

U.S. DEPARTMENT OF ENERGY
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AUDIT OF CONSTRUCTION MANAGEMENT

AT THE IDAHO NATIONAL ENGINEERING LABORATORY

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OFFICE OF INSPECTOR GENERAL
OFFICE OF AUDIT SERVICES
WESTERN REGIONAL AUDIT OFFICE

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October 18, 1995

SUMMARY

The Secretary of Energy's streamlining initiatives, coupled with established policy, require the Idaho Operations Office (Idaho) to ensure that its construction projects are necessary and justified. Accordingly, the objectives of this audit were to determine if Idaho was validating project plans; identifying and evaluating construction project alternatives; and reassessing the need for planned construction in accordance with the Laboratory's decreasing mission needs.

Although Idaho has made a commitment to streamline operations and make the Laboratory less costly to operate, our audit identified seven ongoing construction projects, totaling over \$40 million, that were either not needed or larger than needed. This occurred because Idaho either did not document or perform an independent verification, evaluation, and reassessment of the need for these seven projects.

We recommended that the Manager, Idaho Operations Office, review construction project plans and cancel those projects that do not support the Laboratory's current and foreseeable mission; independently identify and consistently evaluate alternatives; limit needed projects to the minimum size required to achieve the Laboratory's mission; and reassess the need for and size of construction projects when significant events occur. By implementing these recommendations, Idaho could save about \$26.4 million.

Management concurred with the finding and recommendations presented in the report and has already initiated corrective actions in response to the recommendations.

PART I

APPROACH AND OVERVIEW

INTRODUCTION

The Secretary of Energy envisions the Department operating more cost effectively, while maintaining its level of service to the American public. It is, therefore, imperative for Idaho to limit construction projects to those that are vital for supporting the Laboratory's mission and to complete those projects in the most economic and efficient manner possible. Accordingly, the objectives of this audit were to determine if Idaho was validating project plans; identifying and

evaluating construction project alternatives; and reassessing the need for planned construction projects.

SCOPE AND METHODOLOGY

The audit was conducted at the Idaho Operations Office and the Laboratory from January through July 1995. According to a construction project listing covering Fiscal Years 1992 through 2000, Idaho had 290 projects totaling over \$2.8 billion in various stages of construction (conceptual design through completion). We randomly selected and reviewed 52 projects totaling over \$465.9 million.

To accomplish the audit objectives, we:

reviewed Federal laws and regulations, Office of Management and Budget circulars, and Departmental orders;

interviewed personnel responsible for managing, reviewing, and evaluating construction project proposals;

reviewed construction project documents, such as validation reports, project listings, design reports, functional and operational requirement reports; and,

toured existing facilities and sites where construction projects were either ongoing or planned.

We performed the audit according to generally accepted Government Auditing Standards for performance audits and included assessments of internal controls and compliance with laws and regulations, to the extent necessary, to satisfy the audit objectives.

We assessed significant internal controls with respect to the Department's project management system. Our assessment included identifying and reviewing key internal control procedures for evaluating the need for construction projects. Since we did not rely extensively on computer processed data, we did not fully assess the reliability of that data. Because our review was limited, it would not necessarily have disclosed all internal control deficiencies that may have existed at the time of our audit. An exit conference was held on October 17, 1995.

BACKGROUND

The Laboratory located in and around Idaho Falls, Idaho, is the largest applied engineering facility within the Department's national laboratory system. Initially chartered in 1949, the Laboratory was instrumental in establishing the U.S. Navy's nuclear submarine fleet, supporting the commercial nuclear power industry, and recovering uranium from spent nuclear fuel. For more than 40 years, these three missions were the focus of the Laboratory's operations.

Until the end of Fiscal Year 1994, five contractors managed and operated the Laboratory. Then, in October 1994, the Department's consolidated contract with Lockheed Idaho Technologies Company (Lockheed) became effective and, in November, the Laboratory's primary mission changed from supporting national defense and the commercial nuclear power industry to environmental restoration and waste management. Although the Laboratory will continue supporting national defense and the commercial nuclear power industry, the focus of its current environmental management mission is the storage, treatment, stabilization, and disposal of radioactive waste stored at the Laboratory.

OBSERVATIONS AND CONCLUSIONS

According to the Secretary's "Saving Dollars and Making Sense" report of May 3, 1995, the Department is committed to making its operations smaller and less costly to operate. As part of that commitment, the Secretary announced several initiatives and proposed legislation that will reduce the Department's budget by \$14.1 billion over five years and contribute more than \$5.3 billion to future deficit reductions.

In response to those streamlining efforts, Idaho initiated several actions that are consistent with the Secretary's deficit reduction goals. Idaho's budget requests, for example, have decreased from \$818.6 million in 1994 to \$678 million in Fiscal Year 1996. Idaho also canceled 4 of the 290 construction projects totaling more than \$7.6 million and returned those funds as part of a Fiscal Year 1995 budget rescission. Furthermore, Idaho plans to consolidate the security facilities at the Idaho Chemical Processing Plant and build an emergency response training facility at the Central Facilities Area. Combined, those two construction projects are expected to reduce operating costs by as much as \$3.9 million, annually.

Although Idaho's actions effectively reduced costs, additional reassessments of construction projects could potentially result in saving and reprogramming \$26.4 million identified by the audit. For example, the audit identified five construction projects totaling approximately \$4.3 million that are not needed and two others totaling \$38 million that are oversized by a combined \$22.1 million. The five projects that are not needed are located in Test Area North, the Idaho Chemical Processing Plant, and the Naval Reactors Facility. The two remaining projects that are oversized include the Administrative Support Facility and Health Physics Instrument Laboratory at the Central Facilities Area. Because Idaho did not verify or reassess the need for these projects based on the Laboratory's mission change in Fiscal Year 1995, it continued pursuing and budgeting for these seven projects. If Idaho verifies and reassesses the need for all planned construction projects now, however, it could potentially save and reprogram more than the \$26.4 million that we identified for these seven sample projects.

In our opinion, management should consider the finding in this report when preparing its yearend assurance memorandum on internal controls.

PART II

FINDINGS AND RECOMMENDATIONS

Laboratory Construction Projects

FINDING

The Secretary's streamlining efforts since 1993, coupled with established policy, require the Idaho Operations Office to ensure that all construction projects are needed to support the Laboratory's mission and are cost-effective. However, our audit identified five facility upgrade and expansion projects totaling about \$4.3 million that are not needed to support the Laboratory's mission. It also identified two facility replacement projects that Idaho can downsize by as much as a combined \$22.1 million. Idaho continued to pursue and budget for these projects because it did not (1) consistently verify the need for these projects; (2) independently identify and evaluate alternatives; and (3) reassess the need for these projects in light of the Laboratory's current and foreseeable mission requirements. By consistently verifying, independently identifying and evaluating

alternatives, as well as reassessing the need for all construction projects now, however, Idaho can potentially save and/or reprogram the \$26.4 million identified by the audit.

RECOMMENDATIONS

We recommend that the Manager, Idaho Operations Office review construction projects to determine whether they support current or foreseeable mission needs. As part of this review, we recommend that the Manager:

cancel planned construction projects that do not support the Laboratory's current and foreseeable mission;

for those construction projects that are needed, independently identify and consistently evaluate alternatives and limit the size to that required to achieve the Laboratory's mission; and,

reassess the need for and size of construction projects when significant events occur.

MANAGEMENT REACTION

Management concurred with the finding and recommendations, and has initiated corrective actions. Detailed management and auditor comments are provided in Part III of this report.

DETAILS OF FINDING

According to the Secretary of Energy's streamlining efforts, the Department is committed to making the Laboratory smaller and less costly to operate. The Department accepted, for example, a National Performance Review challenge to streamline operations and consolidated five former Laboratory contractors into one management and operating contractor (Lockheed). Furthermore, the Secretary's Strategic Alignment Initiative states that these streamlining efforts will continue over the next five years. Achieving the Secretary's goal of streamlining, however, will require Idaho to consistently employ prudent business practices and industry standards to effectively challenge construction projects that are not consistent with the Laboratory's current and foreseeable mission.

Lockheed's management and operating contract with the Department includes project responsibilities encompassing all construction project phases from conceptual design through construction completion. In addition, Department Order 430.1, "Life Cycle Asset Management," (Order) requires Idaho to (1) consistently verify the need for planned construction, (2) independently identify and consistently evaluate all competing project alternatives; and (3) reassess the need for planned construction projects when significant events occur such as a mission change or program redirection. (This Order supercedes the previous Department Order on project management.)

UNNEEDED AND OVERSIZED LABORATORY CONSTRUCTION PROJECTS

Although Idaho had taken action to effectively reduce costs, the audit identified 7 of 52 construction projects that were either not needed or larger than needed to meet the Laboratory's current and foreseeable mission. Five of the unneeded projects (\$4.3 million) are located in Test Area North, the Idaho Chemical Processing Plant, and the Naval Reactors Facility. The two oversized projects

(\$22.1 million) include the Administrative Support Facility and Health Physics Instrument Laboratory, at the Central Facilities Area.

Upgrade Buildings 601 and 602

The Fiscal Year 1995 Site Development Plan indicates that Test Area North will close within the next 15 years because the programs there will end around Fiscal Year 2010. Notwithstanding the scheduled closure of Test Area North, Laboratory officials planned to upgrade buildings 601 and 602 at a cost of \$981,000. This project, scheduled to begin in the third quarter of Fiscal Year 1996, calls for replacing, or upgrading, the water pipes and valves around the guard house (building 601) and administrative office building (building 602). However, buildings 601 and 602 are scheduled to close by the end of Fiscal Year 1995, at which time their utilities will be turned off and, when funding becomes available, they will be demolished.

Upgrade Project at Test Area North Building 607

Laboratory officials also planned to upgrade the records storage area in building 607 at a cost of \$200,000. The justification statement asserted that upgrading this space was needed to improve the safety, reliability, and security for storing sensitive records for the Three Mile Island reactor core storage project as well as the records for the Specific Manufacturing Capability Program. However, the Department is planning to ship the Three Mile Island reactor core and associated records to the Idaho Chemical Processing Plant. Additionally, the Specific Manufacturing Capability Program is scheduled to end around Fiscal Year 2000. Because these programs as well as the associated records will leave Test Area North, there is no need to upgrade the records storage area in building 607. After we met with management, Idaho determined that the existing records storage area was adequate and reprogrammed the funding to other projects.

Bunkhouse Expansion Project

According to the Site Development Plan, Laboratory officials plan to expand a bunkhouse at the Idaho Chemical Processing Plant. The proposed bunkhouse expansion was estimated to cost about \$670,000 and be completed in Fiscal Year 1995. Initially, Lockheed proposed this expansion project in 1994 to accommodate employees who become too tired to drive home after working long hours at the Plant, even though the Laboratory's bus service is available to transport these employees home. Additionally, Lockheed justified the expansion project as a means to house employees who may become stranded at the Plant during severe winter weather. Although this justification appears reasonable, it does not in itself justify expanding the existing bunkhouse. For example, management did not provide a basis for determining the number of employees who could become stranded at any one time or whether current facilities could not or would not temporarily accommodate these employees. We also noted that there are a number of vacant facilities which could be temporarily converted to accommodate stranded employees at a cost significantly less than \$670,000. After our meeting with management, Idaho reassessed the need for the bunkhouse expansion project and terminated it.

Retrievable Records Storage Facility

Laboratory officials also planned to construct a 4,800 square foot Retrievable Records Storage Facility at a cost of nearly \$1.6 million to bring its records storage practices into compliance with Federal and Departmental requirements. The Facility was to provide a safe and central location to control, track, file, retrieve, and microfilm various Plant records. However, office space

that is already vacant could be used to satisfy the records storage requirements. We noted, for example, a vacant facility adjacent to the area where Lockheed was proposing to construct this new building that could be used to store retrievable records. According to the Site Development Plan, this vacant facility contains more than 160,000 square feet of space, was built in 1992, and has never been used. Of these 160,000 square feet, only 4,800 square feet are needed for the Retrievable Records Storage Facility. We, therefore, concluded that using vacant space is a viable and less expensive alternative to constructing a new facility. After we met with management, Idaho reassessed the need for this project and terminated it.

Parking Lot Upgrade

Our audit also showed that Laboratory officials planned to spend more than \$1.3 million upgrading a parking lot at the Naval Reactors Facility were inconsistent with a Lockheed engineering report. According to Lockheed's PAVER system, Laboratory roads and parking lots are not subject to extensive or major repairs until they are inspected and receive a rating of less than 60. On a scale of 0 to 100, with a score of 100 being the best, a 1991 inspection rated the Reactors' parking lot at 73. The PAVER system also projected a rating of 65 for August 31, 1998. Despite this data, however, Lockheed planned to spend more than \$1.3 million to upgrade this parking lot in 1995. Consequently, we concluded that the anticipated expenditure is not needed until Fiscal Year 1998, or beyond, and that Idaho may be able to use the 1995 funds for higher priority projects. After our meeting with Idaho, management reviewed the need for this project and changed its scope to rehabilitation of a road leading to the Naval Reactors Facility, at a cost of \$450,000.

Administrative Support Facility

In 1995, Lockheed proposed building an 80,000 square foot Administrative Support Facility. However, the size of this facility is not consistent with the Laboratory's mission change, contract consolidation, and Lockheed's workforce reduction of nearly 1,250 positions. According to the validation report and project data sheet, this construction will replace and consolidate approximately 17,000 square feet of existing space in ten buildings around the Central Facilities Area. Since the proposed facility was 63,000 square feet larger than the combined size of the existing facilities and the extra size was unjustified, we concluded that \$17.4 million would unnecessarily be spent on this project. As of October 1, 1995, Idaho placed this project on indefinite hold and is presently reassessing the need for and scope of this project in light of changing missions.

Health Physics Instrument Laboratory

Lockheed also proposed building a 21,000 square foot Health Physics Instrument Laboratory. However, this facility also is larger than needed. According to the validation report, project data sheet, and conceptual design report, this construction project will replace an existing 15,000 square foot Laboratory. If the scope of the proposed Laboratory was reduced to 15,000 square feet, costs could be reduced by as much as \$4.7 million. After we met with management to discuss this project, Idaho requested Lockheed to investigate other options such as privatizing the facility.

VERIFYING AND REASSESSING THE NEED FOR PLANNED CONSTRUCTION

Although Lockheed has the authority to manage construction projects from conceptual design through project completion, Idaho still has responsibility, under Department Order 430.1, to verify the need for construction, identify and

evaluate alternatives, and reassess need when significant events occur. This responsibility includes reviewing and approving technical reports, drawings, specifications, and technical information delivered by the contractor. In contrast to this responsibility, however, Idaho continued to pursue and budget for the seven construction projects because it did not (1) verify the need for at least one project; (2) identify and evaluate all competing alternatives; and (3) reassess the need for the six remaining projects in light of the Laboratory's decreasing mission requirements.

As part of verifying that a need exists to construct facilities, the Order requires Idaho to obtain and review Lockheed's conceptual design report, functional and operational requirements, and a justification statement for planned construction projects. Idaho should also review these documents to determine if they are consistent with the Laboratory's current and foreseeable mission. For 6 of the 7 projects reviewed, Idaho initially verified that the construction projects were consistent with the Laboratory's mission. For the Administrative Support Facility, however, Idaho did not thoroughly review a copy of the conceptual design report, or revise and update the functional and operational requirements and justification statement to ensure that the \$22.1 million Administrative Support Facility was needed, in its entirety, to support the Laboratory's mission.

In addition, Idaho did not independently identify and evaluate all competing project alternatives for the Administrative Support Facility, as required by the Order. According to the documentation for this project, Idaho identified only two alternatives -- either to do nothing or upgrade existing buildings. The three other alternatives that Idaho either did not consider or did not fully evaluate included (1) upgrading existing buildings; (2) transferring the administrative functions to another Laboratory mission area; or (3) determining whether a need continued to exist for these administrative functions. In the absence of a thorough identification and evaluation of alternatives, Idaho cannot ensure that constructing the Administrative Support Facility is the most cost-effective solution.

Furthermore, Idaho either did not perform or did not fully document a required current reassessment of the need for the six remaining projects in light of the Laboratory's mission change and streamlining initiatives that began in Fiscal Year 1995. For example, Idaho continued using outdated results of two studies to justify the Health Physics Instrument Laboratory project at the Central Facilities Area. Idaho also continued using the results of a 1991 study to justify the two upgrade projects at Test Area North. Finally, Idaho scheduled the parking lot upgrade project at the Naval Reactors Facility without performing an additional engineering inspection before approving the project. Without either performing or fully documenting a reassessment of the need for these six projects, Idaho cannot sufficiently ensure they are consistent with the Laboratory's mission.

ESTIMATED SAVINGS

By examining the seven construction projects identified in this report, Idaho can potentially save and reprogram about \$26.4 million identified by the audit. This amount includes about \$981,000 for the upgrade project at buildings 601 and 602 and \$200,000 for the records storage upgrade at building 607 within Test Area North. Our estimate also includes \$670,000 for the bunkhouse expansion project and nearly \$1.6 million for the records storage facility at the Idaho Chemical Processing Plant as well as about \$850,000 for the rescope parking lot upgrade project at the Naval Reactors Facility. Finally, we estimate that Idaho can save more than \$17.4 million for the proposed Administrative Support Facility

and more than \$4.7 million for the Health Physics Instrument Laboratory at the Central Facilities Area.

During our audit, we randomly selected and reviewed 52 projects totaling more than \$465.9 million. Of those 52 projects, our audit identified five that were not needed to achieve the Laboratory's mission. It also identified two planned construction projects that are potentially larger than needed in light of the Laboratory's decreasing mission requirements. The combined potential savings for these projects is approximately \$26.4 million.

PART III

MANAGEMENT AND AUDITOR COMMENTS

In responding to the Initial Draft Report, management stated that the Inspector General's audit was value-added and provided an overall balanced perspective of the construction management process at the Idaho Operations Office. Management also expressed its appreciation for the cooperative, courteous, and professional attitude exhibited by the Inspector General's office during the audit. Idaho management stated further that it is working to improve and rectify the weaknesses identified in the report and provided several examples, which we have included in the text.

Recommendation 1

Management Comments. Management concurred with our recommendation to review and cancel planned construction projects that do not support the Laboratory's current and foreseeable mission. Specifically, management stated that the Office of Infrastructure Management conducts formal monthly, quarterly, mid-year, and year end meetings to assess the need for planned construction projects in relation to the Laboratory's current and foreseeable mission. Additionally, these are procedures that Idaho will continue implementing under the new Life Cycle Asset Management order.

Auditor Comments. Management comments and actions are responsive to the recommendation.

Recommendation 2

Management Comments. Management also concurred with our recommendation to independently identify and consistently evaluate alternatives and to limit the size of construction projects to that required to achieve the Laboratory's mission. In its response to this recommendation, management stated that Idaho will independently identify and consistently evaluate alternatives and limit the size of construction projects as part of implementing the Department's Life Cycle Asset Management order during the first part calendar Year 1996.

Auditor Comments. Management comments and actions are responsive to the recommendation.

Recommendation 3

Management Comments. Finally, management concurred with our recommendation to reassess the need for and size of planned construction projects when significant events occur. Specifically, management stated that formal monthly meetings are held in order to reassess the need for and size of construction projects when significant events occur. Also, the recommendation to reassess construction

projects will be addressed in more detail in the Life Cycle Asset Management order that Idaho will implement in the first part of calendar year 1996.

Auditor Comments. Management comments and corrective actions are responsive to the recommendation.

PART IV

OTHER MATTERS

Classifying Projects

According to Department Order 4700.1, "Project Management System," the Department's field elements are responsible for ensuring the proper classification of all construction projects. Specifically, this Order requires the Department's field elements to classify all projects exceeding \$2.0 million as line item construction projects, and to obtain approval from Congress before initiating these types of projects. When projects cost less than \$2 million, the Order requires the Department's field elements to classify them as a General Plant Project. This category includes general plant projects, operating expense funded projects and, in some cases, capital equipment projects that do not require congressional approval because Congress typically approves a single overall amount for these types of projects in the Department's annual budget.

We found, however, that a former management and operating contractor official split into three other projects a \$3.33 million voice paging and evacuation system upgrade project. Specifically, Westinghouse Idaho Nuclear Company (Westinghouse), a former management and operating contractor, identified a need to upgrade the voice paging and evacuation system at the Idaho Chemical processing plant during a 1989 and 1990 review of that system. As a result of the 1989 review, Westinghouse discovered several deficiencies that would cost about \$1.1 million to correct. Then, in 1990, Westinghouse conducted another evaluation of the system and found numerous deficiencies that increased the original estimate from \$1.1 million to more than \$3.3 million. Consequently, Idaho should have classified this comprehensive project as a line item in the Department's annual budget.

However, the Westinghouse official responsible for the voice paging and evacuation system upgrade project split it into three "other projects." These three "other projects" included a \$1.1 million general plant project for the voice paging part of the project; a \$2.2 million capital equipment acquisition for the emergency communication upgrade part of the project; and an additional \$30,000 was transferred to an unrelated fire and life safety upgrade project. According to the internal correspondence documents that we obtained and reviewed, this occurred because the former Westinghouse official believed the Department would not approve the entire project as a single line item. Consequently, Westinghouse split the project into three separate projects that will be completed by the end of Fiscal Year 1995 at a total cost not to exceed \$3.33 million. Idaho believes that these three projects can be justified as stand-alone projects and, therefore, qualify as legal and rational General Plant Projects under the Department's funding determination guidance.

The Office of Inspector General is not questioning the need for the initial voice paging and evacuation system upgrade project, or the three resulting projects, since the nature of the Idaho Chemical Processing Plant's nuclear storage mission requires a reliable voice paging and emergency evacuation system. Instead, the Office of Inspector General believes that Idaho's internal controls are weak in

detecting and preventing future instances of project splitting. Accordingly, the Idaho Operations Office should also consider this condition when preparing its year end assurance memorandum on internal controls.

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