
Representative Dick Zimmer

Part IV - Management Comments

Director, Defense Research and Engineering, Comments

OFFICE OF THE DIRECTOR OF
DEFENSE RESEARCH AND ENGINEERING
WASHINGTON, DC 20301-3030

DEC 2 1993

MEMORANDUM FOR INSPECTOR GENERAL, DEPARTMENT OF DEFENSE

SUBJECT: Draft Quick-Reaction Report on Microelectronics Research, Development, Test and Evaluation Laboratories Within DoD (Project No. 3AB-0058.02)

Reference: DDR&E memo for DoD-IG of Sep 17, 1993, Subj: Army Microelectronics Research Facility

This responds to recommendation 1 of subject report.

As previously stated in DDR&E Memorandum of 17 September 1993, (Subject: Army Microelectronics Research Facility), we have been advised that the 1991 Base Realignment and Closure Commission (BRAC) requires that the Electronics Technology and Devices Laboratory (ETDL) move to Adelphi, Maryland. Based on this advice, further study of this issue does not seem justified.

I am, therefore, unable to concur with recommendation 1 of the subject report.

John M. Bachkosky
Deputy Director
Defense Research and Engineering

Comptroller of the Department of Defense Comments

OFFICE OF THE COMPTROLLER OF THE DEPARTMENT OF DEFENSE

WASHINGTON DC 20301 1100

JAN 1 1994

(Management Systems)

MEMORANDUM FOR DIRECTOR, ACQUISITION MANAGEMENT DIRECTORATE
DODIG

SUBJECT: Draft Quick-Reaction Reports on Microelectronics and Advanced Materials Research, Development, Test and Evaluation Laboratories within Department of Defense

The two proposed audit reports (project numbers 3AB-0058.01 and 3AB-0058.02) contain a recommendation that the Comptroller of the Department of Defense withhold military construction funds until an independent and objective analysis has been completed as to whether the construction is still needed. The Comptroller has placed a temporary hold on FY 1994 military construction funding, pending a ruling by the Office of the General Counsel of the legal implications of doing so.

If the proposed reports are finalized and issued, I suggest that the recommendation for the Comptroller to withhold funding be made contingent upon action by the Under Secretary of Defense for Acquisition to commission an independent study. The 1995 Base Realignment and Closure (BRAC) process would provide an opportunity for study of this issue from a Department perspective. It appears that the only effective way to modify the 1991 BRAC Commission's recommendations is to propose changes to the 1995 BRAC Commission.

Alvin Tucker
Deputy Comptroller
(Management Systems)

Assistant Secretary of Defense (Economic Security) Comments

ECONOMIC SECURITY

OFFICE OF THE ASSISTANT SECRETARY OF DEFENSE
3300 DEFENSE PENTAGON
WASHINGTON, DC 20301-3300

7 MAR 1994

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING

SUBJECT: Draft Quick-Reaction Report on Microelectronics (Electronic Devices) Research, Development, Test, and Evaluation Laboratories Within DoD (Project No. 3AB-0058.02)

I want to advise you of serious flaws in the subject draft report and to recommend those flaws be corrected before the report is finalized.

The draft report states that financial data submitted by the DoD and the Army to the 1991 Base Realignment and Closure Commission were incomplete and inaccurate (pages i, 4, 8 and 13). This statement is simply wrong, as it is based on faulty logic described on page 10 of the draft report.

The draft report states that 774 personnel spaces will not be "saved" as a result of the realignment because the savings had "already been eliminated" through the DMRD process, even though the DMRD process did not specify the realignment in question. This statement is made despite the fact that the GAO report (GAO/NSIAD-93-150), as cited in the draft report itself, says that the realignment will save 774 civilian positions. Also, all President's Budget BRAC justification books since FY 93 have listed the savings at 774 civilian positions for this realignment.

The draft report also states that the payback period would stretch beyond 18 years, as compared to the 4 years assumed by the 1991 BRAC Commission, when total implementation costs are compared to the "adjusted savings." This statement shows a lack of understanding of how payback is calculated. In simple terms, payback is net cost to implement divided by annual savings.

The current facts are: (1) total costs to implement of $371 million (up from the Commission estimate of $282 million) based on the FY 1994 President's Budget; (2) total savings during implementation of $192 million (up from $106 million); (3) net cost for implementation of $183 million (almost the same as the original Commission estimate of $176 million); and, (4) annual savings of $54 million (up from $45 million). In other words, a **better** payback picture than originally estimated.

Lastly, to make the statement that estimates provided the 1991 Commission were inaccurate and incomplete requires an assumption that the Commission estimates have budget quality. They do not. By necessity, Commission estimates are made without benefit of even site visits and clearly without benefit of construction cost estimates based on 100% design or even 35% design.

Therefore, I strongly recommend that the draft report be revised to remove all references to "inaccurate and incomplete" data, for this simply was not the case. Also, the draft report should be revised to reflect the above financial picture vice the distorted picture painted on page 10 of the report.

Robert E. Bayer
Deputy Assistant Secretary of Defense
(Economic Reinvestment and
Base Realignment and Closure)

Department of the Army Comments

DEPARTMENT OF THE ARMY
ADMINISTRATIVE ASSISTANT TO THE SECRETARY
WASHINGTON, DC 20310-0105

29 NOV 1993

SARD-ZT

MEMORANDUM FOR INSPECTOR GENERAL, DEPARTMENT OF DEFENSE (AUDITING)

SUBJECT: DoD IG Draft Quick Reaction Reports on Microelectronics (Electronic Devices) and Advanced Materials Research, Development, Test and Evaluation Laboratories Within DoD, November 13, 1993

The Army nonconcurs with the subject reports. These reports are factually inaccurate, badly flawed in logic and their conclusions are legally objectionable. Enclosed is a copy of the Army's point by point rebuttal to the subject reports that was forwarded to the Under Secretary of Defense for Acquisition on November 24, 1993 (Tab A), and subsequent legal opinion from the Army Judge Advocate General (Tab B) and Office of General Counsel (Tab C).

The Army is a leader in DoD laboratory consolidation and downsizing. The Army is investing in its future by establishing the Army Research Laboratory (ARL). After extensive study and analysis, the Army made a conscious decision in 1990 to reduce the size of its research infrastructure, increase its effectiveness, and improve quality by creating a corporate "flagship" laboratory, the Army Research Laboratory ARL is properly balanced in its missions, functions and strategy We have focused on those technologies most critical to future land warfare supremacy. New microelectronics and materials facilities are key to this commitment and were fully defended to, and ultimately supported by, the Deputy Secretary of Defense, Federal Advisory Commission on Consolidation and Conversion of Defense Research and Development Laboratories, 1991 Base Closure and Realignment Commission, Defense Science Board Task Force on Microelectronics and the General Accounting Office. Moreover, funding is included in the FY94 budget for this consolidation and is being offset by manpower savings. We need the Army Research Laboratory and this investment.

The subject draft audit reports are unencumbered by the facts and their conclusions are legally objectionable because they assume authority to disregard binding recommendations of the 1988 and 1991 Defense Base Closure and Realignment Commissions. These proposed draft audit reports, if finalized in their current form, will severely reduce the Army's science and technology capability and seriously impair the Secretary of Defense's legal responsibility to implement the recommendations of the Defense Base Closure and Realignment Commissions in a timely manner. We cannot turn around at this point. It is imperative that the issues and errors identified in the Army response be resolved and included in the final audit report. If resolution does not occur, the Army strongly recommends that the reports not be finalized and distributed.

George E. Dausman
Acting Assistant Secretary of the Army
(Research, Development and Acquisition)

Enclosures

CF:
USD(A)

ARMY COMMENTS
ON THE
"DRAFT QUICK-REACTION REPORT ON MICROELECTRONICS (ELECTRONIC DEVICES) RESEARCH, DEVELOPMENT, TEST AND EVALUATION LABORATORIES WITHIN DOD"

Part I - Introduction

Executive Summary – **NONCONCUR.** The Army strongly disagrees with the statements made in the Executive Summary. The Army Research Laboratory (ARL) was officially formed in October 1992 after years of study of the Department of Defense (DOD) and the Department of the Army's (DA) research and development community by both internal and external groups. The most recent studies, LAB 21, the 1991 Base Realignment and Closure (BRAC) Commission, and the Federal Advisory Commission on Consolidation and Conversion of Defense Research and Development Laboratories, each specifically endorsed the concept of a consolidated, multi-disciplinary, "world class" Army Research Laboratory. Furthermore, the Defense Science Board Task Force on Microelectronics Research Facilities recommended that each service should maintain their own applications oriented research facility.

The ARL is the corporate laboratory for the Army, providing a research capability to enable the Army to meet the warfighting challenges of the future battlefield. Such a corporate laboratory must have a strong in-house research capability with a critical mass of work in key technology areas Electronics and materials are fundamental technologies and constitute core competencies for the laboratory. State-of-the-art research facilities and equipment must be made available to attract and retain a highly competent and dedicated work force. The Army is committed to the planned investment in ARL

Background (pp 2-3) –

• **Page 2, paragraph 2** - "During FY 1991, the Army operated 44 laboratories, centers, and institutes that employed approximately 30,500 military and civilian personnel Total Army funding for those laboratories in FY 1993 was $6.0 billion."

-- ***Army Comment*** – **Nonconcur.** The paragraph is incorrect and misleading, revise to read as follows: "The Army currently operates 21 laboratories, centers, and institutes that employs approximately 29,000 civilian and military personnel. Total funding for these activities was approximately $4.0 billion in FY93."

• **Page 2, paragraph 3, last sentence** - "Concerned about perceived risks associated with this approach, the Deputy Secretary of Defense approved implementation of Project Reliance, even though the estimated savings were significantly higher with the second alternative."

•• ***Army Comment*** – **Nonconcur.** The Army recommends the last sentence either be deleted or be revised to read as follows: "The Deputy Secretary of Defense selected Alternative 1 which is responsive to warfighters, improves technology

transition throughout the life cycle, is fully responsive to 'new world' reality and past criticism, retains Service Acquisition Executive (the Assistant Secretary of the Army for Research, Development and Acquisition) authority and accountability and provides the DoD with the most potential savings."

Rationale -- This sentence is misleading, only discusses part of the reasoning behind the selection of Alternative 1 and in some aspects is incorrect. One of the drawbacks of Alternative 2 was indeed the high risk due to the "abrupt, irreversible, fundamental change to the entire defense acquisition process" but the Defense Science, Engineering and Test Agency (DSETA) also was "decoupled from the Service Acquisition Executives who would still be accountable for programs but would lose authority and resources" and the sentence and paragraph doesn't touch on the positive aspects of Alternative 1. Technically speaking, the DepSecDef approved "Alternative 1," of which Project Reliance is an integral part. Additionally, the reference that the savings were "significantly higher with the second alternative" is not correct...according to the briefing slide presented to the DepSecDef on August 22, 1990 the total savings for Alternative 1 were $3.420B and for Alternative 2 were $2.938B, thus Alternative 1 presented more savings.

• **Page 2, paragraph 4** -"To expedite implementation of its laboratory consolidation plans and avoid "bureaucratic opposition," the Army chose to present its recommendations to the 1991 Base Closure and Realignment (BRAC) Commission. In the April 22, 1991, issue of Defense News, a senior Army research official was quoted as saying, "The situation we are faced with is a major reorganization trying to take place If we fold the moves under base closure, we can capitalize on the fact that it becomes law"

-- ***Army Comment*** --Nonconcur This paragraph is inaccurate, misleading and the Army strongly disagrees with the innuendo of this paragraph. Recommend it be revised as follows: "The BRAC process was that which the Army was mandated to use for the materials laboratory action in accordance with the thresholds of 10 U.S.C. 2687. The BRAC process was established such that the military services developed closure lists which are reviewed and approved by the DoD before submission to the independent commission established in PL 101-510."

Rationale -- The Army submitted its proposal to establish the Army Research Laboratory as part of the DoD BRAC 1991 proposal because of the overall scope of the ARL consolidation and 10 U.S C 2687 required it for the modification of a BRAC 88 decision. BRAC 88 decided to close the former Materials Technology Laboratory (MTL) in Watertown, Massachusetts and send parts of it to three Army Research, Development and Engineering Centers (RDECs). The ARL plan sends the structures element of MTL to the new Vehicle Structures Directorate, NASA Langley Research Center and the materials research to Aberdeen Proving Ground, Maryland. The review process at DoD ensures that the "DoD perspective"has been applied for the Services submissions prior to consolidation of all the Services inputs into the final DoD BRAC report to the commission. The responsibility for this review can not be delegated to the Services. Moreover, the Army firmly believes that the BRAC process

is the only mechanism that provides the high level of review and scrutiny required for a major realignment such as the Army Research Laboratory. To state that using the BRAC process avoids bureaucratic opposition is to imply that it is fundamentally flawed or that the Army was seeking to avoid review. The Army strongly disagrees with this assertion.

• **Page 2, paragraph 5** – "The 1991 BRAC Commission approved..."

-- ***Army Comment*** – **Nonconcur.** This paragraph should be deleted.

Rationale– The reference to P.L. 102-190 is irrelevant for this report. This P.L. was enacted for BRAC 93 and BRAC 95 and does not have any impact on BRAC 91 actions...therefore it is misleading to include its discussion.

• **Page 3, paragraph 4** – "Three laboratory construction projects are directly related to the ARL..."

•• ***Army Comment*** – **Nonconcur.** Delete paragraph and replace with the following. "Two construction projects are directly related to ARL. Specifically there are plans to build and renovate the required facilities at the Adelphi Laboratory Center, projected to cost $102.1 million and Aberdeen Proving Ground, projected to cost $80 million. In the FY95 BRAC 91 Budget Submit to Congress the Army estimated the total implementation costs for the Army Research Laboratory (ARL) to be approximately $370M. Since the time of this budget submit the Army has reduced the scope of the microelectronics research facility due to a recent review led by the Tri-Service S&T executives, supported by the Joint Directors of Laboratories (JDL) and in accordance with guidance from the Director, Defense Research and Engineering, further reducing the total estimated cost to approximately $365 million. This figure represents the current working estimate for the Army Research Laboratory."

Rationale– Accuracy and completeness. Figures are not current and it should be noted that the new fuze evaluation facility is NOT part of the Army Research Laboratory per se, but rather a MICOM project that was directed by BRAC 91 as a result of the ARL consolidation and divesture. (see Army comment for opening paragraph for page 8 below)

Internal Controls (p. 4)

•• ***Army Comment*** – **Nonconcur.** Delete paragraphs.

Rationale – The Army strongly disagrees with the reports contention that internal controls were not effective to ensure financial data submitted to the 1991 Defense Base Realignment and Closure Commission was complete and accurate. This contention is completely unsubstantiated, as the report does not identify that any specific internal control weaknesses existed. Nor does it identify what questionable data was submitted to the Commission. In their May 1991 audit report (GAO/NSIAD-91-224) the General Accounting Office (GAO)concluded that the Army's realignment recommendations to the 1991 Commission were adequately supported. Moreover, in

another report (April 1993 GAO/NSIAD-93-150), the GAO found that construction costs of the Army Research Laboratory had increased only slightly. These General Accounting Office reports directly contradict the conclusions in the report that the financial data submitted to the commission wasn't complete or accurate. (see also Army Audit Agency Special Report, SR-92-702 below)

Prior Audits and Other Reviews (p. 5)
-- ***Army Comment*-** Nonconcur. Add the following reviews:

"The Federal Advisory Commission on Consolidation and Conversion of Defense Research and Development Laboratories - Report to the Secretary of Defense," September 1991. Public Law 101-510 established the Federal Advisory Commission on Consolidation and Conversion of Defense Research and Development Laboratories to study the Department of Defense (DoD) laboratory system and provide recommendations to the Secretary of Defense on the feasibility and desirability of various means to improve the operation of DoD laboratories. Among the findings of the Federal Advisory Commission were that **"the Army's proposed laboratory consolidation and realignment should result in a more effective laboratory structure.... The Commission supports this proposed consolidation."**

"Report of the 1992 Defense Science Board Task Force (DSBTF) on Microelectronics Research Facilities (MRF)," June 1992. This study was a follow-on to the The Federal Advisory Commission on Consolidation and Conversion of Defense Research and Development Laboratories and was specifically formed to assess the advantages and disadvantages of a single MRF. Significant findings and conclusions of the DSBTF include: "Although this study supports consolidation of DoD microelectronics research facilities for materials growth, processing, and device fabrication, consolidation of all in-house microelectronics expertise is not desirable." The DSB study further finds that **"... each military department should have a single applications-oriented microelectronics facility selected from an existing Microelectronic Research Facilities (MRF) and closely associated with the development and user communities"** and also that "A single DoD microelectronics research facility would create barriers to interactions with system users and impair the ability to apply microelectronics technology."

"Special Report by the U. S. Army Audit Agency (AAA) - Base Realignment and Closure Construction Requirements," SR 92-702, 12 Aug 1992. At the request of the Director of Management, the Army Auditor General reviewed the BRAC 91 construction requirements to determine whether the requirements were adequately supported. The AAA concluded "that the Major Commands and installations adequately supported the majority of their construction requirements and that they generally followed DA guidance for calculating construction requirements." Additionally, they concluded that "we observed that all parties, from DA through the installations, were concientious in their endeavors to make sure that the construction projects reflected essential facilities to meet the realigned missions." Where ARL requirements were not supported by the AAA, the ARL adjusted the costs and square footage on the DD Form 1391 in accordance with the AAA recommendations.

Rationale –Completeness. These three studies are very significant to the subject of this report, supported the creation of the Army Research Laboratory and thus should be noted and included.

Part II - Findings and Recommendations

Opening Paragraph (p. 8) – "The Army Research Laboratory is in the process of realigning its research and development laboratories in accordance..."

•• *Army Comment* –Nonconcur. The Army strongly disagrees with the statements in this section. It implies that the entire Adelphi Laboratory Center project is related to the Microelectronics Research Facility and movement of Electronic and Power Sources Directorate at Ft. Monmouth, NJ. Revise paragraph to read as follows: "The Department of the Army established the Army Research Laboratory (ARL) in October 1992 in accordance with P.L. 101-510 (BRAC 91). As a result of the BRAC 91 decision, the Army has started Project No. 37098 to build the required facilities at the Adelphi Laboratory Center (ALC):

- a Microelectronics Research Facility (MRF)
- a General Research and Technology Laboratories (R&T)
- scientist and engineer (S&E) and general office space
- and required support facilities

Equipment that is required to be replaced will also be procured.

The construction and renovation are being undertaken to support three technical Directorates relocating personnel to the ALC as follows:

- the Electronics and Power Sources Directorate (EPSD) from Ft. Monmouth, NJ (formerly the Electronic Technology Devices Laboratory), and Ft. Belvoir, VA (formerly NVEOL personnel)
- a portion of the Battlefield Environment Directorate from White Sands Missile range, NM
- Sensors, Signature, and Signal Processing Directorate personnel from Ft. Belvoir, VA (formerly NVEOL personnel)
- Personnel from the Woodbridge Research Facility which is being closed in September 1994

By combining these efforts in one location with state-of-the-art facilities, the Army's research capability will be better focused and enhanced to meet the highest priority warfighting challenges of the future battlefield. The total value of the construction and renovation at the ALC is $102.1 million. Of this amount, $27.8 million is for the construction of a MRF which has been reduced in scope from original estimates due to discussions with the Navy and Air Force to eliminate redundant capabilities. New equipment purchases to support all relocating Directorates is currently estimated at $33 3 million. The Army will also invest approximately $63.2 million in personnel related expenses (to include severance, PCS, and transportation of equipment) to relocate 445 personnel who have transfer of function rights from the various organizations relocating to the Adelphi Laboratory Center.

Rationale – Accuracy and completeness. The ARL is not realigning its labs, the Army is. The BRAC Commission relied on cost estimates from the Army standard program, COBRA. The estimates are as accurate as can reasonably be expected considering the level of design detail available at that time. The Army will not be spending $134 million for personnel related expenses for the realignment of ETDL to Adelphi as the paragraph implies. This figure is for the personnel related expense for the entire ARL realignment. It is estimated that roughly one half of the Adelphi Laboratory Center personnel costs are associated with the realignment of EPSD personnel. By virtue of the fact that the ARL was submitted to the BRAC Commission by the Secretary of Defense inherently implies that it was done with a DoD perspective. The new fuze evaluation facility is NOT part of the Army Research Laboratory. The transfer of the fuze development and production support functions from the Harry Diamond Laboratories to the Missile Research, Development and Engineering Center (missile related) and to the Armament Research, Development and Engineering Center (armament related) was discussed in the LAB 21 study and part of BRAC 91. However as a result of discussions and negotiations regarding the fuze development and production support mission indicated that the mission was a non-tech base area and thus not appropriate to the future ARL mission. However, because the fuze development facility was directed in the BRAC 91 consolidation and divesture of ARL, the investment costs are part of the ARL BRAC 91 package.

Background (pp 8-9) – "Pending completion of the..."
•• ***Army Comment*** -- Nonconcur. Delete paragraph and use above Army recommended paragraph as sole "Background" statement.

Rationale -- This paragraph is redundant with the previous paragraph and is also inaccurate as mentioned above.

Army Studies and Justification (pp 9-10) –
• **Page 9, paragraph 2, first sentence** – "The Army Research Laboratory plans to build a new Advanced Materials Laboratory at Aberdeen Proving Ground, Maryland; a new Microelectronics Laboratory at Adelphi, Maryland; and a new Fuze Evaluation Facility at Redstone Arsenal, Alabama."

•• ***Army Comment*** – **Nonconcur.** Revise to read as follows: "The Army plans to build a new Advanced Materials Research Facility at Aberdeen Proving Ground, Maryland and a new Microelectronics Research Facility at Adelphi, Maryland."

Rationale – Accuracy. It is an Army initiative to build a new Advanced Materials Research Facility and a new Microelectronics Research Facility, not the ARL. Additionally, the new Fuze Evaluation Facility at Redstone Arsenal, Alabama is a MICOM project that resulted from the ARL consolidation and divesture and therefore should not be included in any discussion of "ARL" components. (see Army comments and rationale for the Opening Paragraph (p. 8) above)

• **Page 10, paragraph 1** – "We were then advised that this memorandum with attachments constituted the Army Laboratory Consolidation Study."

•• ***Army Comment*** –**Nonconcur.** Revise sentence to read as follows: "We were then advised that "Mr. Hollis' memo is simply a summary and maturation of the concept and has never been referred to as the 'Laboratory Consolidation Study' by the Department of the Army."

Rationale – Accuracy.

• **Page 10, paragraph 2, last two sentences** – "By providing procedures and quality facilities, the Army believes that a 'critical mass' of talent fundamental to worthwhile research will result. Although conceptually attractive, the Army has been unable to quantify and document tangible benefits that would result from forming this 'critical mass' and 'technological synergism.'"

•• ***Army Comment*** –**Nonconcur.** Revise first sentence to read as follows: "The Army concurs with the Federal Advisory Commission in their belief that a 'critical mass' of talent fundamental to worthwhile research will result. The Federal Advisory Commission found that there are certain 'attributes that are essential to achieving high quality and effectiveness', including: 'critical mass of assigned work' and 'state-of-the-art facilities and equipment.' Additionally, the Commission found that 'restructuring the in-house laboratory system is not only essential to achieve cost reductions, it also should be used as a major opportunity to improve effectiveness.'" Delete last sentence in paragraph.

Rationale -- Accuracy and completeness. The Army's argument for establishing ARL has been reviewed and supported by several expert bodies, including. the Federal Advisory Commission, the Defense Science Board, the General Accounting Office and within OSD and found to be justified.

• **Page 10, paragraph 3** – "After reviewing....

•• ***Army Comment*** – **Nonconcur.** Delete paragraph.

Rationale – Accuracy and completeness. The Draft LAB 21 Report studied the *concept* of a "corporate" research facility. On December 7, 1990, the Secretary of the Army concurred with the concept and subsequently directed the Assistant Secretary of the Army for Research, Development and Acquisition (ASARDA) to "assess the best alternatives for implementing LAB 21 as modified by the August 22, 1990 DepSecDef briefing and the evolving Project Reliance efforts." The ASARDA subsequently developed and evaluated a number of alternatives. The methodology and alternatives were then briefed to the Program Budget Council (PBC), Select Committee (SELCOM) and SecArmy. The Secretary of the Army decided on the ARL-ALC/ARL-APG site option when he approved the Army's BRAC 91 submission. A briefing to the Federal Advisory Commission on Consolidation and Conversion of Defense Research and Development Laboratories which outlines the methodology and various options was

forwarded to the DoD IG's office as part of the October 8, 1993 Army response to the IG's interim set of questions. **The Army's decision to establish the ARL at Adelphi and Aberdeen is clearly the most logical and cost effective solution and is well documented in the referenced briefing.**

Cost and Savings (pp 10-11)

• **Page 10, paragraph 4** – "As detailed in the '1991 Defense Base Closure and Realignment Report to the President'...

~ ***Army Comment*** – **Nonconcur.** Paragraph must be revised to indicate the fact that the Army's BRAC 91 Report to the Secretary of Defense dated 1 April 1991 clearly showed the Army's estimate for the establishment of ARL to be approximately $318 million. The Army stated in its comment to the interim questions that we did not know why the cost figures had changed.

Rationale – Accuracy and completeness.

• **Page 11, paragraph 1** – "However, when these costs and savings are compared to the Army submission on DMRD 922 to the "DoD Update Justification of Estimates for Defense Management Report Initiatives," April 1992, estimated military construction costs for implementing this same DMRD initiative are reported as being $15.1 million."

~ ***Army Comment*** – **Nonconcur.** Delete sentence.

Rationale -- Accuracy There should NOT be any MilCon costs associated with DMRD 922 because the basis for the 922 savings is productivity improvements and NOT the BRAC 91 action to establish the Army Research Laboratory. This was clearly delineated in the preface, and body, of the October 8, 1993 Army response to interim DoD IG questions.

• **Page 11, paragraph 2, last sentence** – "However, according to the 'Army Research Laboratory Implementation Plan,' July 15, 1992, of these 774 personnel spaces, 469 had already been eliminated before the ARL consolidation was ever started."

•• ***Army Comment*** – **Nonconcur.** Delete sentence.

Rationale- Accuracy. The spaces are properly attributable to the ARL plan and are not counted elsewhere. The DMR process began in July 1989. The baseline for the ARL personnel reductions is the number of spaces authorized to the constituent elements that comprised ARL as of 1 October 1989, i.e. LAB 21 is the baseline, not July 15, 1992 which is the date of the ARL implementation plan. This baseline is set by DMRD 922, dated November 1989. This report implies that any manpower eliminations occurring prior to the *physical* consolidation or closure of ETDL and MTL cannot be counted. This is an incorrect and illogical assumption. Recognizing that OSD and the Army intended to reduce laboratory infrastructure and cognizant of Army/OSD support for LAB 21, the Army did not wait until the detailed implementation

plan for ARL was complete to begin reducing the laboratory overhead consistent with LAB 21 and the intent of DMRD 922. It is good management practice to "rightsize" in a manner that minimizes the impact on the science and technology research and development and, maybe more importantly, on the people affected by the downsizing. The Army could not possibly properly rightsize if the implied logic was followed. The 469 programmed space eliminations are part of the organizational consolidations, closure, divesture and reduced layers of ARL management required under BRAC 91. This comment and rationale is also applicable to the first sentence of paragraph 3.

• **Page 11, paragraph 3** – "Accordingly,...

~*Army Comment* –**Nonconcur.** Delete paragraph.

Rationale – Illogical argument based on incorrect data. See comment for paragraph 2 above. Additionally, the FY95 BRAC 91 Budget Submit to Congress shows the implementation costs for ARL to be approximately $370M. This same budget submit also shows that the cumulative savings for ARL are estimated to be approximately $162M from FY92-97, with annual recurring savings of $55M after FY97. Based on the actual current data, the payback period will be around four years which is in line with what was "assumed by the BRAC Commission." Also remember that the MRF has been reduced in scope since the BRAC budget submit and that the total cost is now estimated to be approximately $365M, so the actual payback should be sooner

• **Page 11, paragraph 4** -- "Regarding the new Microelectronics Laboratory...

~ *Army Comment* – **Nonconcur** Delete paragraph

Rationale– It is inappropriate to simply look at anticipated ETDL related eliminations when performing any type of economic analysis of ARL. ARL is an integrated, multidisciplinary corporate laboratory and should be evaluated at the macro level, i.e. as the whole, and not at any intermediate component level such as the micro-electronics research facility which is but a piece of one of the Directorates occupying the Adelphi laboratory center. See comment on "Background" above. Subsequently, BRAC 93 identifies further savings due to the backfill of the EPSD vacated space.

Independent Review and Recommendations (pp 11-12)

• **Page 11, paragraph 5, first sentence** – "Contrary to Army claims, the Federal Advisory Commission on Consolidation and Conversion of DoD R&D Laboratories report does not support construction of a new microelectronics laboratory at Adelphi, Maryland."

•• *Army Comment* –**Nonconcur.** Delete sentence.

Rationale - Accuracy. The Federal Advisory Commission concluded: "the Army's proposed laboratory consolidation and realignment should result in a more effective laboratory structure.... The commission supports this proposed consolidation." (see

page ES-5 of their report dated September 1991). Furthermore, the new Director of the Army Research Laboratory, Dr. John Lyons, is a former member of that Commission, and ready to confirm to the DoD IG that the Commission did in fact support the Army's establishment of ARL.

• **Page 12, paragraphs 2 & 3** – "The DSB was created..." and "The DSB Task Force..."

•• ***Army Comment*** – **Nonconcur.** Delete paragraphs and replace with the following: "The BRAC 1991 Report to the President, which became law absent a vote by the Congress, requires the Secretary of Defense to "...defer implementation of the BRAC findings as they pertain to the establishment of the Army Research Laboratory until January 1, 1992, in order to consider the recommendations and findings of the Federal Advisory Commission on Consolidation and Conversion of DoD Laboratories and consult with appropriate congressional committees thereon." The Commission report dated September 1991 recommended that "the proposed Army and Navy laboratory consolidations and realignments should begin in January 1992. The Army should delay implementation of the microelectronics function at Adelphi, Maryland, and construction of the facility to house the function until the completion of the study in recommendation 7." Recommendation 7 includes "an independently appointed review group should assess the advantages and disadvantages of a single microelectronics research facility for all three Services."

On February 3, 1992, the Under Secretary of Defense for Acquisition (USDA) requested that the Defense Science Board organize a Task Force (DSBTF) to assess the advantages and disadvantages of a single microelectronics research facility for the Department of Defense as per recommendation 7 of the Commission's report. On page 15 of the June 1992 DSB Report the task force concludes "Although this study supports consolidation of DoD microelectronics research facilities for materials growth, processing, and device fabrication, consolidation of all in-house microelectronics expertise is not desirable." The DSB study further finds that "... each military department should have a single applications-oriented microelectronics facility selected from an existing Microelectronic Research Facilities (MRF) and closely associated with the development and user communities" and also that "A single DoD microelectronics research facility would create barriers to interactions with system users and impair the ability to apply microelectronics technology." The Army concurred on 18 Sept 92 in the conclusions and recommendations of the DSBTF on DoD MRF as it relates to consolidation of Army applications-oriented microelectronics research at ARL, Adelphi.

The USDA on 14 Jan 93 subsequently tasked the Services' Assistant Secretaries to develop a plan for implementing the DSBTF recommendations. The Army plan for consolidation of its application-oriented microelectronics research and fabrication at the Army Research Laboratory, Adelphi, Maryland, as per BRAC 91, was forwarded to the Director, Defense Research and Engineering on 22 Feb 1993.

In a September 17, 1993 memorandum for the DoD Inspector General, Subject: Army Microelectronics Research Facility, the Director, Defense Research and Engineering identifies a revised net square feet of clean room area for the subject facility and states "this revision should result in lower construction costs and lower recurring costs. Under these circumstances, I do not plan to delay execution of the project."

The Army is in compliance with the spirit and intent of the law, including the findings and recommendations of the Federal Advisory Commission, as it applies to establishment of the ARL.

Rationale – Accuracy and completeness. The third paragraph only focuses on one of the recommendations of the DSB and further goes on to state that the DSB "concluded that the proposed Army investment to build additional corporate microelectronics research facilities is unwarranted." Nowhere in the DSB report is this conclusion reached or this statement made and using such erroneous quotes is extremely inappropriate. Moreover, the DSB concluded that "Although this study supports consolidation of DoD microelectronics research facilities for materials growth, processing, and device fabrication, consolidation of all in-house microelectronics expertise is not desirable." The second paragraph is not really necessary, the qualifications of the DSB are fully understood by the Army.

Conclusion (pp 12-13)

- **Page 12, paragraph 4** -- "The Army plans to build... "

~ ***Army Comment*** – **Nonconcur**. Revise paragraph as follows: "The Army plans to build two new facilities to implement the Army Research Laboratory in accordance with BRAC 91. Total implementation cost is estimated to be approximately $370M according to the FY95 BRAC 91 Budget Submit to Congress. Since the time of this budget submit the Army has reduced the scope of the microelectronics research facility in accordance with guidance from the Director, Defense Research and Engineering which has subsequently further reduced the total estimated cost to approximately $365 million. This figure represents the current working estimate for the Army Research Laboratory."

Rationale– Accuracy and completeness. ARL is being established as a result of BRAC 91 and the latest BRAC budget indicates an implementation cost of $370M vs. $415M as stated Moreover, the Fuze facility at Redstone is NOT part of ARL per se, but rather a MICOM project that was directed by BRAC 91 as a result of the ARL consolidation and divesture. Its investment costs are, however, included in the ARL BRAC 91 package. (see Army Comment for page 8, paragraph 2 "Background")

- **Page 12, paragraph 5** -- "We believe that the Army Research Laboratory plans should be reevaluated..."

~ ***Army Comment*** – **Nonconcur**. Delete paragraph.

Rationale– Any further delay in the construction of ARL facilities will jeopardize the DoD/Army from meeting the BRAC 91 personnel moves and facility closure deadlines, create confusion in our laboratories, cause a loss of efficiency during transition and cost the taxpayer unnecessarily. Another DSB study would be redundant, unnecessary and wasteful. The Defense Science Board has already reviewed the DoD's microelectronics research from a DoD perspective and the Army has fully complied with the DSB findings. (see Army comment re: page 12, paragraphs 2 and 3 above)

• **Page 12, paragraph 6** – "The Army Draft LAB 21 Study... "

– ***Army Comment*** – **Nonconcur.** Delete paragraph.

Rationale– It suggests consolidations of research functions is an ineffective means of increasing effectiveness...this argument is simply counter to sound laboratory management, current DoD management philosophy, as well as previous studies, such as the Federal Advisory Commission. In fact, the Federal Advisory Commission concluded that "Restructuring the in-house laboratory system is not only essential to achieve cost reductions, it should also be used as a major opportunity to improve effectiveness." The Federal Advisory Commission further stated that **"the Army's proposed laboratory consolidation and realignment should result in a more effective laboratory structure.... The commission supports this proposed consolidation."** Additionally, the DSB Task Force concluded that microelectronics is a pervasive technology and that "DoD needs a strong microelectronics science and technology program which encourages diversity and innovation in all phases from research through development and support. The objective of this program should be to assure Defense Department access to and insertion of microelectronics technology to support its needs." This DSB conclusion amplifies the current DoD emphasis on "technology insertion" and "horizontal integration" and highlights the criticality of the MRF at the Adelphi Laboratory Complex.

• **Page 13, paragraph 1** – "Our analysis of the Army's 'Report to the Defense Base Closure and Realignment Commission'... "

– ***Army Comment*** – **Nonconcur.** Delete paragraph. The Army strongly disagrees with the statements in this paragraph.

Rationale– Accuracy. The Army used the COBRA model for all of its cost estimates. The first sentence of this paragraph would indicate that the COBRA is flawed and thus all Army submittals may be incomplete. Furthermore, to state that the financial data is inaccurate is unsubstantiated. This document shows a total one time cost of approximately $318M which is indeed less than the $370M in the FY95 BRAC 91 Budget Submit to Congress. However, it must be noted that the original estimates are relatively gross and that more accurate estimates would be obtained during the development of the ARL Implementation Plan. The July plan indicates a total cost of approximately $371M, which is essentially the same as the FY95 Budget Submit. Furthermore, since the time of this budget submit the Army has reduced the scope of

the microelectronics research facility in accordance with guidance from the Director, Defense Research and Engineering, further reducing the total estimated cost to approximately $365 million...which is less than the ARL Plan. This figure represents the current working estimate for the Army Research Laboratory. " It should also be noted that the comment on "spending $306 million for a new microelectronics laboratory, new equipment, and personnel related costs" is absolutely inaccurate and seriously misleading...*this figure includes the personnel related costs for ALL of ARL, not just the personnel actions related to the Electronics and Power Supply Directorate (EPSD). Additionally, the IG's office persists in not comprehending that the EPSD is only one piece of the Adelphi Laboratory Center (ALC) and that the costs in the budget support more than just the microelectronics research facility. (See the Army comments for page 8, opening paragraph for additional clarification.) The total estimated cost for the ALC is approximately$205M, of which approximately $102 million is for the MRF, not $306 million cited by the draft IG report.*

Recommendations for Corrective Action

• **Page 13, paragraph 3 and 4** – "1. We recommend that the Under Secretary of Defense for Acquisition task the Defense Science Board to reevaluate the need for this new Army Microelectronics Laboratory from a DoD perspective, and advise the Secretary of Defense on whether continuing the project as currently approved is in the best interest of the Department of Defense." and "2. We recommend that the Comptroller of the Department of Defense withhold military construction funds for this project until an independent and objective analysis has been completed that justifies the proposed new Army Microelectronics Laboratory."

•• *Army Comment* – Nonconcur. The Army strongly disagrees with the recommendations for corrective action. Delete both paragraphs and replace with. "Based on the input from the Army, and the results of the previously conducted DSB Task Force study on microelectronics facilities in the DoD, we conclude that it is in the best interests of the Army and DoD for the construction of the proposed Army microelectronics research facility at Adelphi, MD to continue as per BRAC 91. No corrective action is required."

Rationale– This recommendation duplicates and is redundant of an extensive DSB Task Force effort that has already independently and objectively analyzed microelectronics from a "DoD perspective." The very first conclusion noted in the Executive Summary of the DSB Report stated "a single DoD microelectronics research facility would create barriers to interaction with system users and impair the ability to apply microelectronics technology" and also went on to state "Although this study supports consolidation of DoD microelectronics research facilities for materials growth, processing, and device fabrication, consolidation of all in-house microelectronics expertise is not desirable." As noted in the Army Comment for page 12, paragraphs 2 and 3, that the DSB also finds that "... each military department should have a single applications-oriented microelectronics facility selected from an existing Microelectronic Research Facilities (MRF) and closely associated with the development and user communities." The Army concurred on 18 Sept 92 in the conclusions and recommendations of the DSBTF on DoD MRF as it relates to consolidation of Army

applications-oriented microelectronics research at ARL, Adelphi. Recall also, that in a September 17, 1993 memorandum for the DoD Inspector General, Subject: Army Microelectronics Research Facility, the Director, Defense Research and Engineering identifies a revised net square feet of clean room area for the subject facility and states "this revision should result in lower construction costs and lower recurring costs. Under these circumstances, I do not plan to delay execution of the project." Moreover, according to the DA BRAC Office, the Comptroller of the Department of Defense does not have the authority to withhold BRAC funds without Congressional direction or approval.

Appendix A - Army Research Laboratory Military Construction Project for a Laboratory for Microelectronics (pp 16-17)

•• *Army Comment* – Nonconcur. Figures are not up to date and thus do NOT include the revised net square feet of clean room area identified in the September 17, 1993 memorandum for the DoD Inspector General, Subject: Army Microelectronics Research Facility, from the Director, Defense Research and Engineering. Replace with updated cost estimate at TAB A. It must also be emphasized that the appendix is incorrectly titled, which again highlights the lack of understanding of the construction and other activities at the Adelphi Laboratory Complex, of which the microelectronics facility which supports the EPSD is just a part. Note that the total estimated cost for the Adelphi Laboratory Center has been reduced from $168.8M to $135.4M.

Appendix B - Summary of Potential Benefits (p. 18)

•• *Army Comment* – Nonconcur. Delete.

Rationale -- Based on the Army comments above, and the conclusions of the Federal Advisory Commission and the DSB, it is evident that these "potential benefits" are in direct contradiction to what leading technical experts have already concluded.

Appendix A. Army Research Laboratory
Military Construction Project for
Adelphi Laboratory Center

Project No. 37066
Adelphi, Maryland

Proposed Area	Square Feet	Proposed Cost
PRIMARY FACILITY		$86,915
Clean Rm/Spec Labs	62,080	(23,350)
General R&T [1] & H6 Labs	72,160	(15,860)
Clean Rm & Spec Lab Spt	22,000	(2,800)
Clean Rm & Spec Lab S&E [2] lc	43,060	(5,520)
Lab Renovation	77,450	(6,390)
Parking Structure	227,200	(6,230)
Office Renovation	60,000	(1,800)
Admin Office	70,200	(9,000)
H/C [3] Plant Expansion	6,840	(3,210)
Building Code Deficiencies	148,000	(3,700)
High Bay Bldg Expansion	13,340	(1,520)
Chem Waste Trmt Fac	5,460	(1,320)
IDS [4] Installation	LS	(415)
EMCS [5]	LS	(3,350)
Building Information Systems	LS	(2,450)
SUPPORTING FACILITIES		4,370
Electric Service	LS	(553)
Water, Sewer, & Gas	LS	(283)
Steam and/or Chilled Water Dist	LS	(164)
Paving, walks, curbs & gutters	LS	(1,077)
Storm Drainage	LS	(1,020)
Site Imp (892) Demo ( )	LS	(892)
Information Systems	LS	(381)
ESTIMATED CONTRACT COST		91,285
CONTINGENCY PERCENT (5.46%)	0.055	5,021
SUBTOTAL		96,306
SUPERVISION, INSPECTION & OVERHEAD (6.00%)	0.06	5,778
TOTAL REQUEST		102,084
TOTAL REQUEST (ROUNDED)		102,100
REPLACEMENT EQUIPMENT-BCA 50		33,300
PROJECT TOTAL		$135,400

[1] Research & Technology
[2] Science & Engineering
[3] Heating & Cooling
[4] Intrusion Detection System
[5] Energy Monitoring & Control System

Department of the Navy Comments

DEPARTMENT OF THE NAVY
OFFICE OF THE ASSISTANT SECRETARY
(Research Development and Acquisition)
WASHINGTON D C 20350-1000

0 [illegible]

MEMORANDUM FOR ASSISTANT INSPECTOR GENERAL FOR AUDITING,
DEPARTMENT OF DEFENSE

Subj: DRAFT QUICK-REACTION REPORT ON MICROELECTRONICS (ELECTRONIC DEVICES) RESEARCH, DEVELOPMENT, TEST, AND EVALUATION LABORATORIES WITHIN DOD, 15 NOVEMBER 1993 (PROJECT NO. 3AB-0058.02)

Ref: (a) DODIG memo of 15 Nov 93

Encl: (1) Navy Response to DODIG draft audit report of 15 Nov 93

Although no recommendations were specifically directed to the Department of Navy (DON) by reference (a), a DON response to specific issues addressed in the subject draft report is provided in enclosure (1).

The Navy does not concur with the report's recommendation to have the Defense Science Board (DSB) conduct another study to reevaluate the need for the Army Microelectronics Applications Laboratory. The DSB Task Force on Microelectronics Research Facilities released its report in June 1992. It was a thorough study that recommended there be one applications facility per Service and one corporate science and technology laboratory facility to serve all Services and Defense Agencies, specifically identified as the Naval Research Laboratory, Washington, D.C. These recommendations are still valid.

Nora Slatkin

NORA SLATKIN

Copy to:
CNO (N091)
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Department of the Navy Response

to

DODIG Draft Report of November 15, 1993

on

Microelectronics (Electronics Devices)
Research, Development, Test, and Evaluation Laboratories
Within DOD (Project No. 3AB-0058.02)

PART II - FINDING AND RECOMMENDATIONS

RECOMMENDATIONS FOR CORRECTIVE ACTION

Page 13, Recommendation 1:

"We recommend that the Under Secretary of Defense for Acquisition task the Defense Science Board to reevaluate the need for this new Army Microelectronics Laboratory from a DOD perspective, and advise the Secretary of Defense on whether continuing the project as currently approved is in the best interest of the Department of Defense."

DON Position: Nonconcur. The recommendation calling for an additional Defense Science Board (DSB) study on electronics research facilities of the Services and Defense Agencies is unnecessary. The 1992 DSB Task Force on Microelectronics Research Facilities was composed of high ranking and world class technical non-partisan experts in the field. It was a thorough study with sound recommendations. Circumstances in the DOD and technical community are effectively the same today as they were in 1992. Their findings and recommendations are still valid.

PART II - FINDING AND RECOMMENDATIONS

INDEPENDENT REVIEW AND RECOMMENDATIONS

Page 12, Paragraph 2:

"The Defense Science Board Task Force on Microelectronics Research Facilities released its report in June 1992, concluding that a single DOD Tri-Service microelectronics facility should be capable of developing Defense-unique technologies. The study also concluded that one research facility serving the needs of all DOD was necessary and sufficient...."

Enclosure (1)

DON Comment: A key recommendation of the 1992 DSB Task Force Report is misquoted. The DSB Task Force Report recommended that there be one application electronics facility per Service to be located at a then (1992) existing major electronics RDT&E Service site and one corporate Science and Technology laboratory facility to serve all Services and Defense Agencies. This latter facility was specifically designated in the report to be the existing Microelectronics facilities at the Naval Research Laboratory, Washington, D.C. Text should be corrected to reflect the complete and correct version of this recommendation.

2

Department of the Air Force Comments

DEPARTMENT OF THE AIR FORCE
WASHINGTON DC

OFFICE OF THE ASSISTANT SECRETARY

December 1, 1993

MEMORANDUM FOR DOD INSPECTOR GENERAL, ACQUISITION MANAGEMENT DIRECTORATE (MR. DONALD E REED)

SUBJECT: Draft Audit Report on Advanced Materials and Microelectronics (Projects 3AB-0058-01 and 3AB-0058-02)

The Air Force has reviewed the "Draft Quick-Reaction Reports" on microelectronics (Project No AB-0058-02) and materials (Project 3AB-0058-01). Comments on the findings in these reports are attached.

We cannot comment on legal or contractual issues regarding the proposed new facilities for the Army and Navy. However, we do agree that an independent assessment by outside technical experts, such as the DSB, would be of value in technically assessing unique aspects of laboratory facility utilization. Should an additional assessment of materials laboratories be conducted, we recommend that of a "two laboratory option" alternative also be evaluated: (1) a joint Services air and space materials and processes laboratory led by the Air Force at Wright Laboratory and (2) a joint Services land and sea materials and processes laboratory, led by the Army or Navy at a site or sites to be determined "

Apart from the Military Construction Program issues identified by the DOD IG, we believe that there is much more value to be gathered from a more vigorous application of the Tri-Service Reliance process to total program content, and also to identify and resolve major facility and equipment issues

JAMES J. MATTICE
Deputy Assistant Secretary
(Research & Engineering)

Atchs

Final Report
Reference

SUBJ: Draft Audit Report on Microelectronics RDT&E Laboratories within DOD, 15 Nov 93 (Project No SAB-0058-92)

The following are the responses by the Air Force to findings in the above referenced draft report:

Finding 1 - page 12

"The Defense Science Board Task Force on Microelectronics Research Facilities released its report in June 1992, concluding that a single DOD Tri-Service microelectronics facility should be capable of developing Defense-unique technologies. The study also concluded that one research facility serving the needs of all DOD was necessary and sufficient."

Comment: This finding misstates the DSB Task Force conclusions as documented in its final report. Specifically, the DSB Task Force report recommended that each Service maintain a microelectronics facility for applications to Service needs, and that these facilities be selected from existing primary facilities. It also recommended that a single Tri-Service corporate microelectronics research facility be designated to address the long-range needs common to the three Services. The Air Force commented on the Task Force's recommendations via a SAF/AQT letter dated 19 Feb 93; those comments are still germane.

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