

U.S. DEPARTMENT OF ENERGY
PROPOSED FINDING OF NO SIGNIFICANT IMPACT
CONSOLIDATION OF THE NONNUCLEAR COMPONENT
WITHIN THE NUCLEAR WEAPONS COMPLEX

Published in Federal Register July 8, 1993

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AGENCY: Department of Energy

ACTION: Proposed Finding of No Significant Impact

SUMMARY: The Department of Energy (DOE) issues this proposed Finding of No Significant Impact (FONSI) on its proposal to consolidate certain nonnuclear component manufacturing, surveillance, and storage functions of the Nation's Nuclear Weapons Complex (Complex). This proposed finding is based on the DOE "Nonnuclear Consolidation Environmental Assessment" (EA), DOE/EA-0792, June 1993, which analyzes the proposed consolidation of these nonnuclear functions that DOE performs in the Complex. The DOE sites involved in the nonnuclear consolidation proposal are the Kansas City Plant (KCP) in Kansas City, Missouri; Los Alamos National Laboratory (LANL) in Los Alamos, New Mexico; the Mound Plant (Mound) in Miamisburg, Ohio; the Y-12 Plant in Oak Ridge, Tennessee; the Pinellas Plant (Pinellas) in Largo, Florida; the Rocky Flats Plant (RFP) in Golden, Colorado; Sandia National Laboratories, New Mexico (SNL/NM) in Albuquerque, New Mexico; and the Savannah River Site (SRS) near Aiken, South Carolina. DOE's proposed action is to consolidate certain nonnuclear manufacturing activities at KCP, relocate others to SRS, LANL, and SNL/NM, and close out the Complex missions at Mound and Pinellas, and Complex nonnuclear missions at RFP. The proposed action responds to Presidential initiatives, including the START II Treaty, to reduce the nation's nuclear weapons stockpile, and is expected to achieve more efficient and effective management of nonnuclear functions within the Complex, while also decreasing the long-term operating costs of this aspect of the Complex. The proposed action is part of DOE's larger proposal to reconfigure the entire Complex. The remainder of this reconfiguration proposal is being analyzed in the Nuclear Weapons Complex Reconfiguration Programmatic Environmental Impact Statement (PEIS).

Based on the analyses in the EA, DOE believes that the proposed action is not a major Federal action significantly affecting the quality of the human environment within the meaning of the National Environmental Policy Act (NEPA) of 1969, 42 U.S.C. 4321 et seq. Therefore, DOE proposes to issue a Proposed FONSI pursuant to the Council on Environmental Quality regulations implementing NEPA (40 CFR Parts 1500-1508) and the DOE NEPA implementing regulations (10 CFR Part 1021). This Proposed FONSI and the supporting EA are being made available for public review and comment for a period of 30 days following the date of this notice. DOE will consider comments received in making a final determination on whether to issue a FONSI or to incorporate the analysis of proposed consolidation of the nonnuclear component of the Complex into the Reconfiguration PEIS.

INVITATION TO COMMENT: DOE invites the public, including states which host these DOE facilities and Indian tribes that might be affected by the proposed action, to comment on this proposed FONSI. Please direct any comments to Mr. Howard R. Canter at the address presented in the following section.

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In accordance with 40 CFR 1501.4(a)(2)(i) and 10 CFR 1021.322(d), DOE is making this proposed FONSI available for public review for 30 days.

DOE has made the EA and related documents available to the public. Copies of the EA are available upon request at the address given below. DOE will also make public comments received on this proposed FONSI available to the public. The EA, Nonnuclear Consolidation Plan (DOE, September 1991), and other material pertaining to this proposal are available for public review at the DOE public reading rooms listed below.

California

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Oakland, California 94612
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Oak Ridge, Tennessee 37831
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Illinois

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National Atomic Museum
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Albuquerque, New Mexico 87185
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Los Alamos National Laboratory
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Amarillo, Texas 79109
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Richland, Washington 99352
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1000 Independence Avenue, SW
Washington, D.C. 20585
(202) 586-6020

For information on the availability of specific documents and hours of operation, please contact reading rooms at the telephone numbers provided.

DATES: Comments on the proposed FONSI should be postmarked by August 9, 1993, to ensure consideration. Comments postmarked after that date will be considered to the extent practicable.

ADDRESSES: Written comments on the proposed FONSI and requests for copies of the Nonnuclear Consolidation EA or the EA Executive Summary should be directed to:

Howard R. Canter
U. S. Department of Energy
Weapons Complex Reconfiguration Office
P.O. Box 3417
Alexandria, VA 22302

FOR FURTHER INFORMATION CONTACT: Requests for further information on the proposed project or the Nuclear Weapons Complex Reconfiguration Program should be sent to:

Howard R. Canter
U.S. Department of Energy
Weapons Complex Reconfiguration Office, DP-40
1000 Independence Avenue, SW.
Washington, D.C. 20585
(202) 586-1300

For general information on the DOE NEPA review process, contact:

Carol M. Borgstrom
U.S. Department of Energy
Office of NEPA Oversight (EH-25)
1000 Independence Avenue, SW.
Washington, D.C. 20585
(202) 586-4600 or (800) 472-2756.

SUPPLEMENTARY INFORMATION: On December 16, 1991, the then Secretary of Energy announced his decision to prepare an EA for the consolidation of nonnuclear functions of the Complex. The public notice regarding the Secretary's decision was published on January 27, 1992 (57 FR 3046). The nonnuclear consolidation proposal is based upon the DOE Nonnuclear Consolidation Plan (NCP), September 1991, as amended. The NCP also provided the basis for determining the consolidation alternatives analyzed in the EA. DOE determined that the proposal to consolidate nonnuclear facilities could be analyzed in an EA prior to completion of the Reconfiguration PEIS (see 40 CFR 1506.1(c)) because (1) there are significant benefits for the nation from nonnuclear consolidation, i.e., cost savings and preservation of technical competence, whether the rest of the Complex is reconfigured or not, and (2) decisions regarding nonnuclear consolidation will neither affect nor be affected by decisions to be made following the completion of the Reconfiguration PEIS.

A preapproval review copy of the EA was sent to affected states and Indian Tribes for comment in December 1992. Comments received during the review period were taken into account in preparing the final EA. Appendix G of the EA contains all comments received and DOE responses.

As required by the Energy and Water Development Appropriations Act, 1993 and the National Defense Authorization Act for Fiscal Year 1993, DOE also prepared and submitted to Congress the Nonnuclear Reconfiguration Cost Effectiveness Report (CER) on January 15, 1993. Each of three independent consultants, appointed by Energy Secretary Hazel R. O'Leary to review the CER and accompanying certifications, confirmed on May 25, 1993, that the proposed consolidation is cost effective and would not increase the technological, environmental, safety, or health risks associated with Departmental activities. Their review and conclusions did not result in any changes to the proposed nonnuclear consolidation proposal, and the Secretary made the decision to proceed with the Nonnuclear Consolidation process. If supported by the EA, a FONSI would allow DOE to accelerate the proposed consolidation of nonnuclear facilities in response to Presidential initiatives to reduce the Nation's nuclear weapons stockpile.

PROPOSED ACTION: DOE proposes to terminate the Complex missions at Mound and Pinellas, and Complex nonnuclear missions at RFP. The nonnuclear electrical and mechanical manufacturing functions would be consolidated at KCP. Existing research, development, and testing (RD&T) and prototype fabrication capabilities at LANL and SNL/NM would be augmented to provide a limited fabricating capability for future neutron generator work, high power detonators, beryllium technology, pit support functions, and other nonnuclear components now located at Mound, Pinellas, and RFP. These enhanced capabilities would be used to satisfy future weapons stockpile needs, if and when identified. Tritium-handling functions now performed at Mound and Pinellas would be consolidated with tritium functions now located at the Savannah River Site (SRS) and LANL, respectively. The capabilities transferred to KCP, SRS, LANL and SNL/NM would, for the most part,

be integrated into the existing plant facilities with appropriate plant modifications and renovations. The nonnuclear manufacturing workload would be downsized at all sites in response to Presidential initiatives, including START II, to reduce the nuclear weapons stockpile. The following specific actions are proposed:

- Mission Closeouts--Complex missions at Mound and Pinellas and the Complex nonnuclear missions at RFP would be terminated, and associated nonnuclear facilities turned over to the DOE Office of Environmental Restoration and Waste Management (EM) for cleanup and restoration.

- Electrical and Mechanical--The nonnuclear electrical and mechanical capabilities now at Mound, Pinellas, and RFP would be consolidated at KCP within existing facilities.

- Tritium-Handling--All tritium-handling capabilities now performed at Mound would be relocated to be with the tritium functions now performed at SRS. The neutron tube target loading for the current design of neutron generators, now performed at Pinellas, would be completed. Capability for future neutron tube target loading requirements would be provided within existing facilities at LANL.

- Detonators--The existing RD&T and prototyping capability at LANL would be enhanced to provide a limited manufacturing capability for high power detonators, now done at Mound. (The existing RD&T technology base for low-power explosives components would be maintained at SNL/NM; the existing capabilities at Mound to manufacture these components would no longer be needed.)

- Beryllium Technology and Pit Support--The existing technology base and prototyping capability at LANL would be enhanced to provide limited manufacturing capability for beryllium technology and pit support work now done at RFP.

- Neutron Generators, Cap Assemblies, and Batteries--Manufacture of the current design of neutron generators at Pinellas would be completed. The existing technology base for neutron generators would be maintained at SNL/NM. Existing RD&T and prototyping capability at SNL/NM would be augmented to provide a limited manufacturing capability for future advanced design neutron generators. Manufacturing capability for cap assemblies would be relocated from Pinellas to existing facilities at SNL/NM. The technology base now at Pinellas for the manufacture of thermal batteries would be transferred to existing facilities at SNL/NM; manufacture of the batteries would continue to be performed by the private sector. The assembly of lithium ambient batteries from commercially acquired lithium cells would be transferred to KCP.

- Special Products--The nuclear grade steels procurement and storage capability, safe secure trailer manufacturing capability, weapons trainer shop, and metrology services would be transferred from RFP to KCP. The calorimeter manufacturing capability would be relocated from Mound to existing facilities at LANL. The milliwatt heat source surveillance activities would be relocated from Mound to SNL/NM.

Purpose and Need. DOE has proposed to reconfigure the Complex to be smaller, less diverse, and less expensive to operate. The Complex must safely and reliably support whatever nuclear deterrent stockpile objectives are established

in the future by the President and funded by Congress. The Nation's nuclear weapons manufacturing requirements are not as great as they were in the past, and maintaining a large manufacturing infrastructure is not a productive use of national resources.

The purpose of nonnuclear consolidation is to manage better nonnuclear manufacturing activities within the Complex, and to decrease the long-term operating costs of the Complex. In addition, consolidation of the nonnuclear manufacturing activities would provide a means to maintain the specialized skill base needed to produce and test these components, as workload requirements decrease significantly.

The nonnuclear products and services of the Complex are needed to design and manufacture nuclear weapons and test individual components. DOE needs to maintain a nonnuclear capability in order to be able to manufacture, test, and monitor nuclear weapons.

ALTERNATIVES: In addition to the proposed action, the EA analyzed three alternatives in which electrical and mechanical manufacturing activities would be consolidated at sites other than KCP. The three alternative consolidation sites for electrical and mechanical manufacturing activities were Mound, Pinellas, and RFP. For each of these alternatives, the consolidation site for electrical and mechanical activities would retain all of its other nonnuclear manufacturing activities and receive additional electrical and mechanical activities from KCP and the other two mission closeout sites. The current nonnuclear manufacturing activities at KCP and the other two mission closeout sites would be terminated and remaining nonnuclear activities at these sites would be relocated to either SRS, LANL, or SNL/NM.

The EA analyzed the option of locating beryllium technology and pit support work, now done at RFP, at the Y-12 Plant in Oak Ridge, Tennessee instead of at LANL. Under the Y-12 option, the existing capability at Y-12 would be enhanced to accomplish this work. The proposed action does not include the Y-12 option.

No Action Alternative: The EA compared the impacts of the proposed action to those expected to occur if DOE did not consolidate these functions. Under this alternative, all sites included in the proposed action would retain their current weapons missions. Planned upgrades, renovations, repairs, and maintenance activities necessary to improve Complex compliance with all environment, safety, and health and environmental restoration standards would continue irrespective of future Complex configuration. DOE expects that under No Action many current facilities would be placed in an essentially standby mode due to a major reduction in nuclear weapons manufacturing requirements, with correspondingly reduced environmental impacts.

Considerations Common to All Alternatives: All alternatives were based on the same projected workload, which is substantially lower than requirements of the recent past. Planned upgrades, renovations, repairs, and maintenance activities necessary to enable DOE compliance with all environment, safety, and health and environmental restoration standards would continue at Complex facilities irrespective of the configuration of the Complex.

The nonnuclear consolidation proposal does not include components currently purchased from the private sector. Many nonnuclear weapons components are now manufactured and supplied by private companies. Private manufacture of certain components would continue under all alternatives. Where practical and cost effective, DOE may transfer manufacture of additional products to the private sector under existing procurement procedures. However, with recent reductions in the stockpile level, component manufacturing activities may be returned to the government from the private sector because the workload does not make it cost effective for these private suppliers to continue manufacturing such small quantities.

ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION: Based on the analysis of environmental impacts in the Nonnuclear Consolidation EA, DOE believes that the proposed action would not result in any significant environmental impacts.

Implementing the proposed action would involve changes and/or modifications to existing buildings at KCP, SRS, LANL, and SNL/NM. Relocated activities would be compatible with existing land use plans and policies. The peak construction workforce of fewer than 100 workers at each site would have negligible effects on area land use, housing, and social services. No significant impacts on ecological resources, geological resources, or soil are expected. Air quality and noise impacts from construction activities are expected to be negligible since most activities would occur within existing buildings. No new construction or activities associated with the proposed action would occur within identified base floodplains or wetlands that would require a floodplain/wetland assessment under 10 CFR 1022.12 (a). (The base floodplain is defined as the 100-year (1.0 percent) floodplain.) Currently, KCP is the only site potentially vulnerable to floods in the proposed consolidated nonnuclear complex. However, KCP will be protected from a 500-year flood event upon completion in December 1993 of a new levee. Construction of the levee is covered by an EA and FONSI prepared by the U.S. Army Corps of Engineers, *Environmental Assessment: Completion of Flood Protection Works, Bannister Road Federal Complex, Kansas City, Missouri* (September 1990). The Department adopted this EA (DOE/EA-0509) and issued a FONSI on September 18, 1991. No impacts are expected on archeological or historic sites on any of the sites proposed to receive relocated nonnuclear activities. Based on comments received from the EA pre-approval review process, there is no indication that the proposed action would have any adverse effects on any historic or archaeological resources at KCP, SRS, LANL, or SNL/NM.

During operation, minor increases in air emissions and noise are expected, but would not exceed applicable emissions standards and/or guidelines. Therefore, air quality and noise impacts would not be significant. Terminating the nonnuclear missions at Mound, Pinellas, and RFP would improve the local air quality near these sites, but not significantly. Increases in water usage would be less than 1 percent of current usage at KCP, SRS, and LANL, and less than 3 percent at SNL/NM. Adequate water supplies are available to accommodate the increase; therefore, no significant impacts on water resources are expected.

Socioeconomic and community service impacts at KCP, SRS, LANL, and SNL/NM are not expected to be significant. The proposed action would create approximately 1,095 jobs (425 direct and 670 indirect) at KCP at peak operations. Total in-migration would be approximately 558 persons. At SRS, approximately 103 jobs (45 direct

and 58 indirect) would be created. Total in-migration would be approximately 60 persons. At LANL, approximately 294 jobs (115 direct and 179 indirect) would be created. Total in-migration would be about 154 persons. At SNL/NM, approximately 940 jobs (385 direct and 555 indirect) would be created at peak operation. Total in-migration would be about 515 persons. The change in population during the time of peak operation would be less than 1 percent at all sites and the need for additional housing units would be negligible. Therefore, socioeconomic impacts are not significant.

These in-migration estimates do not take into account such factors as rehiring preference for displaced workers that may result from the workforce restructuring plan developed for the site, as required by section 3161 of the National Defense Authorization Act for Fiscal Year 1993. Accordingly, these in-migration estimates represent the maximum expected at each site.

Adverse economic consequences will occur at Mound, Pinellas, and RFP due to the termination of nonnuclear missions at these sites. At Mound, approximately 2,846 jobs (1,070 direct and 1,776 indirect) would be lost. This reduction in jobs would not increase the unemployment rate in the year 2000 beyond the projected baseline level of 5.6 percent. Earnings in the Mound region-of-influence (those areas in which approximately 90 percent of current DOE and contractor employees reside) would be reduced by about \$93.1 million, with related decrease in the total personal income of \$119.3 million. The City of Miamisburg would lose an estimated \$0.8 million in income tax revenue in the year 2000 as a result of the loss of direct employment at Mound. This loss represents a 10 percent loss in total income tax revenue, a 9 percent loss in General Fund revenue, and a loss of less than 4 percent in total actual revenues. The less than 1 percent change in population after weapons mission termination would create an estimated 600 additional vacant housing units. The additional vacant housing units represent less than a 1 percent increase in the Mound region-of-influence.

At Pinellas, approximately 3,038 jobs (1,050 direct and 1,988 indirect) would be lost. This reduction in jobs would not increase the unemployment rate in the year 2000 beyond the projected baseline level of 5.4 percent. Earnings in the Pinellas region-of-influence would be reduced by about \$103.1 million, with a related decrease in the total personal income of \$148.2 million. The less than 1 percent change in population after weapons mission termination would create an estimated 700 additional vacant housing units. The additional vacant housing units represent less than a 1 percent increase in the Pinellas region-of-influence.

At RFP, approximately 1,917 jobs (750 direct and 1,167 indirect) would be lost. This reduction in jobs would not increase the unemployment rate in the year 2000 beyond the projected baseline level of 5.6 percent. Earnings in the RFP region-of-influence would be reduced by about \$68.5 million, with a related decrease in the total personal income of \$82.2 million. The less than 1 percent change in population after nonnuclear weapon mission termination would create an estimated 400 additional vacant housing units. The additional vacant housing units represents less than a 1 percent increase in the local RFP area.

As a result of ongoing planning, DOE has revised the workforce estimates presented in the EA. Recently revised workforce figures for direct jobs are

slightly different than the workforce number used in the EA analysis and therefore the estimates of indirect jobs would also be slightly different. Additional estimated direct jobs have been revised to 330 at KCP (a decrease of 95), 125 at LANL (an increase of 10), 390 at SNL (an increase of 5), and 50 at SRS (an increase of 5).

The proposed fiscal year 1994 budget projects a reduction in expenditures at most DOE sites resulting in reduced employment. The reduction in workforce associated with the budget reductions is only estimated at this time. The current estimate of direct jobs lost at sites with mission closeouts is 1,020 at Mound (a decrease of 50), 800 at Pinellas (a decrease of 250), and 715 at RFP (a decrease of 15). The estimated direct jobs reduction would also cause the estimated number of indirect jobs lost to be less than those used in the EA analysis. The revised workforce estimates do not affect any impact conclusions presented in the EA.

Nonnuclear manufacturing activities associated with the proposed action would increase hazardous waste volumes by less than 7 percent and would not have significant impacts on waste management at KCP, SRS, LANL, and SNL/NM. Anticipated increases in waste volumes at these sites are well within the existing treatment, storage, and disposal capabilities. Effluents and emissions due to waste management activities attributed to the proposed action would be negligible. Under the proposed action sanitary/industrial wastewater volumes are projected to increase at all sites, but not significantly. At KCP, SRS, and LANL, the increase is less than 1 percent over the current rate at these sites; at SNL/NM, the increase is less than 2 percent over the current rate. All sites have sufficient waste treatment, storage, and disposal capacity to handle the projected increases; therefore, no significant impacts are expected. At Mound, Pinellas, and RFP, nonnuclear production waste streams would be eliminated; however, this would not result in a significant impact.

No significant adverse impacts to the health of the public or workers is expected from implementation or operation activities associated with the proposed action at any of the sites. Hazard Indexes of less than 1.0 were calculated for onsite and at the site boundary at KCP, SRS, LANL, and SNL/NM. (The Hazard Index is a numerical indicator of the threshold between acceptable and unacceptable exposure levels of noncarcinogenic hazardous compounds. A Hazard Index value of 1.0 or less means that no adverse health effects are expected to occur.) The cancer risk to workers at KCP, SRS, LANL, and SNL/NM would be insignificant. The amount and types of chemicals associated with relocated activities would not add significantly to existing health conditions at these sites. Activities relocated to SNL/NM would result in annual cancer risks to workers of 6×10^{-6} due to the introduction of certain chemical solvents. The cancer risk to the public at SNL/NM was less than 10^{-6} annually. EPA accepts a two-level risk for carcinogens that depends upon the compound class and the hazard which it presents, so that risk levels of 10^{-5} and 10^{-6} are considered reasonable (55 FR 60848). Measures such as substituting less toxic solvents or modifying production procedures would be implemented to minimize the cancer risk to workers at SNL/NM. No significant radiological health effects are expected at LANL, SNL/NM, or SRS as a result of the proposed action. The annual dose increment associated with the increase in tritium emissions at LANL and SNL/NM would be less than 0.1 mrem and 0.022 mrem effective dose equivalent, respectively. At SRS, the annual dose increment would be less than 0.001 mrem effective dose equivalent. These doses would result in

an increased risk of less than 4.5×10^{-8} and 9.8×10^{-9} potential fatal cancers from 1 year of operation at LANL and SNL/NM, respectively, and 4.5×10^{-10} at SRS. The annual dose increment to workers at LANL, SNL/NM, and SRS would be less than 0.011 mrem. This dose would result in an incremental and cumulative increased risk of 4.9×10^{-9} and 1.3×10^{-7} potential fatal cancers, respectively, from 1 year of operation at these sites.

The accident profiles at each site would not change as a result of the proposed action. The probability or consequences of potential accidents would not increase appreciably at any of the sites since relocated functions involve activities and chemicals that are currently being performed at consolidation sites.

The proposed action would have no cumulative effects on the Complex, because the action represents a consolidation of existing activities and functions, rather than an initiation of new activities. In most instances, consolidation would reduce potential cumulative environmental impacts at all sites. Nonnuclear activities now located within aging facilities at donor sites would be transferred to sites with newly refurbished facilities. These facilities would be designed and constructed to incorporate DOE environment, safety, and health requirements on Complex reconfiguration and meet all applicable codes and standards. The facilities to which the nonnuclear activities would be transferred already contain virtually all of these operations, materials, and/or hazardous waste streams. Consolidation would also reduce the number of sites with activities generating these hazardous materials within the Complex.

Environmental Impacts of Alternatives: Environmental consequences discussed above at SRS, LANL, and SNL/NM under the proposed action would be the same or less under the Mound, Pinellas, and RFP alternatives and not significant. At the consolidation sites for each alternative (Mound, Pinellas, and RFP), substantial new construction would be required. If these alternatives were selected, additional site-specific NEPA documentation would be required.

PROPOSED DETERMINATION: Based on the information and analysis in the EA, DOE believes that the proposed action does not constitute a major Federal action significantly affecting the quality of the human environment within the meaning of NEPA, and that incorporation into the Reconfiguration PEIS is not required. DOE will make its final determination on whether to issue a FONSI or to incorporate into the PEIS after the 30-day public review period.

Issued in Washington, D.C. this 1st day of July, 1993.

--/signed/--
Peter N. Brush
Acting Assistant Secretary
Environment, Safety and Health



DOE/EA-0792(ES)

Nonnuclear Consolidation Environmental Assessment

Executive Summary

Nuclear Weapons Complex Reconfiguration Program

**Department of Energy
Office of Defense Programs
Deputy Assistant Secretary for Weapons Complex Reconfiguration**

June 1993

MASTER

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TABLE OF CONTENTS

Table of Contents	i
List of Figures	ii
List of Tables	ii
Acronyms and Abbreviations	iii
EXECUTIVE SUMMARY	ES-1
Introduction	ES-1
Complex 21	ES-1
Nonnuclear Consolidation	ES-1
National Environmental Policy Act	ES-2
Time Frame	ES-3
Issue Identification	ES-3
Purpose of and Need for Nonnuclear Consolidation	ES-4
Purpose	ES-4
Need	ES-4
Proposed Action and Alternatives	ES-5
Kansas City Plant Consolidation	ES-6
Mound Plant Alternative	ES-6
Pinellas Plant Alternative	ES-7
Rocky Flats Plant Alternative	ES-8
No Action	ES-8
Alternatives Eliminated from Further Study	ES-8
Environmental Consequences	ES-9
Proposed Action	ES-9
Alternatives	ES-11
No Action	ES-11
Environmental Permits and Regulations	ES-11

LIST OF FIGURES

Figure ES-1	DOE Sites Involved in Nonnuclear Consolidation Proposal	ES-3
Figure ES-2	Proposed Action—Schematic Transfer of Nonnuclear Functions	ES-6
Figure ES-3	Consolidation of Electrical/Mechanical Products at Kansas City Plant	ES-12
Figure ES-4	Consolidation of Electrical/Mechanical Products at Mound Plant	ES-13
Figure ES-5	Consolidation of Electrical/Mechanical Products at Pinellas Plant	ES-14
Figure ES-6	Consolidation of Electrical/Mechanical Products at Rocky Flats Plant	ES-15

LIST OF TABLES

Table ES-1	Proposed Action and Alternatives	ES-5
Table ES-2	Proposed Action and Alternatives	ES-7
Table ES-3	Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives	ES-16

ACRONYMS AND ABBREVIATIONS

CEQ	Council on Environmental Quality
Complex	Nuclear Weapons Complex
DOE	Department of Energy
EA	Environmental Assessment
EIS	Environmental Impact Statement
EPA	Environmental Protection Agency
ES&H	Environment, Safety and Health
FONSI	Finding of No Significant Impact
KCP	Kansas City Plant
LANL	Los Alamos National Laboratory
Mound	Mound Plant
NCP	Nonnuclear Consolidation Plan
NEPA	National Environmental Policy Act of 1969, as Amended
NRHP	National Register of Historic Places
Pantex	Pantex Plant
PEIS	Programmatic Environmental Impact Statement
Pinellas	Pinellas Plant
RD&T	Research, Development, and Testing
RFP	Rocky Flats Plant
ROD	Record of Decision
Secretary	Secretary of Energy
SNL	Sandia National Laboratories, New Mexico
SRS	Savannah River Site
START II	Strategic Arms Reduction Talks II
Y-12	Y-12 Plant, Oak Ridge Reservation

EXECUTIVE SUMMARY

INTRODUCTION

Complex 21. The Department of Energy (DOE) is developing a proposal, known as Complex 21, to reconfigure the Nation's Nuclear Weapons Complex (Complex). The Complex is a set of interrelated facilities that design, manufacture, test, and maintain this country's nuclear weapons. The Complex also produces and/or recycles the nuclear materials used in building weapons and stores nuclear materials for future use. DOE also dismantles the weapons retired from the stockpile. In addition, DOE conducts surveillance and maintenance activities to ensure the reliability and safety of the stockpiled weapons throughout their operational life.

Many of the Complex facilities, constructed over the past 50 years, were sized to meet stockpile requirements substantially larger and more diverse than those expected in the future and were designed and built to environmental and safety standards very different from, and less stringent than, those of today. In view of improving international relationships, the Presidential initiatives of September 27, 1991 and January 20, 1992, and the Strategic Arms Reduction Talks II (START II) agreement of January 1993, the requirements for the number and types of nuclear weapons will substantially decrease from current stockpile levels. Additional changes are possible in the future which cannot be foreseen at this time. Therefore, the Complex must provide the flexibility to respond to emerging and future changes. To meet these challenges, the Secretary of Energy (Secretary) has proposed to reconfigure the present Complex. The future Complex that is the subject of DOE's proposal is called Complex 21. Complex 21 would be smaller, less diverse, and less expensive to operate than the Complex of today.

Nonnuclear Consolidation. The development of Complex 21 has been divided into two parts: (1)

the consolidation of the nonnuclear manufacturing, storage, and surveillance functions of the Complex, which is the Proposed Action addressed in this Environmental Assessment (EA); and, (2) reconfiguration of the nuclear and the research, development, and testing (RD&T) elements of the Complex.

The nonnuclear component of the Complex manufactures nonnuclear parts of nuclear weapons and tests individual components. The nonnuclear consolidation proposal is designated as such because the vast number of activities to be transferred under the proposal are manufacturing activities associated with the nonnuclear components of nuclear weapons. Nonnuclear components include electronics, batteries, wiring, and firing systems. Although small amounts of tritium, a radioactive material, are involved with some of these components, transfer of tritium-handling activities from the Mound Plant (Mound) and the Pinellas Plant (Pinellas) is included as part of the proposal in order to achieve the greatest possible savings from such consolidation. In addition, leaving tritium operations at Pinellas would be technologically impractical because the neutron generators now being produced at Pinellas are substantially different from those under development at Sandia National Laboratories, New Mexico (SNL) that will be used to meet future stockpile requirements.

In contrast to high-volume industrial factories, the nonnuclear plants generally produce relatively small quantities of technologically sophisticated products which have a long shelf life. Certain limited-life

Complex 21 would be smaller, less diverse, and less expensive to operate than the Complex of today.

components are also produced. This type of production results in a large infrastructure with relatively high fixed costs, irrespective of the production rate.

The nonnuclear manufacturing storage, and surveillance activities discussed in this EA have been grouped into six different categories. These include:

- *Electrical/Mechanical.* This category includes the majority of the activities that will be moved to or remain at the proposed consolidation site and consists of 28 items from the Kansas City Plant (KCP), 5 each from Mound and Pinellas, and 1 from the Rocky Flats Plant (RFP).
- *Tritium-Handling.* This category includes four specific tritium-handling activities of which three are currently located at Mound and one is at Pinellas.
- *Detonators.* This category consists of the high-power detonator work that is currently at Mound.
- *Beryllium Technology and Pit Support.* These two items are currently located at RFP.
- *Neutron Generators, Cap Assemblies, and Batteries.* This category includes four specialized items, including two types of batteries, currently located at Pinellas.
- *Special Products.* This category consists of six unique products (four from RFP and two from Mound) that do not easily fall into any specific category.

The locations of sites involved in the nonnuclear consolidation proposal are illustrated in figure ES-1. The key element of the Proposed Action is consolidation of electrical and mechanical functions

at KCP. The No Action alternative and alternatives for consolidating the majority of electrical and mechanical functions at Mound, Pinellas, and RFP were also investigated.

National Environmental Policy Act. The *National Environmental Policy Act* (NEPA) of 1969, as amended, requires Federal agencies to consider the environmental consequences of proposed projects and their alternatives before decisions are made. In complying with NEPA, DOE follows Council on Environmental Quality (CEQ) regulations (40 CFR 1500-1508) as well as DOE's own NEPA implementation regulations 57 FR 15122, April 24, 1992 to be codified at 10 CFR 1021.

The DOE approach for implementing NEPA requirements for the reconfiguration program has three phases. The first phase involves this EA, which addresses nonnuclear consolidation. The second phase is preparation of a Programmatic Environmental Impact Statement (PEIS), which addresses reconfiguration of nuclear and RD&T elements of the Complex. The third phase consists of preparation of site-specific EISs and/or EAs for the nuclear and RD&T reconfiguration.

If the analysis in this EA supports a final finding of no significant impact (FONSI), DOE plans to proceed with nonnuclear consolidation and incorporate the nonnuclear consolidation decisions into the Reconfiguration PEIS analysis as actions common to all alternatives. However, if any

- **This Environmental Assessment addresses consolidation of nonnuclear functions**
- **Programmatic Environmental Impact Statement will address reconfiguration of nuclear and research, development, and testing functions**

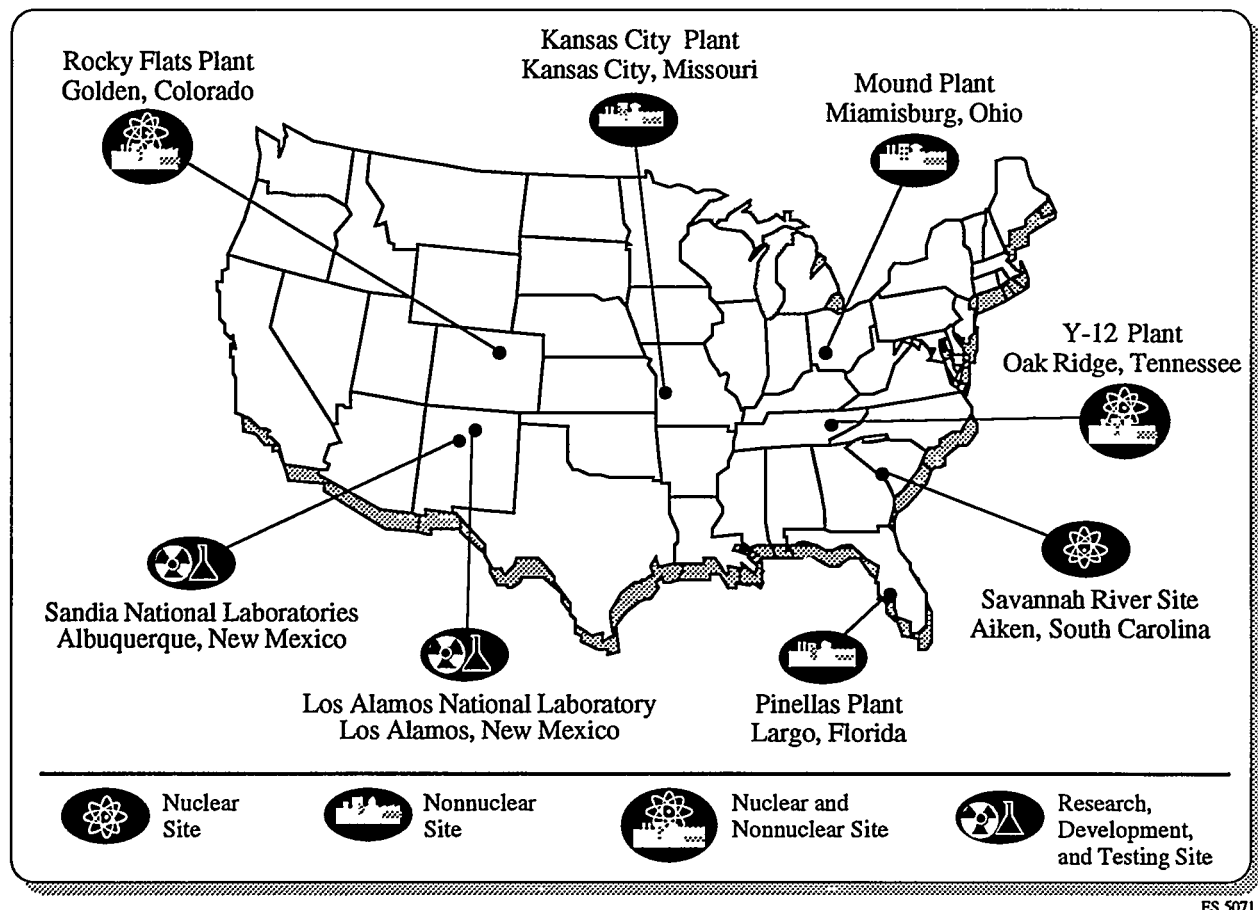


FIGURE ES-1.—DOE Sites Involved in Nonnuclear Consolidation Proposal.

significant environmental impacts due to the Proposed Action are identified during the public comment period on the proposed FONSI, then the assessment of environmental impacts for consolidating nonnuclear functions would be incorporated into the Reconfiguration PEIS. In this case, no actions would be taken to consolidate the nonnuclear manufacturing activities unless they

were included in the Reconfiguration PEIS Record of Decision (ROD).

Time Frame. If DOE issues a FONSI in mid-1993, building modifications and equipment installation would begin immediately and proceed through 1995. Operations of most functions at receiver sites would be phased in over a 3-year period beginning in late 1994, with full operations achieved around 1997. However, some validation activities could continue beyond this date; therefore, for the purposes of environmental analysis, the year 2000 has been assumed as the year of full validation of operations following consolidation. It is assumed that operations would continue until the middle of the 21st century.

Time Frame of Proposed Action:

- 1993—Begin Consolidation
- 1997—Full Operations in Place
- 2000—Full Validation of All Operations

Issue Identification. Issue identification for this EA was accomplished as part of the larger scoping process for the reconfiguration program. Scoping

Issue identification for Reconfiguration Program involved:

- 7-1/2 month comment period
- Meetings held near all sites
- 432 comments on nonnuclear consolidation

activities consisted of both internal DOE scoping and public scoping. Public meetings were conducted between March and August 1991 at 15 locations across the country to allow interested parties to speak and present related information. Meetings occurred in the vicinity of all sites that could be affected by nonnuclear consolidation. All comments received through public scoping were systematically organized and reviewed for consideration during the preparation of both the PEIS and this EA. An extensive summary of all comments received during the public scoping process was published in the *Implementation Plan for the Nuclear Weapons Complex Reconfiguration Programmatic Environmental Impact Statement*, February 1992.

During the public scoping process, DOE received comments from members of the public; from representatives of interest groups; and from Federal, state, and local officials. DOE received 432 comments specifically related to consolidation of nonnuclear functions. Comments covered a range of environmental and policy-related issues including environmental health, economic impacts of plant closures to local communities, worker and public health and safety, hazardous materials management, surface and groundwater contamination, population encroachment, and privatization of nonnuclear functions.

A review of the comments received was conducted to identify issues to be analyzed in this EA and, issues that are either not relevant or outside the scope of this EA. This review, along with internal DOE studies and the CEQ and DOE requirements for

implementing NEPA requirements, establishes the scope of study.

PURPOSE OF AND NEED FOR NONNUCLEAR CONSOLIDATION

Purpose. The purpose of nonnuclear consolidation is to effect better management of nonnuclear manufacturing activities within the Complex, and to decrease the long-term operating costs of this aspect of the Complex. In addition, consolidation would provide DOE with a mechanism to maintain the specialized skill base, and retain critical technologies necessary to produce and test the nonnuclear components.

Need. Consolidation of nonnuclear functions is necessary because it would scale future nonnuclear manufacturing activities to the foreseeable workload and reduce operating costs. To provide a sufficient workload for maintaining a well-trained and qualified workforce, functions that use similar technologies would be combined. Continued operation of the existing large Complex would require maintaining nonnuclear expertise at multiple sites with little or no workload, which is already resulting in a loss of technical skills. Consolidating similar nonnuclear manufacturing operations and collocating some nonnuclear manufacturing capabilities with similar RD&T capabilities at the national laboratories would serve as mechanisms to maintain or enhance critical skills.

Proposed Action minimizes:

- Environmental, safety, and health risks
- Technical risks
- Consolidation costs
- Consolidation time

PROPOSED ACTION AND ALTERNATIVES

In the Nonnuclear Consolidation Plan (NCP) with addendum of September 1991, DOE considered all sites that currently perform nonnuclear manufacturing functions as candidates for the consolidated nonnuclear mission: KCP, Mound, Pinellas, RFP, the Oak Ridge Y-12 Plant (Y-12), and the Pantex Plant (Pantex). DOE assessed nonnuclear manufacturing functions in three groups:

- Candidates for transfer to a primary consolidation site.
- Candidates for transfer to other sites.
- Candidates for privatization.

Each of the 6 potential consolidation sites was rated using 10 performance measures within 4 categories (table ES-1) that involved environment, safety and health (ES&H) risks; technical risks; consolidation costs; and consolidation time. Through this analysis, KCP ranked first in each of the 4 categories, and was selected as the preferred consolidation site (i.e., the Proposed Action). Pinellas ranked second in 2 categories; Mound ranked second in 1 category; and Pinellas, Mound, and RFP tied for second in 1 of the 4 categories. Y-12 and Pantex ranked last in all 4 categories.

Key Elements of Proposed Action:

- Close out Complex missions at Mound and Pinellas, and the weapons Complex nonnuclear missions at Rocky Flats Plant
- Consolidate electrical and mechanical functions at Kansas City Plant
- Transfer other functions or technology bases to three or four other DOE sites

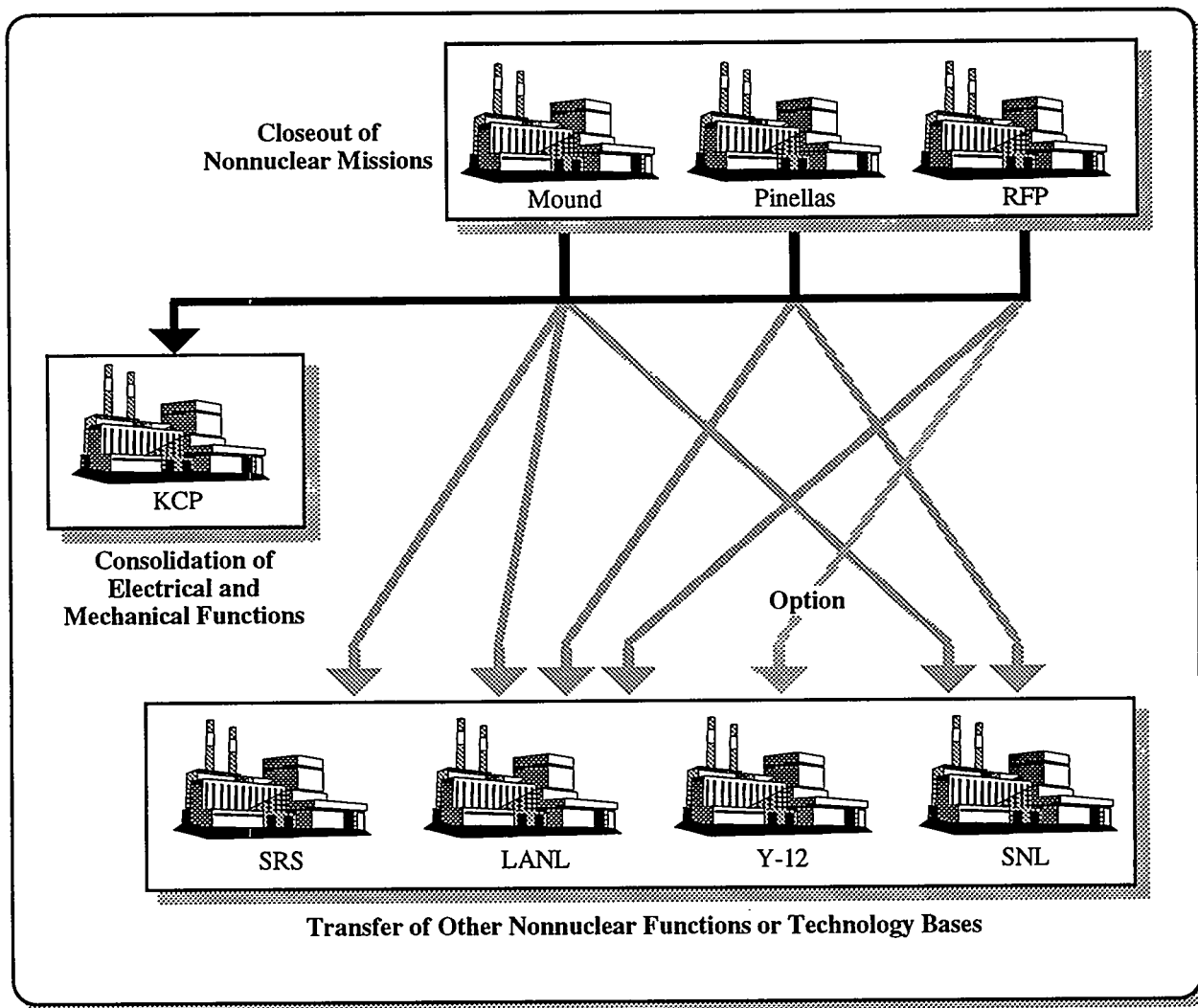
As a result of the analysis in the NCP, Y-12 and Pantex have been eliminated from further study as primary consolidation sites. Mound, Pinellas, and RFP have been retained for analysis in this EA, along with No Action, as alternatives to the proposed consolidation at KCP.

Figure ES-2 illustrates the Proposed Action, and table ES-2 provides a comparison of Proposed Action and the three alternatives. The Proposed Action and alternatives are discussed in more detail below.

TABLE ES-1.—Proposed Action and Alternatives

Categories	Performance Measures
Minimization of ES&H Risks	New Hazardous Chemicals Additional Hazardous Operations New Regulated Waste Streams
Minimization of Technical Risks	New Parts to Manufacture New Parts to Procure Jobs to Transfer Availability of Technical Personnel
Minimization of Cost	Capital Cost Operating Cost
Minimization of Time	Payback Time

EA 4156



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FIGURE ES-2.—*Proposed Action—Schematic Transfer of Nonnuclear Functions.*

Kansas City Plant Consolidation. DOE proposes to terminate the Complex missions at Mound and Pinellas, and the nonnuclear manufacturing mission at RFP. Enhanced RD&T and prototype fabrication capability at the laboratories would be provided to replace certain weapon production capabilities now located at Mound, Pinellas, and RFP. The remaining nonnuclear manufacturing functions would be consolidated at KCP, and the weapons manufacturing workload currently at KCP would be reduced. Figure ES-3 shows the Kansas City Plant alternative in detail.

The Proposed Action would result in: the consolidation of the nonnuclear electrical/mechanical manufacturing capabilities of the

Complex at KCP; tritium-handling capabilities at Savannah River Site (SRS) and Los Alamos National Laboratory (LANL); high power detonator capabilities at LANL; and beryllium technology and pit support functions at LANL or, as an option, at Y-12. The existing RD&T and prototyping capability at SNL, would be augmented to provide the necessary fabrication capability for future neutron generators, cap assemblies, and other nonnuclear components.

Mound Plant Alternative. The Complex missions at KCP and Pinellas, and the Complex nonnuclear manufacturing mission at RFP would be terminated. Mound would retain all of its existing nonnuclear manufacturing capabilities and receive additional

TABLE ES-2.—*Proposed Action and Alternatives*

Nonnuclear Manufacturing Functions to be Moved	Alternatives				
	No Action	Proposed Action	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative
Electrical/Mechanical	KCP, Mound, Pinellas, RFP	KCP	Mound	Pinellas	RFP
Tritium Handling at Mound	Mound	SRS	Mound	SRS	SRS
Tritium Handling at Pinellas	Pinellas	LANL	LANL	Pinellas	LANL
Detonators	Mound	LANL	Mound	LANL	LANL
Beryllium Technology and Pit Support	RFP	LANL (Option Y-12)	LANL	LANL	RFP
Neutron Generators, Cap Assemblies, and Batteries	Pinellas	SNL and KCP (LAMB)	SNL and Mound (LAMB)	Pinellas	SNL and RFP (LAMB)
Special Products at RFP	RFP	KCP	Mound	Pinellas	RFP
Special Products at Mound	Mound	LANL (Calorimeters) and SNL (MWS)	Mound	LANL (Calorimeters) and SNL (MWS)	LANL (Calorimeters) and SNL (MWS)

E4 3171

Notes: LAMB Lithium Ambient Batteries
 MWS Milliwatt Heat Source Surveillance

nonnuclear manufacturing capabilities from the other sites.

The Mound alternative would result in the consolidation of: the nonnuclear electrical/mechanical manufacturing capabilities of the Complex at Mound; Pinellas' tritium-handling capabilities with similar functions at LANL; and beryllium technology and pit support functions at LANL. The existing RD&T and prototyping capability at SNL would be augmented to provide the necessary fabrication capability for future neutron generators, cap assemblies, and other nonnuclear components. Figure ES-4 shows the Mound Plant Consolidation alternative in detail.

Pinellas Plant Alternative. The Complex missions at KCP and Mound, and the Complex nonnuclear mission at RFP would be terminated. Pinellas would retain all of its existing nonnuclear manufacturing capabilities and receive additional nonnuclear manufacturing capabilities from the other sites.

The Pinellas alternative would result in the consolidation of: the nonnuclear electrical/mechanical manufacturing capabilities of the Complex at Pinellas; Mound tritium-handling capabilities with similar functions at SRS; high power detonators at LANL; and beryllium technology and pit support functions at LANL. The existing RD&T and prototyping capability at SNL

would be augmented to provide the necessary fabrication capability for other nonnuclear components. Figure ES-5 shows the Pinellas Plant Consolidation alternative in detail.

Rocky Flats Plant Alternative. The Complex missions at KCP, Mound, and Pinellas would be terminated. RFP would retain all of its existing nonnuclear manufacturing capabilities and receive additional nonnuclear manufacturing capabilities from the other sites.

The RFP alternative would result in the consolidation of: the nonnuclear electrical/mechanical manufacturing capabilities of the Complex at RFP; tritium-handling capabilities at SRS and LANL; and high-power detonator capability at LANL. The existing RD&T and prototyping capability at SNL would be augmented to provide the necessary fabrication capability for future neutron generator work, cap assemblies, and other nonnuclear components. Figure ES-6 shows the Rocky Flats Plant Consolidation alternative in detail.

No Action. Under No Action, the consolidation of nonnuclear functions would not occur. Planned upgrades, renovations, repairs, and maintenance activities necessary to improve Complex compliance with all environment, safety and health (ES&H) and environmental restoration standards would continue irrespective of future Complex configurations. Mound, Pinellas, and RFP would retain their current nonnuclear manufacturing missions.

Alternatives Eliminated from Further Study. As previously stated, alternatives for consolidation at Y-12 and Pantex were examined in the NCP, but eliminated from further evaluation. In addition, alternatives that would: consolidate nonnuclear manufacturing activities at any two of the current three dedicated nonnuclear plants (i.e., Mound and Pinellas; KCP and Mound; or KCP and Pinellas); consolidate such activities at a nuclear site or a national laboratory; or, consolidate all tritium maintenance, processing, and storage activities presently performed at Mound and SRS at Mound

instead of SRS were also considered during the course of preparing this EA but were eliminated from further study.

The Two-Site Nonnuclear Consolidation Study, with addendum, released in December 1992, estimated and compared the annual operating and long-term costs for the two-site alternatives with the Kansas City consolidation alternative addressed in the NCP. With regard to long-term cost comparisons, the Two-Site Study supports the conclusion that the preferred alternative of consolidating most nonnuclear manufacturing activities at Kansas City would save between 1 1/2 billion dollars and several billion dollars in life-cycle costs over the two-site consolidation alternatives examined. This conclusion alone renders all of the two-site options unreasonable. Therefore, they have been eliminated from further analysis in this EA.

In addition, as explained in the addendum to the Two-Site Study, one of the results of the START II agreement has been to reduce further the cost effectiveness and increase the technical risks involved in retaining neutron generator production at Pinellas. Thus, the KCP-Pinellas two-site consolidation option (which was the least costly of the two-site options evaluated in the study) has become even less attractive compared to single-site consolidation at KCP.

Further, as a result of recent workload and budget reductions, the Complex has been forced to significantly reduce personnel levels, jeopardizing technical competence in many areas. Consolidating similar activities at a single site will ensure sufficient work to support a core workforce of technical and production personnel. This will enable utilization and retention of key skills and technical capabilities needed to maintain the enduring stockpile. Consolidation at two sites will provide substantially less assurance that this programmatic objective will be achieved.

The environmental impacts of alternatives for consolidating nonnuclear manufacturing activities

at a national laboratory or at a nuclear site (other than RFP) are not evaluated in this EA, because the technical risk, cost and time to consolidate render these alternatives unreasonable. As described above, the NCP considered the alternative of consolidating nonnuclear manufacturing activities at RFP, Pantex and Y-12, all nuclear sites. For the reasons discussed, neither Y-12 or Pantex represents a reasonable alternative for such consolidation.

Although the laboratories have experience with many of these technologies, and have designed the components and subsystems to be produced, they do not have recent practical experience manufacturing production quantities of many of these components and subsystems. Thus, the technical risk involved in consolidating all activities at the laboratories would be significantly greater than for the other alternatives considered in this EA. In addition, given the large number of technologies to be transferred, the transfer cost (including construction of new facilities) and time involved before such a transfer could be effected would render this alternative unreasonable. This is particularly true in view of the need for near-term consolidation to prevent the loss of technical competence in the Complex.

A number of tritium-handling functions are currently performed at Mound and SRS. DOE has assessed the comparative costs and long-term cost savings of consolidating these functions at either one of the two sites in the Tritium Consolidation Comparison Study: Cost Analysis, December 1992. It was estimated that consolidation of tritium-handling functions at Mound would involve life-cycle costs nearly 2 billion dollars greater than consolidation at SRS. As a result, DOE has concluded that Mound is an unreasonable location for such consolidation. In addition, DOE believes that it would not be prudent to place additional large tritium inventories in a densely populated urban area such as that surrounding Mound. This is especially so when there exists the alternative of consolidating this material at SRS, a large site which is not near a heavily populated area.

Environmental Consequences:

- **Proposed Action has no significant environmental impacts**
- **Other consolidation alternatives require substantial new construction and additional NEPA documentation**
- **No Action alternative does not have significant environmental impacts, but does not meet national security requirements**

ENVIRONMENTAL CONSEQUENCES

Proposed Action. DOE has identified no significant environmental impacts associated with the proposal to consolidate nonnuclear activities at the KCP. The conclusions of the environmental analyses are as follows:

- *Land Use.* No additional undisturbed land would be required to implement the project. At KCP, SRS, LANL, and SNL, changes and modifications to existing buildings would be compatible with existing land use plans and policies.
- *Air Quality and Acoustics.* The same sites would experience short-term increases in air emissions and noise during building renovations. During operation, minor increases in air emissions and noise would not exceed applicable air quality standards or guidelines. At Mound, Pinellas, and RFP, local air quality and noise improvements could occur due to the close out of weapons complex missions at these facilities.

- *Water Resources.* No disturbance of wetlands, floodplains, or surface water features would occur at any sites. Increased water usage would not exceed available supplies at any of the sites. At KCP, SRS, and LANL, increases in water usage would be less than 1 percent of current usage. At SNL the increase would be less than 4 percent. Water use would decrease due to mission close outs at Mound, Pinellas, and RFP.
- *Geology and Soils.* No significant impacts to geologic resources or soils would occur at any sites.
- *Biotic Resources.* No permanent disturbance of any biotic resources is anticipated from building renovations or operations at any site. No adverse impacts to threatened and endangered species or wetlands are expected since no undeveloped land would be required at Proposed Action sites.
- *Cultural Resources.* No adverse effects to NRHP-eligible prehistoric or historic resources at KCP, SRS, LANL, or SNL are expected. There would be no adverse effect on important Native American resources at LANL and SNL.
- *Socioeconomics.* Changes to socioeconomics and community services at KCP, SRS, LANL, and SNL are expected to be minor. Approximately 425 jobs would be created at KCP; 45 at SRS; 115 at LANL; and 385 at SNL. Adverse economic consequences would occur at Mound, Pinellas, and RFP due to the closeout of Complex missions activities at these facilities. Approximately 1,070 direct jobs would be lost at Mound, 1,050 direct jobs at Pinellas, and 750 direct jobs at RFP. As a result of ongoing planning and the proposed Fiscal Year 1994 budget projections, DOE has revised its workforce numbers. These revisions are slightly different than the original numbers used for analysis. The revised estimates do not affect any of the conclusions based on the analysis of the original workforce numbers.
- *Waste Management.* Nonnuclear manufacturing activities associated with the Proposed Action would have minor waste management effects at KCP, SRS, LANL, and SNL. Only small increases in hazardous waste volumes (less than 7 percent) would occur. Sanitary/ industrial wastewater effluent would increase less than 2 percent. Solid nonhazardous waste volumes would increase by 1 percent or less at KCP, SRS, and SNL, and by approximately 3 percent at LANL. At Mound, Pinellas, and RFP, nonnuclear production waste streams would be eliminated.
- *Human Health.* No significant adverse human health effects to workers and the public due to radiological or chemical exposure are expected from implementation or operations activities associated with the Proposed Action at any of the sites. Activities relocated to SNL would result in an annual excess cancer risk to workers due to the introduction of small amounts of chemical solvents, but these risks would be within acceptable guidelines. Mitigation measures to minimize these risks such as substituting less toxic solvents or modifying the production processes would be implemented. The frequency and consequences of potential accidents would not increase appreciably at any of the sites.

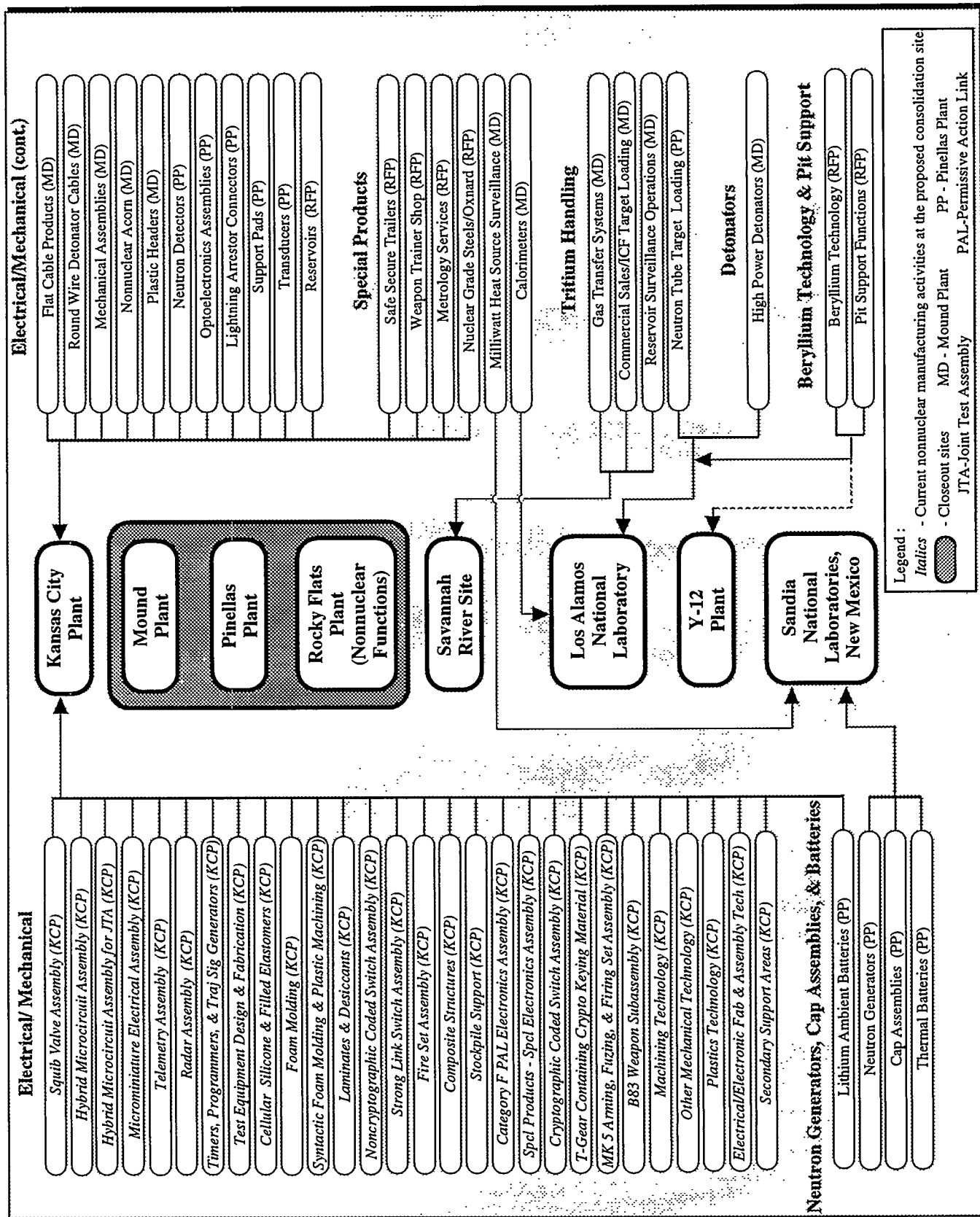
Alternatives. If either the Mound, Pinellas, or RFP alternatives were selected, substantial new construction would be required. For these alternatives, additional site-specific NEPA documentation would be required.

No Action. The No Action alternative would not result in any significant adverse environmental impacts. However, the No Action alternative would not satisfy the DOE need to size the future nonnuclear manufacturing functions to the foreseeable workload, reduce operating costs, and provide adequate expertise to satisfy the future work assignments.

Table ES-3 presents a summary comparison of environmental consequences of the Proposed action and alternatives.

ENVIRONMENTAL PERMITS AND REGULATIONS

Federal regulations have been established to protect the environment and to control the handling, emission, discharge, and disposal of waste substances. At the Federal level, these environmental regulations are promulgated and enforced primarily by the Environmental Protection Agency (EPA). Compliance with these national requirements must be met by all Federal agencies whether they are enforced directly by the Federal government or the enforcement is delegated to the states. Many environmental requirements are enforced through review, approval, and permitting programs that control the release of pollutants or minimize other impacts on the environment. This EA provides an extensive list of permitting and other regulatory requirements that would be observed at each site involved in nonnuclear consolidation.



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FIGURE ES-3.—Consolidation of Electrical/Mechanical Products at Kansas City Plant.

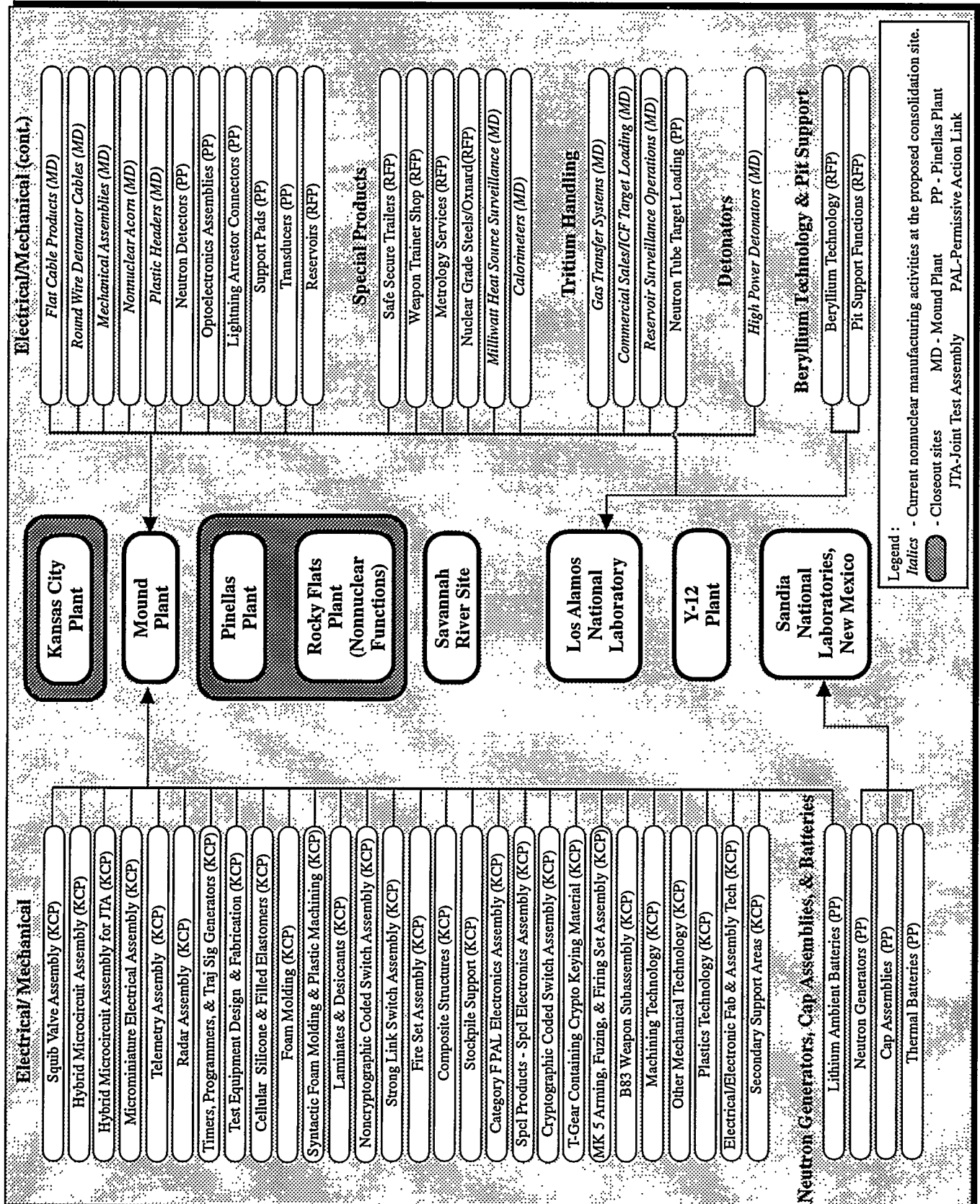


FIGURE ES-4.—Consolidation of Electrical/Mechanical Products at Mound Plant.

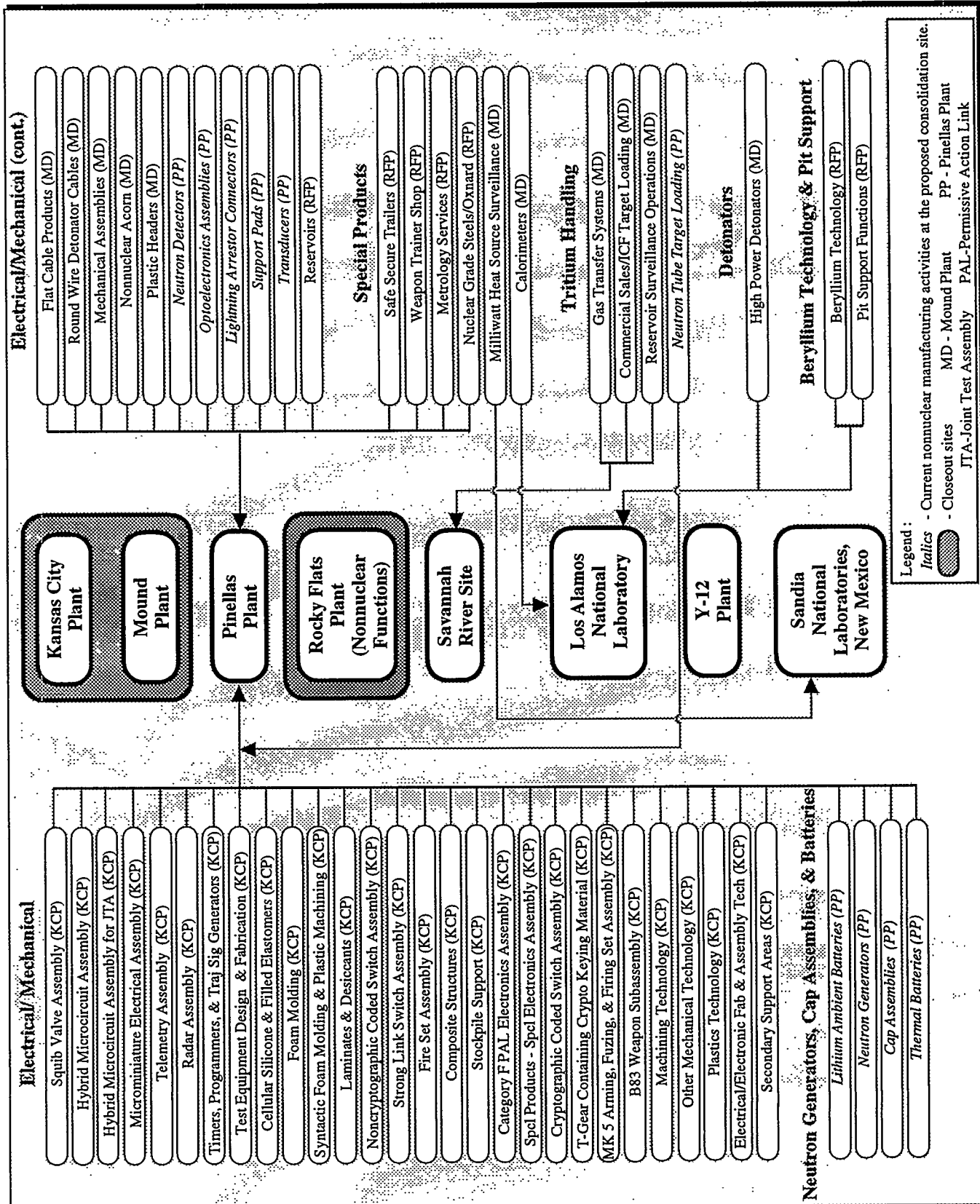


FIGURE ES-5.—Consolidation of Electrical/Mechanical Products at Pinellas Plant.

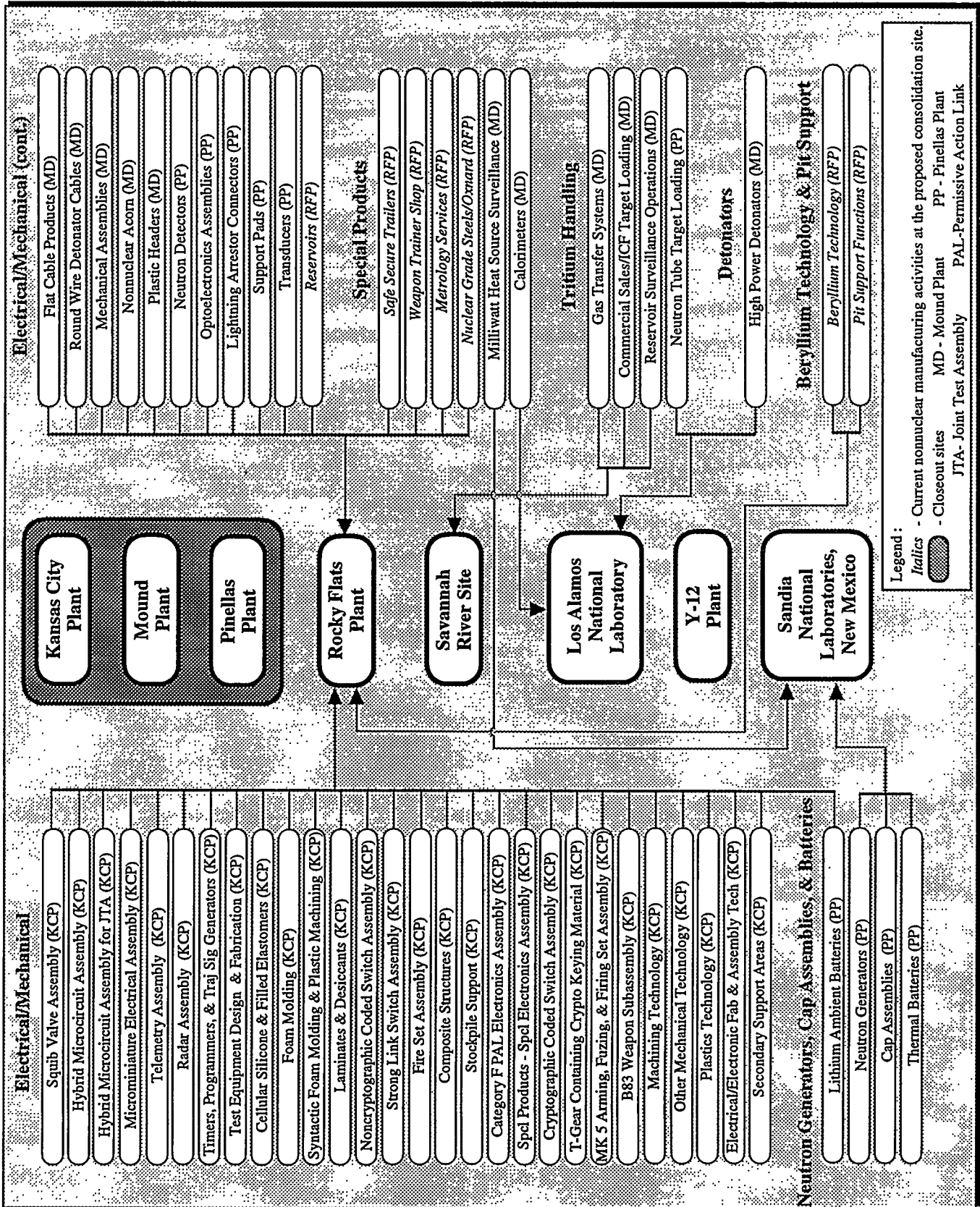


FIGURE ES-6.—Consolidation of Electrical/Mechanical Products at Rocky Flats Plant.

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives [Page 1 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Land Resources				
New construction is limited to interior modification or small additions to existing buildings at KCP, SRS, SNL, and LANL.	New construction would require 62 acres at Mound. New buildings and parking areas would permanently occupy 32 acres of onsite highly developed and undeveloped land. An additional 30 acres disturbed to support construction activities would be revegetated following construction.	New construction would require 63 acres at Pinellas. New buildings and parking areas would permanently occupy approximately 21 acres of onsite previously disturbed undeveloped and developed land. An additional 42 acres would be required to support construction activities; however, sufficient onsite land is not available. The potential use of offsite land, project design modification, or other measures to accommodate construction would be identified in the design phase. Impacts to visual resources would occur from new 3- and 5-story high-rise structures.	New construction would require 72 acres at RFP. New buildings and parking areas would permanently occupy 44 acres of onsite undeveloped land. An additional 28 acres disturbed to support construction activities would be revegetated following construction.	No impact to land use, recreation, or visual resources at any sites from continued operations.
Impacts from building renovations, or operations to land use, recreation, or visual resources at KCP, SRS, LANL, and SNL are not expected.	Impacts from building renovations or operation to land use, recreation, or visual resources at Mound, SNL, and LANL are not expected.	Impacts to recreation resources at Pinellas are not expected. Impacts from building renovations or operation to land use, recreation, or visual resources at SRS, SNL, and LANL are not expected.	Impacts from building renovations or operation to land use, recreation, or visual resources at RFP, SRS, SNL, and LANL are not expected.	

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TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 2 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Air Quality and Acoustics				
- Increases in emissions and air quality impacts from operations and building renovations at KCP, SRS, SNL, and LANL. - No exceedance of applicable Federal and state ambient air quality standards or guidelines associated with this action.	- Increases in emissions and air quality impacts from construction or operations would be negligible at all sites. - No exceedance of applicable Federal and state ambient air quality standards or guidelines associated with this action.	- Increases in emissions and air quality impacts from construction would be negligible at all sites. - Except for Pinellas where the 24-hour standard for glycol ethers and nitric acid, and the annual standard for methylene chloride, nickel chloride, and TCE would be exceeded at the site boundary, no exceedance of applicable Federal and state ambient air quality standards or guidelines associated with this action. Potential mitigation measures could include substituting solvents or modifying processes.	- Increases in emissions and air quality impacts from construction or operations would be negligible at all sites. - No exceedance of applicable Federal and state ambient air quality standards or guidelines associated with this action.	- Emissions and air quality impacts from routine building renovations would be negligible at all sites. - No exceedance of applicable Federal and state ambient air quality standards or guidelines at any site except for Pinellas where nickel chloride, TCE, and methylene chloride exceeded state air quality criteria. Gradual reduction in air emissions in response to reduced workloads.

E4 3465-2

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 3 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Air Quality and Acoustics (continued)				
• Closeout of Complex missions at Mound and Pinellas, and Complex nonnuclear missions at RFP would reduce emissions of criteria and hazardous/toxic air pollutants. Emissions of tritium at Mound and Pinellas would be eliminated. Air quality in the vicinity of these plants should improve. • Traffic-related noise during operation would increase less than 2 dB at KCP and LANL, and less than 1 dB at SRS and SNL.	• Closeout of Complex missions at KCP and Pinellas, and Complex nonnuclear missions at RFP would reduce emissions of criteria and hazardous/toxic air pollutants. Emissions of tritium at Pinellas would be eliminated. Air quality in the vicinity of these plants should improve. • Traffic-related noise during operation would increase 6 dB along Mound Road. At LANL, traffic noise levels would increase less than 2 dB; at SNL less than 1 dB.	• Closeout of Complex missions at KCP and Mound, and Complex nonnuclear missions at RFP would reduce emissions of criteria and hazardous/toxic air pollutants. Emissions of tritium at Mound would be eliminated. Air quality in the vicinity of these plants should improve. • Traffic-related noise during operation would increase less than 1 dB along Belcher Road. No increase is expected along Bryan Dairy Road. At LANL, traffic noise levels would increase less than 2 dB; at SRS and SNL less than 1 dB.	• Closeout of Complex missions at KCP, Mound, and Pinellas would reduce emissions of criteria and hazardous/toxic air pollutants. Emissions of tritium at Mound and Pinellas would be eliminated. Air quality in the vicinity of these plants should improve. • Traffic-related noise during operation would increase less than 2 dB along State Highways 72 and 78, and Indiana Street. At LANL, traffic noise levels would increase less than 2 dB; at SRS and SNL less than 1 dB.	• Local air quality should improve due to reduced emissions of criteria and hazardous/toxic pollutants from lower production levels. • No increase in noise levels at any site.

EA 3465-3

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 4 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Water Resources				
At KCP, SRS, and LANL, increases in water usage would be less than 1 percent of current usage. At SNL the increase would be less than 4 percent. Water supplies are adequate to meet demand at all sites.	Groundwater use at Mound would increase twofold from current use. At LANL, increase in water usage would be less than 1 percent of current usage. At SNL, the increase would be less than 4 percent. Water supplies are adequate to meet demand at all sites.	Water use at Pinellas would increase seven-fold over current annual water use. Potential restrictions imposed by the Pinellas County Water System could impact operations during drought years. Impact on operations could be offset by using closed loop water reserve systems, using treated water from environmental restoration projects, and other water conservation measures which are planned at Pinellas. At SRS, SNL, and LANL, increases in water usage would be less than 1 percent. Water supplies are adequate to meet demand at all sites.	Water use at RFP would increase threefold over current annual water use. At SRS, SNL, and LANL, increases in water usage would be less than 1 percent. Water supplies are adequate to meet demand at all sites.	No increase in water use at any site.

EA 3465-4

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 5 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Water Resources (continued)				
Potential adverse impacts from operations and building renovations at KCP, SRS, SNL, and LANL, to surface water quantities or quality or groundwater quantity or quality are not expected. All new and modified existing facilities would be designed to meet a zero-degradation of groundwater standards.	Potential impacts from erosion and increased nonpoint source drainage during construction and operations could occur to surface water quantities or quality. Erosion control measures such as berms and silt fences would be used during construction. Measures to reduce potential impacts of nonpoint source contaminants could involve collection and/or treatment of stormwater runoff. All new and modified existing facilities would be designed to meet a zero-degradation of groundwater standards.	Potential impacts from erosion and increased nonpoint source drainage during operations are not expected since stormwater runoff is collected in onsite retention ponds. All new and modified existing facilities would be designed to meet a zero-degradation of groundwater standards.	Potential impacts from erosion would be controlled with berms and silt fences. Potential impacts from increased nonpoint source drainage would be controlled by existing onsite runoff-control holding ponds. All new and modified existing facilities would be designed to meet a zero-degradation of groundwater standards.	No increase in degradation of surface water and groundwater quality at any sites. Current groundwater remediation activities would continue. All effluents would meet applicable regulatory permits and standards.
Water use would decrease due to closeout of Complex missions at Mound and Pinellas, and Complex nonnuclear missions at RFP.	Water use would decrease due to closeout of Complex missions at KCP and Pinellas, and Complex nonnuclear missions at RFP.	Water use would decrease due to closeout of Complex missions at KCP and Mound, and Complex nonnuclear missions at RFP.	Water use would decrease due to closeout of Complex missions at KCP, Mound, and Pinellas.	Potential decrease in water use at KCP, Mound, Pinellas, and RFP due to reduced production levels.

EA 3465-5

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 6 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Geology and Soils				
No impacts to geological resources. No impacts to soils at KCP, SRS, SNL, or LANL during building renovations.	No impacts to geological resources. Potential impacts to soils at Mound from erosion and sediment transport during construction would be controlled by berms, silt fences, and watering.	No impacts to geological resources. Potential impacts to soils at Pinellas from erosion and sediment transport during construction would be controlled by berms, silt fences, and watering.	No impacts to geological resources. Potential impacts to soils at RFP from erosion and sediment transport during construction would be controlled by berms, silt fences, and watering.	No impact.
Biotic Resources				
No permanent disturbance of any biotic resources is anticipated from building renovations or operation at KCP.	Approximately 62 acres of natural habitats at Mound would be disturbed by new construction. After construction, 30 acres would be revegetated with native species, resulting in a net habitat loss of 32 acres. This would represent a local reduction of terrestrial habitat within Mound.	Approximately 63 acres would be affected by construction. Most of the remaining vegetation, approximately 21 acres, at the Pinellas site, consisting of mowed fields with clusters of scattered trees, would be disturbed by new construction. The affected habitat is currently in a highly disturbed condition and not unique.	Approximately 72 acres of mostly short-grass prairie vegetation would be disturbed by new construction. Following construction, 28 acres would be revegetated with native species, resulting in a net loss of 44 acres of prairie vegetation.	No impact.
No adverse impacts to wetlands or threatened and endangered species are expected.	No adverse impacts to threatened and endangered species are expected. Potential adverse impacts to wetlands could occur due to new construction.	No adverse impacts to threatened and endangered species are expected. Potential adverse impacts to wetlands could occur due to new construction.	No adverse impacts to threatened and endangered species are expected. Potential adverse impacts to wetlands could occur due to new construction.	
No permanent disturbance of any historic resource is anticipated at SRS, SNL, or LANL.	No permanent disturbance of biotic resources is anticipated at SNL or LANL.	No permanent disturbance of biotic resources is anticipated at SRS, SNL, or LANL.	No permanent disturbance of biotic resources is anticipated at SRS, SNL, or LANL.	

ES-3465-6

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 7 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Cultural Resources				
There would be no disturbance of Native American resources at KCP, SRS, LANL or SNL.	Impacts to cultural resources with regard to 62-acre ground disturbance at Mound cannot be determined until the absence of Native American resources can be confirmed. There would be no disturbance of prehistoric resources at SNL and LANL.	Impacts to cultural resources with regard to 63-acre ground disturbance at Pinellas cannot be determined until the absence of Native American resources can be confirmed. There would be no disturbance of prehistoric resources at SRS, SNL, or LANL.	Impacts to cultural resources with regard to 72-acre ground disturbance at RFP cannot be determined until the absence of Native American resources can be confirmed. There would be no disturbance of prehistoric resources at SRS, SNL, or LANL.	No impact.
There would be no effect on prehistoric or historic resources at KCP, SRS, LANL, or SNL.	There would be no effect on prehistoric or historic resources at Mound, LANL, or SNL.	There would be no effect on prehistoric or historic resources at Pinellas, SRS, LANL, or SNL.	There would be no effect on prehistoric or historic resources at RFP, SRS, LANL, or SNL.	No impact.
Socioeconomics and Community Services				
Changes to socioeconomics and community services are expected during the renovation and operation phases at KCP, SRS, LANL, and SNL.	Changes to socioeconomics and community services are expected during the construction and operation phases at Mound, LANL, and SNL.	Changes to socioeconomics and community services are expected during the construction and operation phases at Pinellas, SRS, LANL, and SNL.	Changes to socioeconomics and community services are expected during the construction and operation phases at RFP, SRS, LANL, and SNL.	Socioeconomic changes at all sites. Increases and reductions in staff levels at all sites may cause economic changes in the vicinity of each site.
At KCP - 1,095 Total jobs created - 425 Direct jobs - 670 Indirect jobs - 558 in-migration - population <1-percent increase - housing <1-percent increase	At Mound - 8,298 Total jobs created - 3,120 Direct jobs - 5,178 Indirect jobs - 4,143 in-migration - population <1 percent increase - housing <1 percent increase	At Pinellas - 11,559 Total jobs created - 3,995 Direct jobs - 7,564 Indirect jobs - 5,261 in-migration - population <1 percent increase - housing <1 percent increase	At RFP - 9,558 Total jobs created - 3,740 Direct jobs - 5,818 Indirect jobs - 5,594 in-migration - population <1 percent increase - housing <1 percent increase	At KCP - 198 Direct jobs lost At Mound - 29 Direct jobs lost At Pinellas - 475 Direct jobs lost At RFP - 156 Direct jobs created

E4 3465-7

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 8 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Socioeconomics and Community Services (continued)				
At SRS - 103 Total jobs created - 45 Direct jobs - 58 Indirect jobs - 60 in-migration - population <1-percent increase - housing <1-percent increase At LANL - 294 Total jobs created - 115 Direct jobs - 179 Indirect jobs - 154 in-migration - population <1 percent increase - housing <1 percent increase At Y-12 (Option) - 23 Total jobs created - 10 Direct jobs - 13 Indirect jobs - 13 in-migration - population <1-percent increase - housing <1-percent increase	At SRS - No change from No Action At LANL - 50 Direct jobs created	At SRS - 45 Direct jobs created At LANL - 105 Direct jobs created	At SRS - 45 Direct jobs created At LANL - 75 Direct jobs created At Y-12 - No change from No Action	At SRS - 2,978 Direct jobs lost At LANL - 150 Direct jobs created At Y-12 - 214 Direct jobs lost

EA 3465-8

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 9 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Socioeconomics and Community Services (continued)				
At SNL - 940 Total jobs created - 385 Direct jobs created - 555 Indirect jobs created - 515 in-migration - population <1 percent increase - housing <1 percent increase • Benefits to local economies would occur at receiving sites. At most of these sites, including KCP, creation of new jobs would partially offset recent staff reductions. • At Mound, Pinellas, and RFP, where Complex missions would be closed out, there would be economic consequences as follows:	At SNL - 385 Direct jobs created • Benefits to local economies would occur at receiving sites. At most of these sites, including Mound, creation of new jobs would partially offset recent staff reductions. • At KCP, Pinellas, and RFP, where Complex missions would be closed out, there would be economic consequences as follows:	At SNL - 0 Direct jobs created • Benefits to local economies would occur at receiving sites. At most of these sites, including Pinellas, creation of new jobs would partially offset recent staff reductions. • At KCP, Mound, and RFP, where Complex missions would be closed out, there would be economic consequences as follows:	At SNL - 385 Direct jobs created • Benefits to local economies would occur at receiving sites. At most of these sites, including RFP, creation of new jobs would partially offset recent staff reductions. • At KCP, Mound, and Pinellas, where Complex missions would be closed out, there would be economic consequences as follows:	At SNL - 73 Direct jobs lost • Additional benefits to local economies would not occur. • Socioeconomic changes at all potential Complex mission closeout sites.

EA 3465-9

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 10 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	Socioeconomics and Community Services (continued)	
				No Action	No Action
At Mound - 2,846 Total jobs lost - 1,070 Direct jobs - 1,776 Indirect jobs - \$93.1M loss in earnings - \$119.3M loss in income - Population <1-percent decrease - Out-migration of 1,400 - 600 vacant housing units added At Pinellas - 3,038 Total jobs lost - 1,050 Direct jobs - 1,988 Indirect jobs - \$103.1M loss in earnings - \$148.2M loss in income - Population <1-percent decrease - Out-migration of 1,400 - 700 vacant housing units added	At KCP - 9,800 Total jobs lost - 3,793 Direct jobs - 5,982 Indirect jobs - \$345.5M loss in earnings - \$429.6M loss in income - Population <1-percent decrease - Out-migration of 5,000 - 1,900 vacant housing units added At Pinellas - 3,038 Total jobs lost - 1,050 Direct jobs - 1,988 Indirect jobs - \$103.1M loss in earnings - \$148.2M loss in income - Population <1-percent decrease - Out-migration of 1,400 - 700 vacant housing units added	At KCP - 9,800 Total jobs lost - 3,793 Direct jobs - 5,982 Indirect jobs - \$345.5M loss in earnings - \$429.6M loss in income - Population <1-percent decrease - Out-migration of 5,000 - 1,900 vacant housing units added At Mound - 2,846 Total jobs lost - 1,070 Direct jobs - 1,776 Indirect jobs - \$93.1M loss in earnings - \$119.3M loss in income - Population <1-percent decrease - Out-migration of 1,400 - 600 vacant housing units added	At KCP - 9,800 Total jobs lost - 3,793 Direct jobs - 5,982 Indirect jobs - \$345.5M loss in earnings - \$429.6M loss in income - Population <1-percent decrease - Out-migration of 5,000 - 1,900 vacant housing units added At Mound - 2,846 Total jobs lost - 1,070 Direct jobs - 1,776 Indirect jobs - \$93.1M loss in earnings - \$119.3M loss in income - Population <1-percent decrease - Out-migration of 1,400 - 600 vacant housing units added	At Mound - 29 Direct jobs lost At KCP - 198 Direct jobs lost	At Mound - 29 Direct jobs lost At KCP - 198 Direct jobs lost

E4 3465-10

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 11 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Socioeconomics and Community Services (continued)				
At RFP - 2,917 Total jobs lost - 750 Direct jobs - 1,167 Indirect jobs - \$68.5M loss in earnings - \$82.2M loss in income - Population <1-percent decrease - Out-migration of 1,000 - 400 vacant housing units. Potential mitigation at Complex missions closeout sites could include worker retraining, redeployment, out-placement and counseling services, or assistance to local communities. • Local transportation systems would not be affected.	At RFP - 2,917 Total jobs lost - 750 Direct jobs - 1,167 Indirect jobs - \$68.5M loss in earnings - \$82.2M loss in income - Population <1-percent decrease - Out-migration of 1,000 - 400 vacant housing units Potential mitigation at Complex missions closeout sites could include worker retraining, redeployment, out-placement and counseling services, or assistance to local communities. • Local transportation systems near Mound would be affected. Mound Road between Main Street and Benner Road would deteriorate from free flow conditions to a stable flow condition. Potential mitigation could include staggering work hours, carpooling, or modification of the road segments.	At RFP - 2,917 Total jobs lost - 750 Direct jobs - 1,167 Indirect jobs - \$68.5M loss in earnings - \$82.2M loss in income - Population <1-percent decrease - Out-migration of 1,000 - 400 vacant housing units. Potential mitigation at Complex missions closeout sites could include worker retraining, redeployment, out-placement and counseling services, or assistance to local communities. • Local transportation systems near Pinellas would be affected. Bekler and Bryan Dairy Roads would deteriorate from heavy to extreme congestion conditions. Potential mitigation could include staggering work hours, carpooling, or modification of the road segments.	At Pinellas - 3,038 Total jobs lost - 1,050 Direct jobs - 1,988 Indirect jobs - \$103.1M loss in earnings - \$148.2M loss in income - Population <1-percent decrease - Out-migration of 1,000 - 700 vacant housing units added. Potential mitigation at Complex missions closeout sites could include worker retraining, redeployment, out-placement and counseling services, or assistance to local communities. • Local transportation systems near RFP would be affected. Colorado State Route 128 and Indiana Street would deteriorate from stable flow conditions to congested flow conditions. Potential mitigation could include staggering work hours, carpooling, or modification of the road segments.	At RFP - 156 Direct jobs created At Pinellas - 475 Direct jobs lost • No change.

EA 3-65-11

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 12 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Waste Management				
Waste management requirements during renovations and operations at all sites would be consistent with current waste management activities.	No waste management impacts are expected during the construction phase at any site.	No waste management impacts are expected during the construction phase at any site.	No waste management impacts are expected during the construction phase at any site.	At all sites increases in annual waste volumes are not expected. Lower production levels would decrease waste management activities at all sites.
Waste Management (continued)—Liquid Hazardous Waste				
- Only small increases in hazardous waste volumes over No Action: - At KCP: 8,132 gal/yr - At SRS: no increase - At SNL: 1,252 gal/yr - At LANL: 7,508 gal/yr - At Y-12: 4,370 gal/yr	- Hazardous waste volumes from operations would increase over No Action: - At Mound: 7,600 gal/yr - At SRS: no increase - At SNL: 1,250 gal/yr - At LANL: 508 gal/yr - At Y-12: no increase	- Hazardous waste volumes from operations would increase over No Action: - At Pinellas: 51,500 gal/yr - At SRS: no increase - At SNL: 2 gal/yr - At LANL: 7,508 gal/yr - At Y-12: no increase	- Hazardous waste volumes from operations would increase over No Action: - At RFP: 43,300 gal/yr - At SRS: no increase - At SNL: 1,252 gal/yr - At LANL: 7,000 gal/yr - At Y-12: no increase	1991 hazardous waste volumes from operations: - At KCP: 183,000 gal/yr - At Mound: 19,000 gal/yr - At Pinellas: 49,555 gal/yr - At RFP: 5,005 gal/yr - At SRS: 0 gal/yr - At SNL: 198,450 gal/yr - At LANL: 72,000 gal/yr - At Y-12: 273,670 gal/yr
Waste Management (continued)—Solid Hazardous Waste				
- Only small increases in hazardous waste volumes over No Action: - At KCP: 108 ft³/yr - At SRS: no increase - At SNL: 209 ft³/yr - At LANL: 305 ft³/yr - At Y-12: 950 ft³/yr	- Hazardous waste volumes from operations would increase over No Action: - At Mound: 12,300 ft³/yr - At SRS: no increase - At SNL: 197 ft³/yr - At LANL: 100 ft³/yr - At Y-12: no increase	- Hazardous waste volumes from operations would increase over No Action: - At Pinellas: 12,300 ft³/yr - At SRS: no increase - At SNL: 12 ft³/yr - At LANL: 305 ft³/yr - At Y-12: no increase	- Hazardous waste volumes from operations would increase over No Action: - At RFP: 12,300 ft³/yr - At SRS: no increase - At SNL: 209 ft³/yr - At LANL: 205 ft³/yr - At Y-12: no increase	1991 hazardous waste volumes from operations: - At KCP: 46,000 ft³/yr - At Mound: 2,825 ft³/yr - At Pinellas: 110 ft³/yr - At RFP: 1,090 ft³/yr - At SRS: 3,100 ft³/yr - At SNL: 4,500 ft³/yr - At LANL: 11,000 ft³/yr - At Y-12: 37,295 ft³/yr

ES-3465-12

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 13 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Waste Management (continued)—Liquid Low-Level Waste				
- Only small increases in low-level waste volumes over No Action: - At KCP: no increase - At SRS: 0 gal/yr - At SNL: 100 gal/yr - At LANL: 30 gal/yr - At Y-12: 0 gal/yr	- Low-level waste volumes from operations would increase over No Action: - At Mound: no increase - At SRS: no increase - At SNL: 100 gal/yr - At LANL: 30 gal/yr - At Y-12: no increase	- Low-level waste volumes from operations would increase over No Action: - At Pinellas: no increase - At SRS: no increase - At SNL: no increase - At LANL: no increase - At Y-12: no increase	- Low-level waste volumes from operations would increase over No Action: - At RFP: no increase - At SRS: no increase - At SNL: 100 gal/yr - At LANL: 30 gal/yr - At Y-12: no increase	1991 low-level waste volumes from operations: - At KCP: <1 gal/yr - At Mound: 0 gal/yr - At Pinellas: 0 gal/yr - At RFP: 1,430 gal/yr - At SRS: 20,092,080 gal/yr - At SNL: 4,160 gal/yr - At LANL: 5,787,430 gal/yr - At Y-12: 247,495 gal/yr
Waste Management (continued)—Solid Low-Level Waste				
- Only small increases in low-level waste volumes over No Action: - At KCP: no increase - At SRS: 500 ft³/yr - At SNL: 294 ft³/yr - At LANL: 200 ft³/yr - At Y-12: 22 ft³/yr	- Low-level waste volumes from operations would increase over No Action: - At Mound: no increase - At SRS: no increase - At SNL: 294 ft³/yr - At LANL: 200 ft³/yr - At Y-12: no increase	- Low-level waste volumes from operations would increase over No Action: - At Pinellas: no increase - At SRS: no increase - At SNL: no increase - At LANL: no increase - At Y-12: no increase	- Low-level waste volumes from operations would increase over No Action: - At RFP: no increase - At SRS: no increase - At SNL: 294 ft³/yr - At LANL: 200 ft³/yr - At Y-12: no increase	1991 low-level waste volumes from operations: - At KCP: 15 ft³/yr - At Mound: 176,678 ft³/yr - At Pinellas: 2,090 ft³/yr - At RFP: 38,880 ft³/yr - At SRS: 763,732 ft³/yr - At SNL: 2,355 ft³/yr - At LANL: 203,600 ft³/yr - At Y-12: 210,230 ft³/yr

EA 3465-13

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 14 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Waste Management (continued)—Liquid Mixed Waste				
- Only small increases in mixed waste volumes over No Action: - At KCP: no increase	- Mixed waste volumes from operations would increase over No Action: - At Mound: no increase	- Mixed waste volumes from operations would increase over No Action: - At Pinellas: no increase	- Mixed waste volumes from operations would increase over No Action: - At RFP: no increase	1991 mixed waste volumes from operations: - At KCP: 0 ft³/yr - At Mound: 79 gal/yr - At Pinellas: 0 gal/yr - At RFP: 13,859,700 gal/yr - At SRS: 47,427 gal/yr - At SNL: 480 gal/yr - At LANL: 9,000 gal/yr - At Y-12: 778,190 gal/yr
- At SRS: no increase - At SNL: 0 gal/yr - At LANL: 0 gal/yr - At Y-12: no increase	- At SRS: no increase - At SNL: 0 gal/yr - At LANL: 0 gal/yr - At Y-12: no increase	- At SRS: no increase - At SNL: no increase - At LANL: no increase - At Y-12: no increase	- At SRS: no increase - At SNL: 0 gal/yr - At LANL: 0 gal/yr - At Y-12: no increase	
Waste Management (continued)—Solid Mixed Waste				
- Only small increases in mixed waste volumes over No Action: - At KCP: no increase	- Mixed waste volumes from operations would increase over No Action: - At Mound: no increase	- Mixed waste volumes from operations would increase over No Action: - At Pinellas: no increase	- Mixed waste volumes from operations would increase over No Action: - At RFP: no increase	1991 mixed waste volumes from operations: - At KCP: 0 ft³/yr - At Mound: 4.5 ft³/yr - At Pinellas: 0 ft³/yr - At RFP: 19,170 ft³/yr - At SRS: 1,169 ft³/yr - At SNL: 115 ft³/yr - At LANL: 4,000 ft³/yr - At Y-12: 42,705 ft³/yr
- At SRS: no increase - At SNL: 0.005 ft³/yr - At LANL: 20 ft³/yr - At Y-12: no increase	- At SRS: no increase - At SNL: 0.005 ft³/yr - At LANL: 20 ft³/yr - At Y-12: no increase	- At SRS: no increase - At SNL: no increase - At LANL: no increase - At Y-12: no increase	- At SRS: no increase - At SNL: 0.005 ft³/yr - At LANL: 20 ft³/yr - At Y-12: no increase	

EA 3465-14

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 15 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Waste Management (continued)—Liquid Nonhazardous Waste				
- Only small increases in mixed waste volumes over No Action: - At KCP: 1.7 MGY	- Liquid nonhazardous waste volumes from operations would increase over No Action: - At Mound: 132 MGY	- Liquid nonhazardous waste volumes from operations would increase over No Action: - At Pinellas: 153 MGY	- Liquid nonhazardous waste volumes from operations would increase over No Action: - At RFP: 148 MGY	1991 liquid nonhazardous waste volumes from operations: - At KCP: 200 MGY - At Mound: 47.4 MGY - At Pinellas: 65.8 MGY - At RFP: 55.2 MGY
- At SRS: 0.3 MGY - At SNL: 3.2 MGY - At LANL: 0.4 MGY - At Y-12: 0.004 MGY	- At SRS: no increase - At SNL: 3.2 MGY - At LANL: 0.1 MGY - At Y-12: no increase	- At SRS: 0.3 MGY - At SNL: no increase - At LANL: 0.4 MGY - At Y-12: no increase	- At SRS: 0.3 MGY - At SNL: 3.2 MGY - At LANL: 0.4 MGY - At Y-12: no increase	- At SRS: 185 MGY - At SNL: 200 MGY - At LANL: 183 MGY - At Y-12: 12.4 MGY
Waste Management (continued)—Solid Nonhazardous Waste				
- Only small increases in mixed waste volumes over No Action: - At KCP: 282 ft³/yr	- Solid nonhazardous waste volumes from operations would increase over No Action: - At Mound: 359,000 ft³/yr	- Solid nonhazardous waste volumes from operations would increase over No Action: - At Pinellas: 473,000 ft³/yr	- Solid nonhazardous waste volumes from operations would increase over No Action: - At RFP: 430,000 ft³/yr	1991 solid nonhazardous waste volumes from operations over No Action: - At KCP: 494,935 ft³/yr - At Mound: 140,130 ft³/yr - At Pinellas: 3,942 ft³/yr - At RFP: 268,000 ft³/yr - At SRS: 753,000 ft³/yr - At SNL: 800,000 ft³/yr - At LANL: 302,200 ft³/yr - At Y-12: 289,110 ft³/yr
- At SRS: 1,000 ft³/yr - At SNL: 9,340 ft³/yr - At LANL: 10,680 ft³/yr - At Y-12: <1 ft³/yr	- At SRS: no increase - At SNL: 9,300 ft³/yr - At LANL: 6,680 ft³/yr - At Y-12: no increase	- At SRS: 1,000 ft³/yr - At SNL: 40 ft³/yr - At LANL: 8,680 ft³/yr - At Y-12: no increase	- At SRS: 1,000 ft³/yr - At SNL: 9,340 ft³/yr - At LANL: 6,000 ft³/yr - At Y-12: no increase	

E4 3465-15

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 16 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Human Health				
- No adverse health effects to workers and the public have been identified as a result of relocated activities associated with the Proposed Action at KCP, SRS, or LANL. Activities relocated to SNL would result in cancer risks to workers due to the introduction of small amounts of chemical solvents, but these risks would be within acceptable guidelines. Measures to minimize risks such as substituting less toxic solvents or modifying production processes would be implemented. - Radiological doses remain within all applicable regulatory limits. - Consequences of potential accidents would not increase appreciably at any site.	- No adverse health effects to workers and the public have been identified as a result of operations activities associated with the Mound alternative at LANL. Activities relocated to Mound and SNL would result in cancer risks to workers but these risks would be within acceptable guidelines. Measures such as substituting less toxic solvents or modifying production processes would be implemented to minimize cancer risks. - Radiological doses remain within all applicable regulatory limits. - Consequences of potential accidents would not increase appreciably at any site.	- At Pinellas, adverse health effects to workers (cancer risk of 4.2×10^{-5}) and the public (cancer risk of 3.1×10^{-6}) have been identified as a result of operations activities associated with the Pinellas alternative. No adverse health effects to workers and the public have been identified at SRS or LANL with this alternative. Measures such as substituting less toxic solvents or modifying production processes would be required to reduce the cancer risks at Pinellas to within acceptable guidelines. - Radiological doses remain within all applicable regulatory limits. - Consequences of potential accidents would not increase appreciably at any site.	- At RFP, adverse health effects to workers (cancer risk of 5.3×10^{-4}) and the public (cancer risk of 1.2×10^{-5}) have been identified as a result of operations activities associated with the RFP alternative. Activities relocated to SNL would result in cancer risks to workers but these risks would be within acceptable guidelines. Measures such as substituting less toxic solvents or modifying production processes would be implemented to reduce the cancer risks at RFP and minimize worker cancer risks at SNL. - Radiological doses remain within all applicable regulatory limits. - Consequences of potential accidents would not increase appreciably at any site.	- At RFP, there are toxic effects of chemicals to workers; and cancer risk to workers (5.3×10^{-4}) and the public (1.2×10^{-5}). At Pinellas, there is a cancer risk to workers of 4×10^{-5} and the public of about 1.5×10^{-6}. At KCP, there is a cancer risk of 1.2×10^{-5} to workers and 4.7×10^{-6} to the public. There are no significant human health effects expected at any of the sites as a result of continuing operation. Waste minimization and solvent reduction and substitution programs are being implemented at all sites to reduce and minimize adverse health effects to workers and the public. - The radiological doses at all sites fall within applicable regulatory limits. - Consequences of potential accidents would not increase at any site.

E4 3465-16

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 17 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Cumulative Impacts				
No cumulative impacts on land resources, noise, water resources, geology and soils, or cultural resources at KCP, SRS, LANL, or SNL.	No cumulative impacts on land resources, noise, water resources, geology and soils, or cultural resources at LANL or SNL. Potential for minor cumulative noise impacts at Mound due to operation related traffic noise.	No cumulative impacts on land resources, noise, water resources, geology and soils, or cultural resources at Pinellas, SRS, LANL, or SNL.	No cumulative impacts on land resources, noise, water resources, geology and soils, or cultural resources at RFP, SRS, LANL, or SNL.	No cumulative environmental impacts are expected.
Minor cumulative air quality impacts at KCP, SRS, LANL, and SNL due to increased emissions from relocated activities.	Minor cumulative air quality impacts at Mound, LANL, and SNL due to increased emissions from relocated activities.	Minor cumulative air quality impacts at Pinellas, SRS, LANL, and SNL due to increased emissions from relocated activities.	Minor cumulative air quality impacts at RFP, SRS, LANL, and SNL due to increased emissions from relocated activities.	No cumulative air quality impacts are expected.
Minor beneficial cumulative direct and indirect economic impacts at KCP, SRS, LANL, and SNL due to increased workforce. Minor adverse direct and indirect impacts at Mound, Pinellas, and RFP due to closeout of Complex nonnuclear missions and reduction in workforce.	Minor beneficial cumulative direct and indirect economic impacts at Mound, LANL, and SNL due to increased workforce. Minor adverse direct and indirect impacts at KCP, Pinellas, and RFP due to closeout of Complex nonnuclear missions and reduction in workforce.	Minor beneficial cumulative direct and indirect economic impacts at Pinellas, SRS, LANL, and SNL due to increased workforce. Minor adverse direct and indirect impacts at KCP, Mound, and RFP due to closeout of Complex nonnuclear missions and reduction in workforce.	Minor beneficial cumulative direct and indirect economic impacts at RFP, SRS, LANL, and SNL due to increased workforce. Minor adverse direct and indirect economic impacts at KCP, Mound, and Pinellas due to closeout of Complex nonnuclear missions and reduction in workforce.	Reduced workforce numbers due to lower production levels at KCP, Mound, Pinellas, SRS, and SNL. Minor adverse cumulative direct and indirect economic effects would be expected. At RFP and LANL, increased workforce numbers would have minor beneficial cumulative direct and indirect economic effects.

D7 3463-17

TABLE ES-3.—Summary Comparison of Environmental Consequences of the Proposed Action and Alternatives—Continued
[Page 18 of 18]

Proposed Action Kansas City Plant	Mound Plant Alternative	Pinellas Plant Alternative	Rocky Flats Plant Alternative	No Action
Cumulative Impacts (continued)				
- Cumulative worker health impacts are expected at KCP, SRS, LANL, and SNL due to relocated processes and hazardous materials. Cumulative health impacts would be within acceptable limits and guidelines. Measures to reduce workers' health effects would be implemented at all sites. - No cumulative environmental effects are expected at Mound, Pinellas, or RFP with the Proposed Action.	- Cumulative worker health impacts would be expected at Mound, LANL, and SNL. Cumulative health impacts would be within acceptable limits and guidelines. Measures to reduce workers' health effects would be implemented at all sites. - No cumulative environmental effects would be expected at KCP, Pinellas, or RFP with the Mound alternative.	- Cumulative worker health impacts would be expected at Pinellas, LANL, and SNL. Cumulative health impacts would be within acceptable limits and guidelines. Measures to reduce workers' health effects would be implemented at all sites. - No cumulative environmental effects would be expected at KCP, Mound, or RFP with the Pinellas alternative.	- Cumulative worker health impacts would be expected at RFP, SRS, LANL, and SNL. Cumulative health impacts would be within acceptable limits and guidelines. Measures to reduce workers' health effects would be implemented at all sites. - No cumulative environmental effects would be expected at KCP, Mound, or Pinellas with the RFP alternative.	No cumulative workers' health impacts are expected.

E4 3465-18