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INL

Ten-Year Comprehensive Site Plan

APPROVALS

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On July 15, 2002, Secretary of Energy, Spencer Abraham, announced a major mission realignment for the Idaho National Engineering and Environmental Laboratory (INEEL). This realignment establishes the Laboratory as the nation's leading center for nuclear energy research and development within the framework of multi-program responsibilities to expand nuclear energy as a reliable, affordable, and clean energy source for our nation's energy future. This *Ten Year Comprehensive Site Plan* establishes the framework for current and future infrastructure needs. The Department of Energy is merging the INEEL and Argonne National Laboratory-West to become the Idaho National Laboratory. This plan is the first document to integrate INEEL and Argonne National Laboratory needs and resources, and is expected to mature significantly as mission requirements are better defined and synergies are realized from the merger.

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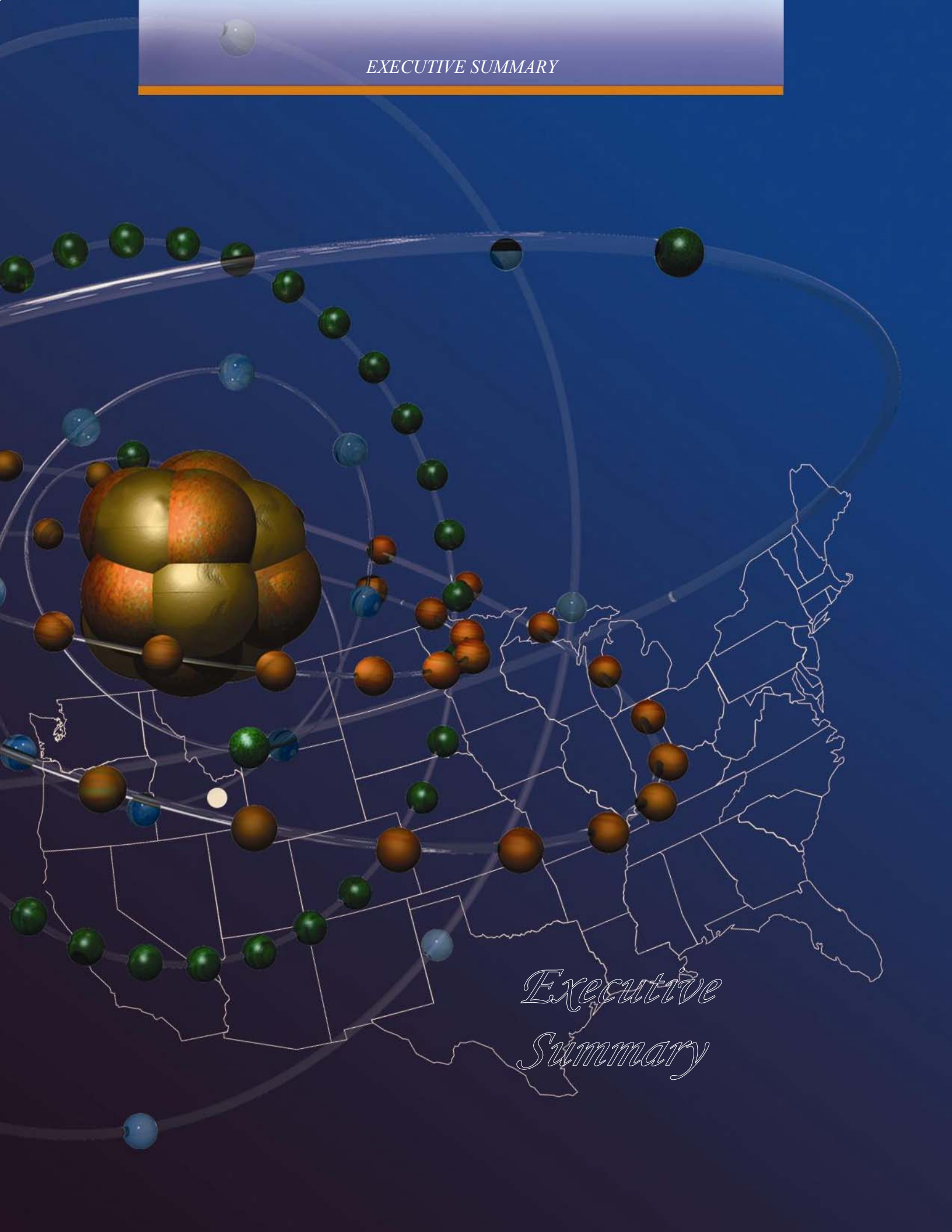
ACRONYMS

ANL-W	Argonne National Laboratory–West
CAMP	Capital Asset Management Process
CDS	Console Display System
CE	Capital Equipment
CFA	Central Facilities Area
CLF	Consolidated Laboratory Facility
D&D&D	Deactivation, Decontamination, and Decommissioning
DOE	Department of Energy
EM	Office of Environmental Management
FAST	Fluroinel Dissolution Process and Fuel Storage
FIMS	Facility Information Management System
FPF	Facility and the Fuel Processing Facility
GPP	General Plant Projects
INEEL	Idaho National Engineering and Environmental Laboratory
INL	Idaho National Laboratory
INTEC	Idaho Nuclear Technology and Engineering Center
IRC	INEEL Research Center
LICP	Line Item Construction Project
NASA	Nuclear Space Initiative
NE	Office of Nuclear Energy
NEPA	National Environmental Policy Act
NRF	Naval Reactors Facility
RAL	Remote Analytical Laboratory Expansion
RCRA	Resource Conservation and Recovery Act
RTF	Remote Treatment Facility

RTS	Reactor Trip System
RWMC	Radioactive Waste Management Complex
S&S	Safeguards and Security
SAF	System Analysis Facility
SCADA	Supervisory Control and Data Acquisition
SMC	Specific Manufacturing Capability Program
TAN	Test Area North
TPC	Total Project Cost
TRA	Test Reactor Area
WCB	Willow Creek Building
WROC/PBF	Waste Reduction Operations Complex/Power Burst Facility



Executive Summary

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Introduction

The Department of Energy (DOE) Office of Nuclear Energy, Science, and Technology (NE) has been directed to enhance the capabilities of the newly realigned Idaho National Laboratory[a] (INL) to implement priority initiatives in Nuclear Energy and National Security and to conduct basic scientific research in support of assigned key DOE missions.

The INL's missions are critical to achieve domestic energy security as set forth in the President's National Energy Policy (May 2001). Successful achievement of these assigned missions will result in development of the technological underpinnings of a bold new nuclear and hydrogen-powered economy and an unprecendented era of domestic energy security.

This is the first Ten-Year Comprehensive Site Plan integrating the facility and infrastructure needs of ANL-W and the INEEL to accomplish the assigned missions.

This *Ten-Year Comprehensive Site Plan* presents a mission needs analysis of existing facilities and infrastructure, recommendations for short- and long-term recapitalization of existing mission-essential facilities and infrastructure and a plan for revitalization of laboratory facilities to achieve the missions. A key component of this plan is establishing a work environment suitable to retain and attract employees with the education and skills necessary to advance the missions. This requires significant investment in state-of-the-art equipment and modern research facilities.

The Office of Environmental Management (EM) retains responsibility for the cleanup of the INL and manages that effort as the Idaho Completion Project. This Plan focuses on NE programs and multi-program Lead Program Secretarial Office responsibilities. Other Program Secretarial Office plans will be included in future revisions.

Vision/Mission

As a multi-program national laboratory, the INL supports the current and future needs of DOE-NE, Naval Reactors, and other DOE offices, together with other federal agencies such as the Department of Defense and Department of Homeland Security.

The INL is ideally positioned to achieve the nation's multi-program vision. More than 50 years of successful nuclear and associated research have established a solid foundation of technical expertise and supporting infrastructure. The Laboratory includes an 889-square-mile high desert site with two main technology centers located at Argonne National Laboratory-West and the Test Reactor Area. A third technology center located in Idaho Falls includes laboratories and facilities that support basic and applied research and development activities.

Leveraging these unique national assets, the INL will successfully conduct programs in four assigned vision/mission areas:

Advancing Nuclear Energy Technology. The INL will provide leadership, technology, and engineering demonstration support for current and future operating reactors and advanced nuclear energy systems. Development of DOE's Generation IV advanced nuclear energy systems

a. The Idaho National Laboratory is comprised of the former Idaho National Engineering and Environmental Laboratory and Argonne National Laboratory–West.

will be a key component in reestablishing U.S. leadership in the international nuclear community and achieving hydrogen production capabilities. The INL's advanced fuel-testing capabilities and fuel-processing technologies and facilities will be vital to the Advanced Fuel-Cycle Initiative.

National Security Technology Development and Testing. The INL will be instrumental in working to develop more robust, U.S.-critical infrastructure with specific emphasis on electrical power, communications, cyber security, and transportation. INL expertise will continue to provide solutions to problems in the Defense and Intelligence communities.

Providing Advanced Technology Services and Support. The INL will continue its long history of providing outstanding support to vital U.S. government missions. Safe operation of both commercial and naval nuclear reactors over the years can be traced to work performed at the INL. Future services and support will range from continued irradiation and fuels testing for the Naval Nuclear Propulsion Program to developing and demonstrating lightweight armor products for the Department of Defense.

INL will leverage its unique national assets to advance nuclear energy, national security, technology services, and basic science research.

Conducting Basic Science Research. The INL is expanding its fundamental science program and applying sound science and engineering principles through multidisciplinary teaming to provide tangible solutions to current and future real-world problems. Advances in basic science will span many fields, including: materials science and testing, biological sciences, subsurface science, nuclear fuels, and fusion safety.

Ten-Year Comprehensive Site Plan Overview

The *Ten-Year Comprehensive Site Plan* describes how the INL and its NE sponsor will acquire new facilities, infrastructure systems and equipment; and decommission facilities and infrastructure systems that are no longer needed. The plan provides a brief history and description of the site, defines mission-essential facilities and describes program requirements. It outlines the infrastructure planning process, assesses facility and structure condition, discusses the space management process, documents the plan for excess facility disposition and new construction, establishes the baseline for the site's deferred maintenance and the path forward to meet industry standards. The plan also documents and evaluates current and future priority infrastructure requirements, and provides performance measures to understand how the physical state of the complex is changing over time to meet the desired end state.

Facilities and Infrastructure Projects

Significant recapitalization investment in the existing infrastructure will be required to support revitalization projects and ongoing work.

The INL has developed preliminary cost estimates for the proposed projects and has assembled composite funding profiles to establish the magnitude and timing of the budgets that will be required to meet these needs.

The average age of INL facilities is 30 years. The average reactor age is 39 years, and key process and laboratory facilities are approaching 30 years (see Figure ES-1). Because of the previous emphasis on environmental cleanup, infrastructure funding has focused on minimum safety and essential services requirements. To meet the current mission needs and extend the useful life of these facilities increased investment is essential.

Key laboratory and process facilities need to be upgraded to advance the assigned missions.

Recapitalization

Recapitalization is defined as incremental maintenance and infrastructure investments above the current target base funding needed to: extend facility lifetimes, reduce the risk of unplanned facility system and equipment failures, or increase operational efficiencies and effectiveness.

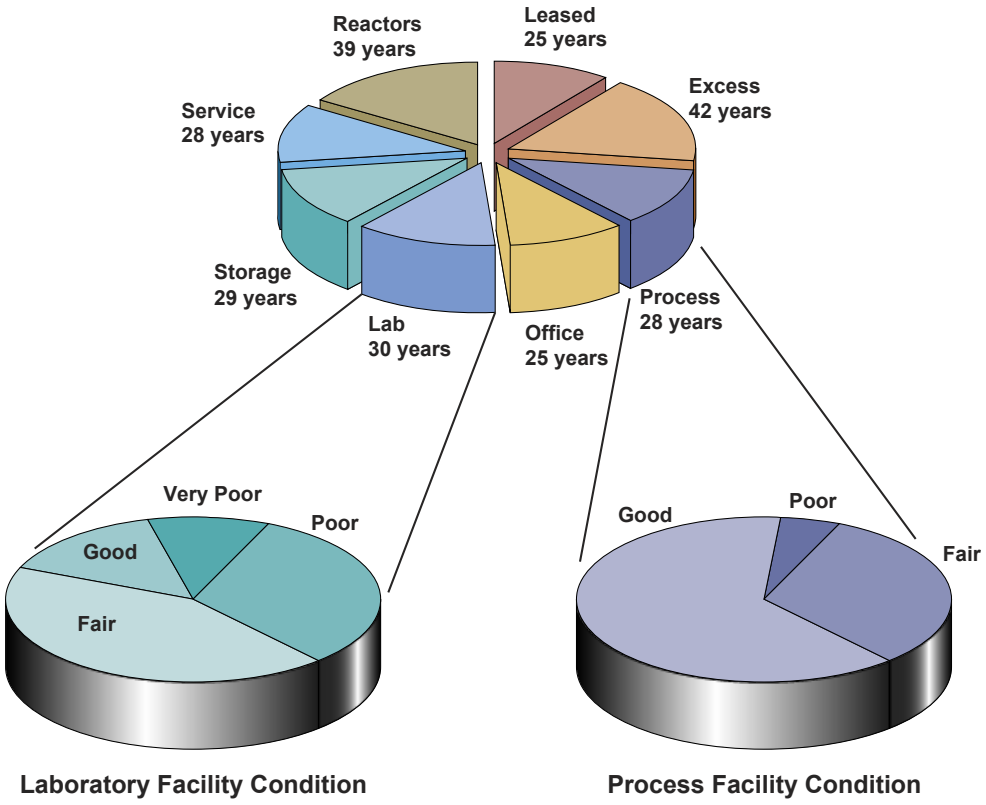


Figure ES-1. Average age and condition of current mission-essential facilities.

The goal of the recapitalization program is to aggressively reduce deferred maintenance to within industry standards (5% of replacement plant value), return mission-essential facilities to an assessment level of good and maintain the facilities at industry standards.

The laboratory has identified more than $475 million of needed recapitalization investments during the ten-year period (FY 2004 – 2013). This is above the projected target funding level of approximately $725 million of primarily fixed and operating costs. Target and above-target investments are summarized in Chapter 5. These investments are necessary to extend the useful life of mission-essential facilities.

During this planning period, the laboratory requires an additional $475 M over the projected target funding to effectively restore the Idaho National Laboratory infrastructure.

Approximately 60% of mission-essential laboratory facilities are in poor to fair condition. Accordingly, this plan will focus primarily on upgrading or replacing these key facilities.

Outdated facilities and inadequate infrastructure negatively affect productivity, staff recruitment and retention; raise operating costs; and significantly impair the laboratory's ability to perform its missions.

Major components of the INL recapitalization plan include Advanced Test Reactor upgrades, site power high-voltage equipment replacements, site-wide data and control network replacements, investments in scientific computing, capital equipment and reduction of deferred maintenance backlog to industry standards. Chapter 5 lists needed INL recapitalization projects.

Funding these recapitalization projects will have an immediate and pronounced impact on the condition of the INL infrastructure. Aging and deteriorating structures will be upgraded or replaced resulting in an infrastructure that is able to support revitalization projects and meet mission requirements.

Condition Assessments

Facility Condition Assessment Survey inspections are conducted following DOE Orders and Standards. Deficiencies identified during the Condition Assessment Survey inspections are recorded in the DOE Condition Assessment Information System (CAIS) database.

Experience indicates conditions recorded in the DOE Facility Information Management System (FIMS) process are optimistic since the process does not evaluate all pertinent factors. Accordingly, the condition assessment process at the INL incorporates a number of additional factors including the condition of subsystems and process-related equipment to arrive at a best indication of actual facility condition.

The INL manages assets by using an integrated facility life-cycle planning process. Strategic planning identifies high-level mission goals and strategies, which provide broad-based support for life-cycle planning. The planning process also integrates specific mission needs that are identified through stakeholder input, inspections, detailed work plans, and program documents.

Maintenance: Deferred, Routine, and Repair

Identified deferred maintenance has been increasing at the INL. However, continuing improvements in the effectiveness and efficiency of the INL maintenance program combined with the recapitalization projects identified in this plan are expected to stabilize the deferred maintenance backlog by 2007. By 2013, deferred maintenance levels are expected to meet the industry target range of less than 5% of replacement plant value. (Deferred maintenance is maintenance that was not performed when it should have been or was scheduled to be and which, therefore, is put off or delayed for a future period.) Routine maintenance will continue to be funded primarily with indirect funds, but the focus will be on mission-essential facilities identified in this plan.

Idaho National Laboratory deferred maintenance backlog will not be reversed without a significant recapitalization program.

Footprint Reduction Program

In mid-2001, under the purview of the DOE Office of Environmental Management, an *INEEL Footprint Reduction and Consolidation Plan* was developed to inactivate older facilities without any identified future mission.

By 2013, the combined efforts of the INL and the Idaho Completion Project are expected to result in a 40% reduction in the site's current active facility footprint resulting in long-term mortgage reduction.

Revitalization

Revitalization is defined as investment in new facilities and systems to support programmatic missions. Major components of the revitalization needs profile include construction of facilities for hydrogen technology demonstration, next generation nuclear power plants, thermal hydraulic loop and thermal spectrum criticality facilities, a multi-program secure facility, and modifications to the Advanced Test Reactor. Preliminary estimates for these facilities total more than $2 billion.

Details of these projects and linkages to infrastructure needs are provided in Chapter 3.

Shortfalls

Figure ES-2 shows that projected target (base case) funding levels for the INL do not provide sufficient capital project funding to bring the infrastructure up to required levels or maintain it adequately to support INL missions.

Additionally, Figure ES-3 shows that significant programmatic funding is required for new facilities to support the assigned missions.

Revitalization funding requires $2.0 B over the planning period to provide the capability to perform the assigned missions.

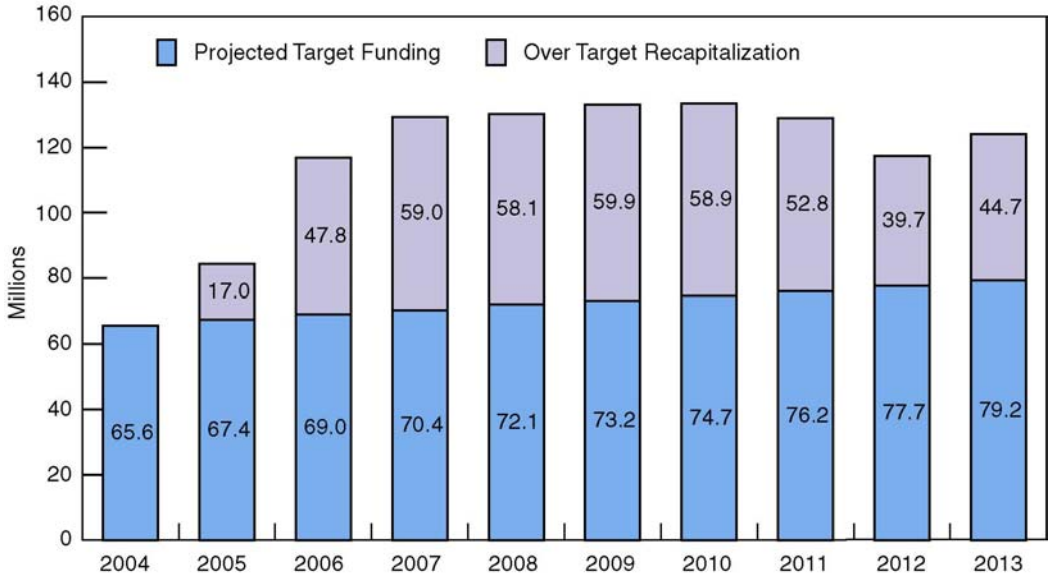


Figure ES-2. Required recapitalization funding.

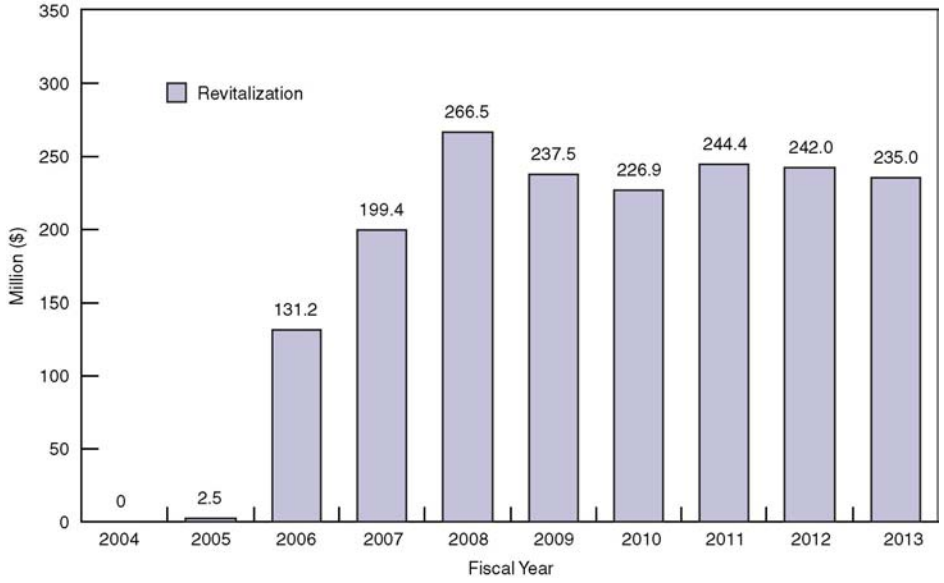


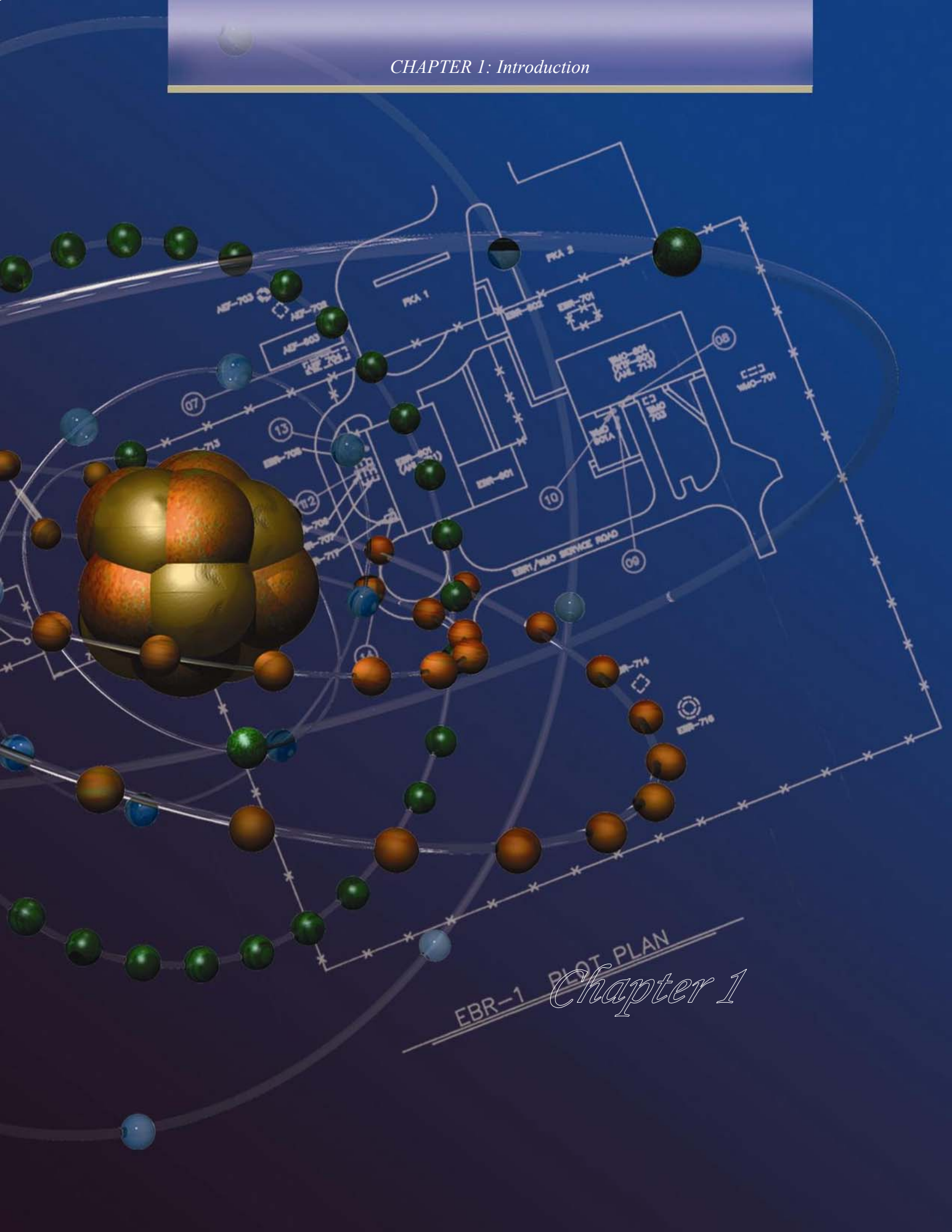
Figure ES-3. Projected revitalization funding required to support future programmatic mission needs.

Toward the Future

This *Ten-Year Comprehensive Site Plan* proposes a methodology to provide the facilities and infrastructure necessary to advance energy and national security interests and provide sound infrastructure for basic scientific research in support of key DOE programs.

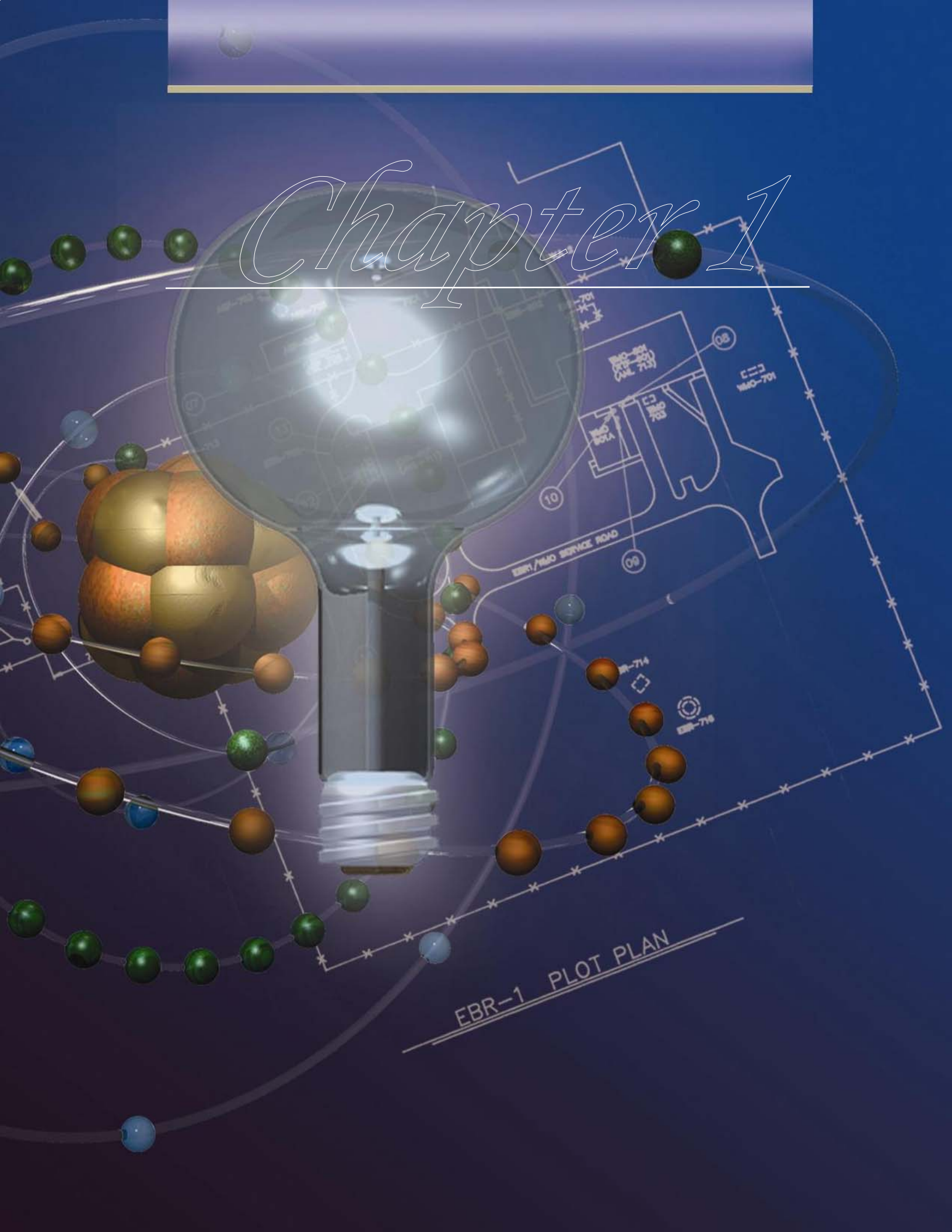
The future can be achieved through completion of the recapitalization and revitalization projects identified in this plan. INL has the processes in place to manage its priorities and resources. INL is committed to ensuring its facilities and infrastructures remain viable to perform the assigned mission.

The INL will focus investment on mission essential facilities to support the assigned mission. Processes are in place to execute a sound stewardship.



Chapter 1

Chapter 1


EBR-1 PLOT PLAN
EBR-1/MAD SERVICE ROAD
MAD-701
MAD 703
MAD 801A
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Introduction

1-1 Overview

On July 15, 2002, Secretary of Energy, Spencer Abraham, announced a major mission realignment for the Idaho National Engineering and Environmental Laboratory (INEEL), establishing the laboratory as the nation's leading center for nuclear energy research and development. The Secretary said:

> "INEEL will be the epicenter of our efforts to expand nuclear energy as a reliable, affordable and clean energy source for our nation's energy future. The array of new responsibilities you are being assigned carry the weight of grave expectations, because your labors will be critical to our national security and energy security missions."

The Department also announced that Argonne National Laboratory–West (currently managed by DOE-Chicago) would be incorporated with the Idaho National Engineering and Environmental Laboratory—herein referred to as the Idaho National Laboratory (INL).

The DOE Office of Nuclear Energy, Science, and Technology (NE) is now designated as the Laboratory's Lead Program Secretarial Office and has assumed ownership of the Laboratory's common use support facilities and infrastructure. The Office of Environmental Management retains responsibility for the cleanup of the INL and manages that effort as the Idaho Completion Project.

The INL will provide leadership to accomplish the NE vision and will:

- Advance nuclear energy technology through applied research, development, and demonstration
- Create a center for National Security technology including homeland security, technology development for the intelligence community, Department of Defense program support, and nonproliferation/counter proliferation systems development
- Provide advanced technology services and support to vital United States government missions including the Nuclear Space initiative, the Radioisotope Power/Heat Source Program, and the Specific Manufacturing Capability
- Conduct basic scientific research in support of key DOE missions in materials sciences and testing, nuclear fuel technology, biological and environmental sciences and fusion energy.

1-1.1 Plan Objective

The objective of the INL *Ten Year Comprehensive Site Plan* is to provide the foundation for strategic planning and the cornerstone of initiatives to restore, revitalize, and enhance the laboratory's capabilities. The plan was created in accordance with direction and guidance provided by NE.

1-1.2 What the TYCSP Plan Will Accomplish

This *Ten Year Comprehensive Site Plan* will identify the infrastructure needs necessary to facilitate advancement of the INL assigned missions. **Recapitalization** will address the basic infrastructure needs and **revitalization** will outline the major programmatic needs. New, or enhanced, planned programs that will require major revitalization include:

- Providing U.S. leadership for research, development, and testing of: supercritical water-cooled reactors; gas-cooled reactors; liquid metal-cooled reactors; and fast reactors as part of the international Generation IV Reactor Program
- Designing, constructing, and testing of the Next Generation Nuclear Plant prototype reactor

- Developing the reactors and processes required to support a hydrogen-based energy system
- Performing lead roles in the DOE Advanced Fuel Cycle to develop a more optimal closure path for the disposition of commercial spent nuclear fuel
- Developing and testing space nuclear reactors for space power and propulsion programs
- Implementing innovations in science-based and integrated engineering systems for national security and intelligence within DOE, other government agencies, and industrial partners
- Employing the scientific reputation and credentials of INL researchers in accomplishing a broad range of work for a variety of government agencies, including materials sciences and testing, nuclear fuel technology, biological and environmental sciences, and fusion energy

Recapitalization of the infrastructure will be required to support these programs. Major investments will be required to restore and maintain the infrastructure. This will be accomplished through a recapitalization program intended to:

- Stabilize deferred maintenance by the end of FY 2007.
- Aggressively reduce deferred maintenance to within industry standards (less than 5% of replacement plant value by 2013).
- Return facility conditions for mission essential facilities and infrastructure to an assessment level of good (or better).
- Provide reliable, cost-effective infrastructure support for multi-program activities.

1-1.3 Plan Elements

The plan provides the high-level performance measures, prioritized projects, schedules, and funding requirements necessary to achieve the INL's assigned missions.

1-2 Assumptions

Development of the *Ten Year Comprehensive Site Plan* was based on the following assumptions.

- Recapitalization and revitalization funding will be available throughout this planning period to support the assigned mission goals
- The site boundaries will not change
- Investment in facilities will be in focused areas while reducing the overall footprint
- Planned Safeguards and Security infrastructure upgrades are included in Chapter 5, Table 5-7 for completeness; however, Safeguards and Security is funded separately, and is not included as part of recapitalization
- Excess facility disposition funding for NE-owned buildings is included as part of recapitalization
- This initial *Ten Year Comprehensive Site Plan* does not address Environmental Management programmatic activities at facilities for which they are the Cognizant Secretarial Office.

1-3 Current Situation

The INL and the Idaho Completion Project share a site encompassing eight primary facility areas on an 889-square-mile (569,135-acre) site approximately 50 miles west of Idaho Falls, and laboratory, administration, warehouse and storage facilities in Idaho Falls.

1-3.1 Description and Condition of INL Facilities

INL infrastructure includes 312 buildings, associated support structures, a full complement of utilities, including communication and data transmission systems, approximately 800 miles of improved and unimproved roads, 61 miles of electrical transmission lines, and 14 miles of railroad lines. These systems connect and serve the primary facility areas.

Infrastructure at the site is old and overall is deteriorating. Major investments will be required to restore and maintain the infrastructure. This will be accomplished through a major recapitalization program. The current projected

target (base case) funding levels is insufficient to bring the infrastructure up to the condition necessary to support INL programs.

1-3.2 Deferred Maintenance

The backlog of deferred maintenance is continuing to grow and will not be reversed without a significant recapitalization program. Deferred maintenance degrades operational reliability and increases the potential for environmental, safety, and health liabilities. (Deferred maintenance is maintenance that was not performed when it should have been or was scheduled to be and which, therefore, is put off or delayed for a future period.)

1-3.3 Excess Facilities Disposal Program

Currently, the NE has 23 buildings that are inactive, and another 80 that are projected to be inactive by the end of this planning period. The *Excess Facilities Action Plan* identifies NE facilities for future disposal. Recapitalization funds are used to inactivate and decommission facilities; however, the current target funding levels are insufficient to execute the plan.

1-3.4 New Facilities

This plan includes the construction of new facilities that are necessary to accommodate the assigned missions. Examples of these facilities include:

- Next Generation and Test Reactors
- Multiprogram Secure/Classified Facility
- New Multiprogram Laboratory Facility
- Modifications to the Advanced Test Reactor.

1-3.5 Recapitalization and Revitalization

The corrective action for the current situation is to create and follow a *Ten Year Comprehensive Site Plan,* which identifies the necessary above target funding to accomplish recapitalization and revitalization, and sets forth schedules and performance measures.

Recapitalization is defined as the incremental maintenance and infrastructure investments above the current target base needed to extend facility lifetimes, reduce the risk of unplanned facility system and facility equipment failures, or increase operational efficiencies and effectiveness.

Significant recapitalization investments will be required to restore the infrastructure and support new projects and ongoing work. The recapitalization profile accounts for those funds necessary to correct existing infrastructure shortcomings.

Revitalization includes investments in new facilities and systems in support of ongoing and future programmatic missions. Major new projects are planned as part of the new INL nuclear energy research mission. The revitalization profile includes major new test facilities and their necessary support infrastructure enhancements.

Chapter 5 provides a list of recapitalization and revitalization projects and equipment acquisitions that are planned throughout this timeframe.

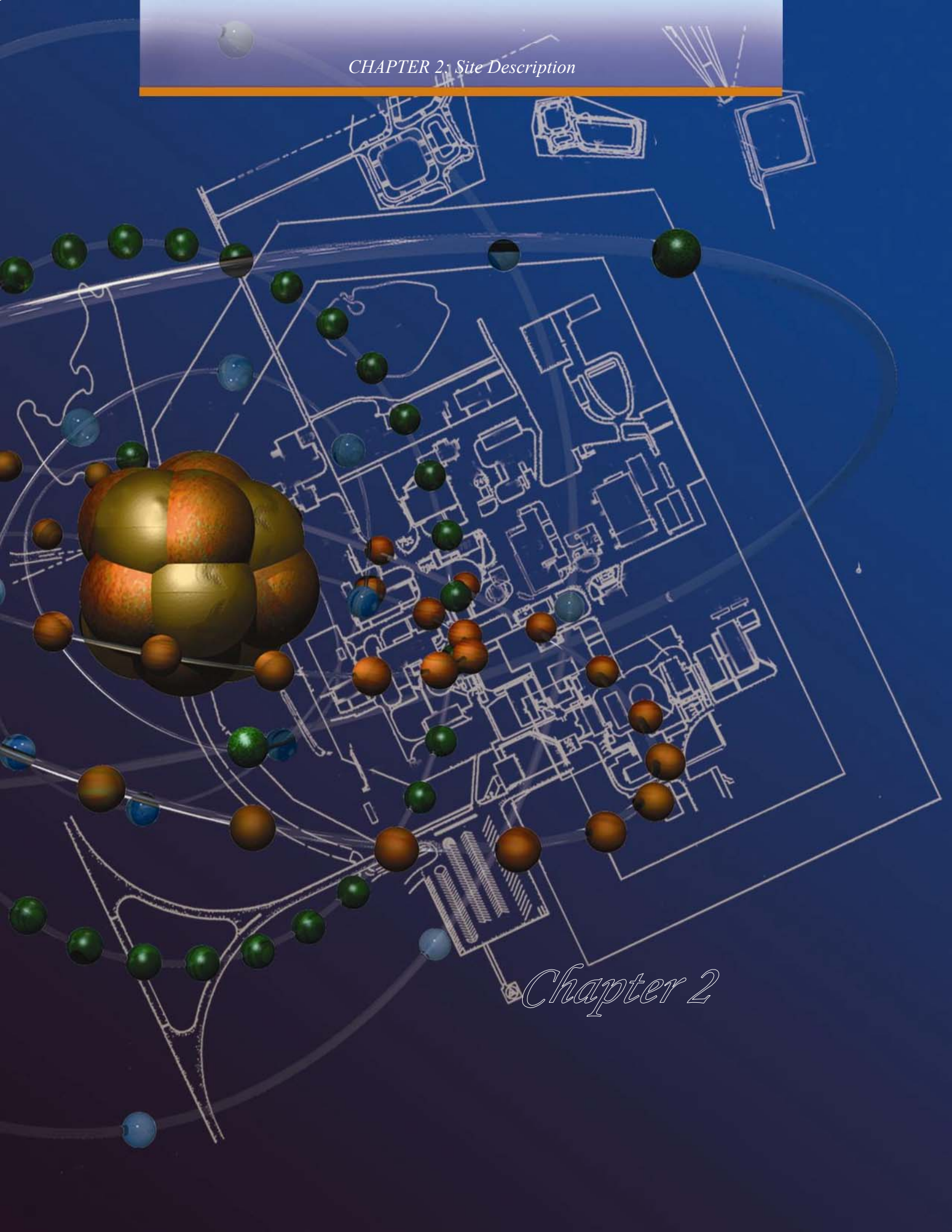
1-4 National Environmental Policy Act

Completion of a National Environmental Policy Act (NEPA) Environmental Checklist is required for all proposed INL projects or activities. Proposed projects receive a preliminary review to identify any NEPA issues that could impact schedule, scope, or cost. NEPA review is incorporated into INL project planning, work authorization processes, and Integrated Safety Management as required by DOE Project Management processes.[1] The NEPA documentation and authorization is prepared before the start of definitive (Title II) design.

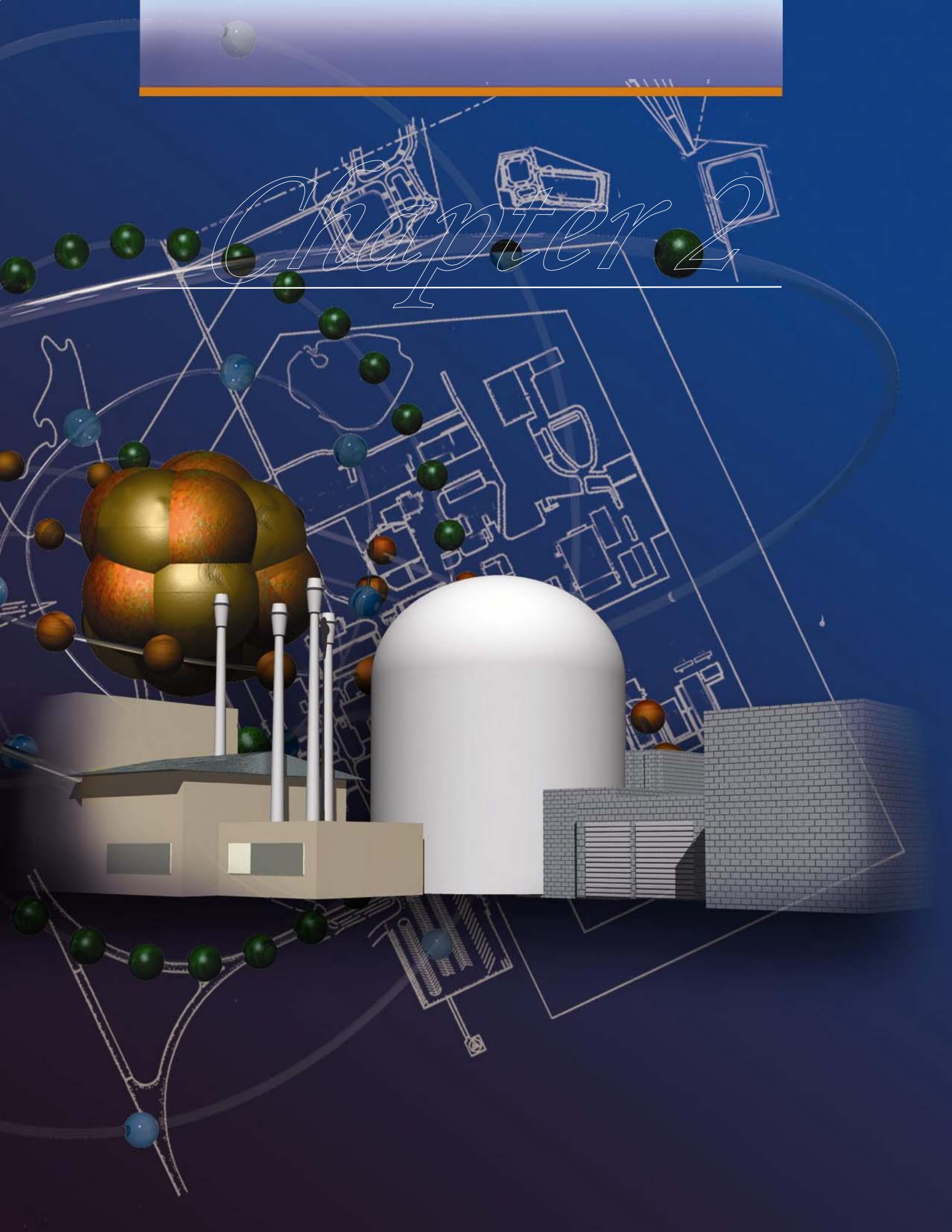
1-5 Changes from the Prior-Year TYCSP

This *Ten Year Comprehensive Site Plan* is the first one produced under this specific format at the INL.

1. DOE Order 413.3, "Program and Project Management for the Acquisition of Capital Assets," U.S. Department of Energy, October 13, 2000.



Chapter 2


Chapter 2

Site Description

2-1 History and General Site Description

The Idaho National Laboratory (INL) began to emerge during World War II when the U.S. Navy withdrew a land area of 270 square miles in southeast Idaho from the public domain for use as a gunnery range. In 1949, the U.S. Atomic Energy Commission (predecessor to the Department of Energy [DOE]) obtained the Navy's gunnery range and called the site the National Reactor Testing Station. Later, lands were added for use in developing and testing nuclear reactors and related facilities.

Over the years, the world's largest concentration of nuclear reactors (52) were built at the site. Most of them were first-of-a-kind facilities, and all made significant contributions to the development of nuclear energy for commercial uses and naval propulsion applications.

Currently, the INL has approximately 6,000 employees supporting a wide range of research, development, and applied engineering programs. The Laboratory has extensive expertise in light water and gas-cooled nuclear systems design, development and testing as well as expertise in liquid metal-cooled reactors and fuel cycle analysis. The Laboratory serves the needs for nuclear regulatory and safety technical support, probabilistic risk analysis, nuclear engineering and design, nuclear fuels development and testing, radiation measurements, safety analysis, nuclear engineering and design, fuels and fuel cycle development, and non-proliferation.

Sitewide infrastructure encompasses eight primary facility areas on an 889-square-mile (569,135 acre) site approximately 50 miles west of Idaho Falls, and laboratory, administration, warehouse, and storage facilities in Idaho Falls (see Figure 2-1). Argonne National Laboratory–West, currently managed by DOE-Chicago, will transfer to the Idaho Operations Office in October 2004. The Naval Reactors Facility located on the Site is managed by the DOE-Pittsburgh Naval Reactors Office and is not covered as part of this plan.

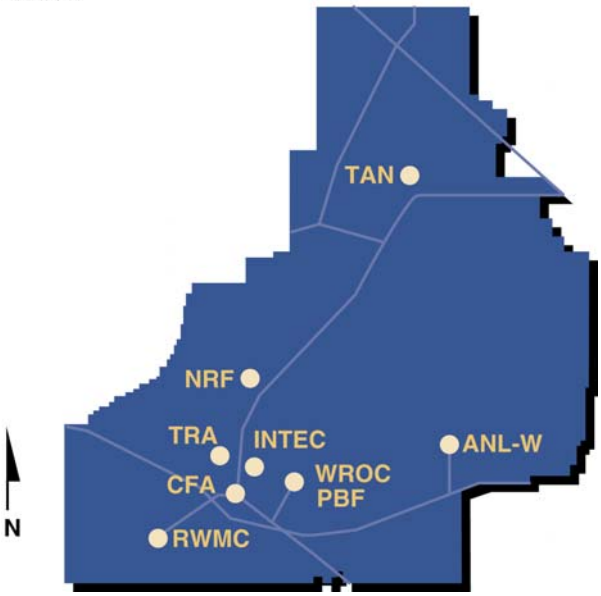


Figure 2-1. Sitewide infrastructure encompasses eight primary facility areas on an 889-square-mile site.

Along with administrative and research facilities located in the city of Idaho Falls, facilities are maintained and operated at the site to support ongoing missions and operations. Site areas include Argonne National Laboratory-West (ANL-W), Test Reactor Area (TRA), Central Facilities Area (CFA), Idaho Nuclear Technology and Engineering Center (INTEC), Radioactive Waste Management Complex (RWMC), Test Area North (TAN), Waste Reduction Operations Complex/Power Burst Facility (WROC/PBF), and the Sitewide Area (the land area surrounding the boundaries of the primary facility areas). This chapter includes overviews of each area's current and projected infrastructure status.

2-1.1 Argonne National Laboratory-West

Figure 2-2. Aerial view of Argonne National Laboratory-West.

For the past 50 years, Argonne National Laboratory has been a leader in the development of advanced nuclear reactor technology. Breakthroughs in the type of fuel used in nuclear-generated power, improved fuel disposition technologies, and the proven demonstration of an inherently safe nuclear power plant (Experimental Breeder Reactor II) have all been developed at the INL's Argonne National Laboratory-West complex.

Currently, 635 employees work at Argonne National Laboratory–West. There are 54 buildings with an average age (weighted by building square footage) of 35 years. Key facilities at Argonne National Laboratory-West include the Fuel Conditioning Facility and Hot Fuel Examination Facility (two large modern hot cell facilities), the Analytical (chemistry) Laboratory, the Electron Microscopy Laboratory, the Fuel Manufacturing Facility (in use for experiments and nuclear materials storage), the Engineering Development Laboratory, the Radioactive Scrap and Waste Facility (spent nuclear fuel and radioactive waste storage facility), the Sodium Processing Facility (a waste sodium processing facility), the Neutron Radiography Reactor, and the Transient Reactor Test Facility and Zero Power Physics Reactor (two test reactors).

These facilities are expected to be major assets in implementing the current and future nuclear energy missions. Figure 2-3 depicts the *Ten Year Comprehensive Site Plan* for Argonne Area buildings.

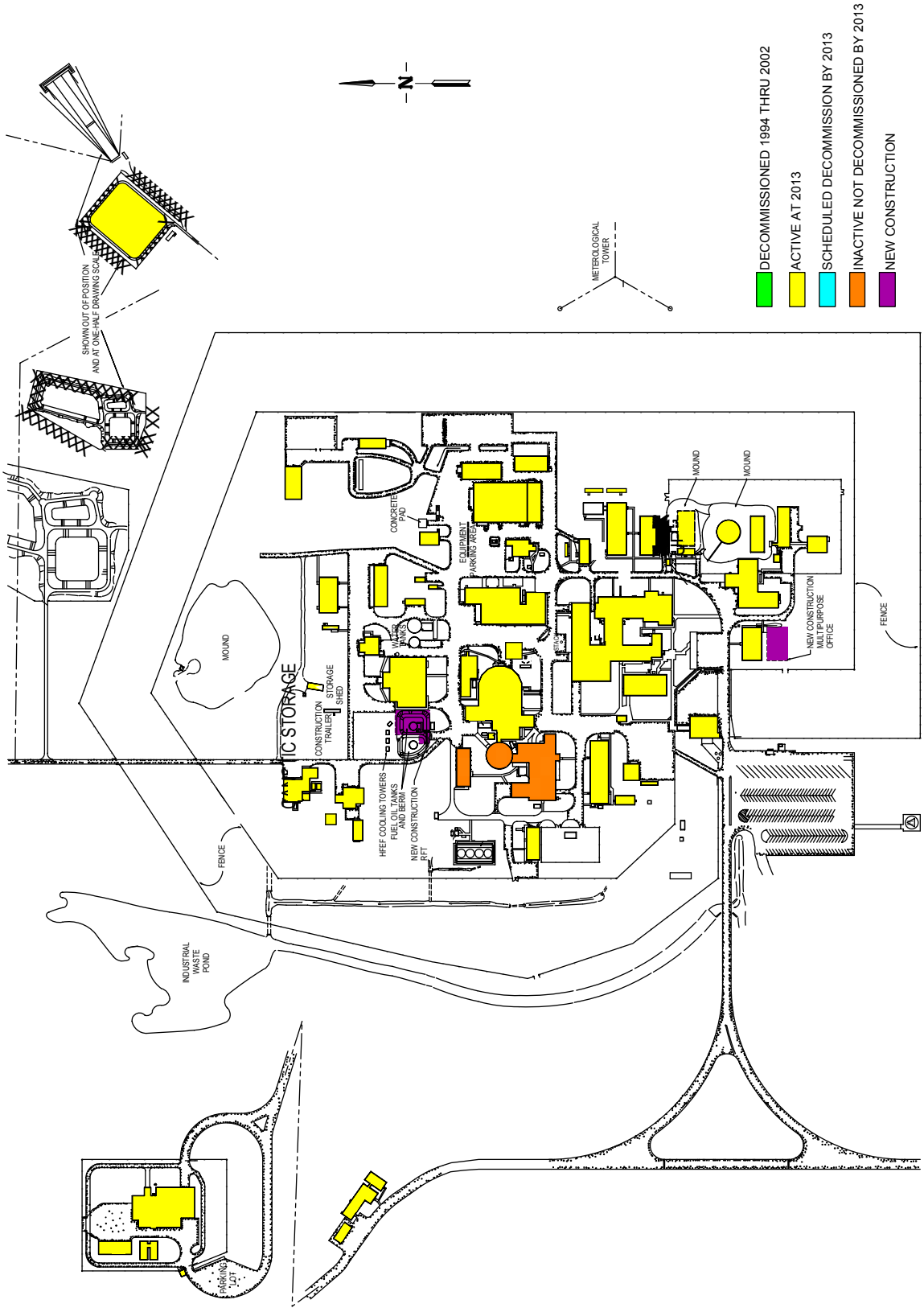


Figure 2-3. Argonne National Laboratory-West footprint reduction map.

2-1.2 Test Reactor Area

Figure 2-4. Aerial view of the Test Reactor Area.

Since the early 1950s the Test Reactor Area has provided facilities for operation of experimental nuclear reactors, physics and chemistry laboratories, administrative space, and other plant support. There are currently 89 buildings at the Test Reactor Area ranging in age from those built in the early 1950s, to newly constructed buildings and structures. Many of the active older buildings need major renovations or replacement.

Today the primary mission of the Test Reactor Area is the continued operation of the Advanced Test Reactor—the world's largest test reactor, which is used to conduct irradiated material testing, nuclear safety research, and nuclear isotope production. The Advanced Test Reactor's current primary mission is reactor fuels and core component development and testing for the Naval Nuclear Propulsion Program. The Advanced Test Reactor will also continue its long-term mission of radioisotope production for medical, industrial, and research applications. The Advanced Test Reactor is planned to provide major support in the development of next-generation nuclear power systems and other advanced nuclear technologies. Infrastructure investments are currently needed to upgrade the site.

In addition to the Advanced Test Reactor, several other significant nuclear operations are conducted at the Test Reactor Area:

Radiochemistry Laboratory Operations. Several laboratories at the Test Reactor Area are equipped to handle radioactive samples. Collectively, the laboratories provide analytical services ranging from analyses of trace materials in environmental samples to intense radiation levels in reactor samples.

Hot Cell Operations. Three hot cells at the Test Reactor Area are used to assemble, disassemble, store, inspect, and examine radioactive or other hazardous material. The hot cells are also used for packaging radioactive isotopes and preparing radioactive material samples for post-irradiation examination. In addition, the cells can be used to perform nuclear chemistry for product separation and radiochemical purification.

The Safety and Tritium Applications Research Program. In a specially designed user facility at the Test Reactor Area, fusion-related research and development is conducted for the DOE Office of Science. The research focuses on how radioactive and hazardous materials behave in fusion machines. The fusion research involves scientists from both national and international laboratories.

Currently, 477 employees work at Test Reactor Area. There are 89 buildings with an average age (weighted by building square footage) of 41 years; 32 key facilities provide direct support to the Advanced Test Reactor operations.

Figure 2-5 depicts the *Ten-Year Comprehensive Site Plan* for Test Reactor Area buildings.

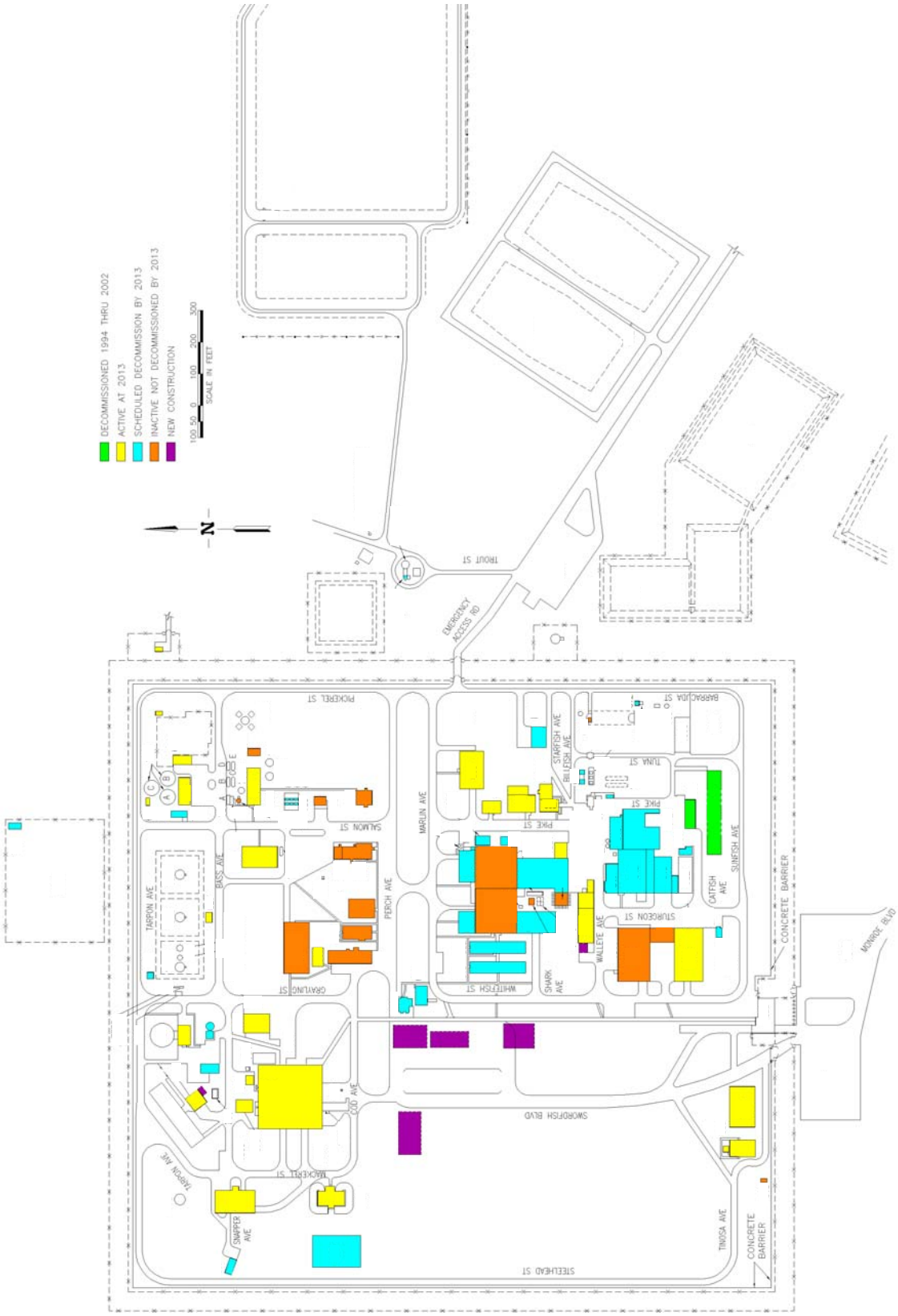


Figure 2-5. Test Reactor Area footprint reduction map.

2-1.3 Central Facilities Area

Figure 2-6. Aerial view of the Central Facilities Area.

The Central Facilities Area consists primarily of administrative and support facilities that provide medical, fire fighting, transportation, security, communications, electrical power, instrument calibration, and health physics services for the Site.

The Central Facilities Area contained old facilities with significant safety and health deficiencies and as a result has benefited from major investments in the last decade. The majority of the active buildings are generally in good condition.

Currently, 979 employees work at the Central Facilities Area. There are 72 buildings with an average age (weighted by building square footage) of 30 years. Key facilities include the Fire Station, Medical Facility, Substation Control House and Electrical Substation, Communications Building, Health Physics Instrumentation Laboratory, and Standards and Calibration Laboratory.

Figure 2-7 depicts the *Ten Year Comprehensive Site Plan* for Central Facility Area buildings.

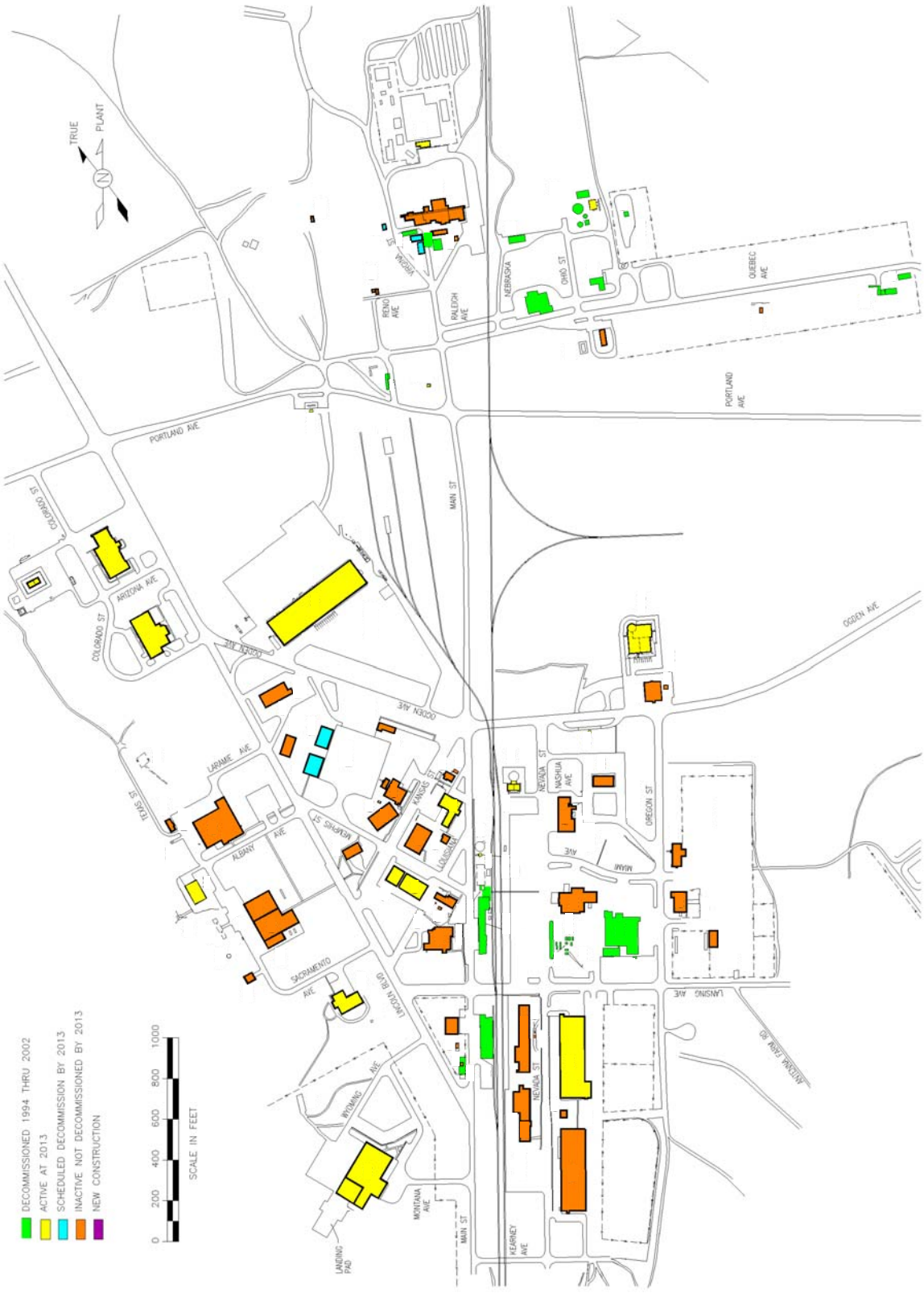


Figure 2-7. Central Facilities Area footprint reduction map.

2-1.4 Idaho Falls

Figure 2-8. Aerial view of DOE-owned INL Research Center.

The Idaho Falls Area is primarily comprised of laboratory facilities, lease laboratory facilities, the main computer support facility, and administrative offices.

The Idaho Falls Area comprises the newest facilities of all the site areas. Closure of facilities within the site boundary will be supported in part by relocation of some personnel and functions to Idaho Falls facilities. Recapitalization investments in Idaho Falls will focus on high performance computing, data networks, telecommunications upgrades, expansion/upgrade of three existing laboratories, and construction of three new facilities. Revitalization projects include the Systems Analysis Facility, INL Secure Facility, Physics Laboratory addition, Geosciences Laboratory, Bio Level III Laboratory, and an Advanced Computing Facility.

Currently, 3,005 employees work in Idaho Falls and other off-site locations. Idaho Falls has a total of 30 buildings; 14 owned and 16 leased. The average age (weighted by building square footage) of owned buildings is 19 years and the average age of leased facilities is 20 years. Key facilities include the Research Laboratories, Energy Storage Technology Laboratory, Supercomputing Center, National Security Laboratory, Systems Analysis Facility, Physics Laboratory, Chemical Storage Facility, Engineering Demonstration Facility, and the Engineering Research Office Building. Many of the leased laboratories are in poor condition and will be replaced with the INL Laboratory Upgrade and Replacement Project.

Figure 2-9 depicts the *Ten Year Comprehensive Site Plan* for Idaho Falls Area buildings.

Figure 2-9. Idaho Falls Area footprint reduction map.

2-1.5 Idaho Nuclear Technology and Engineering Center

Figure 2-10. Aerial view of the Idaho Nuclear Technology and Engineering Center.

The Idaho Nuclear Technology and Engineering Center has been designated as the primary consolidation and operating site for Environmental Management work. This area is one of the Idaho Completion Project sites. Capabilities include a large shielded hot cell, bench-scale separation process testing, and analytical chemistry laboratories. Currently, 1,071 employees work at the Idaho Nuclear Technology and Engineering Center. There are 141 buildings with an average age (weighted by building square footage) of 25 years.

Key facilities that continue to support NE missions include multi-program laboratories, consolidated craft shops, and the Remote Analytical Laboratory. These facilities provide analytical, mass spectrometry, and research support capabilities for the Site and other outside customers.

Figure 2-11 shows the *Ten Year Comprehensive Site Plan* for the Idaho Nuclear Technology and Engineering Center Area buildings.

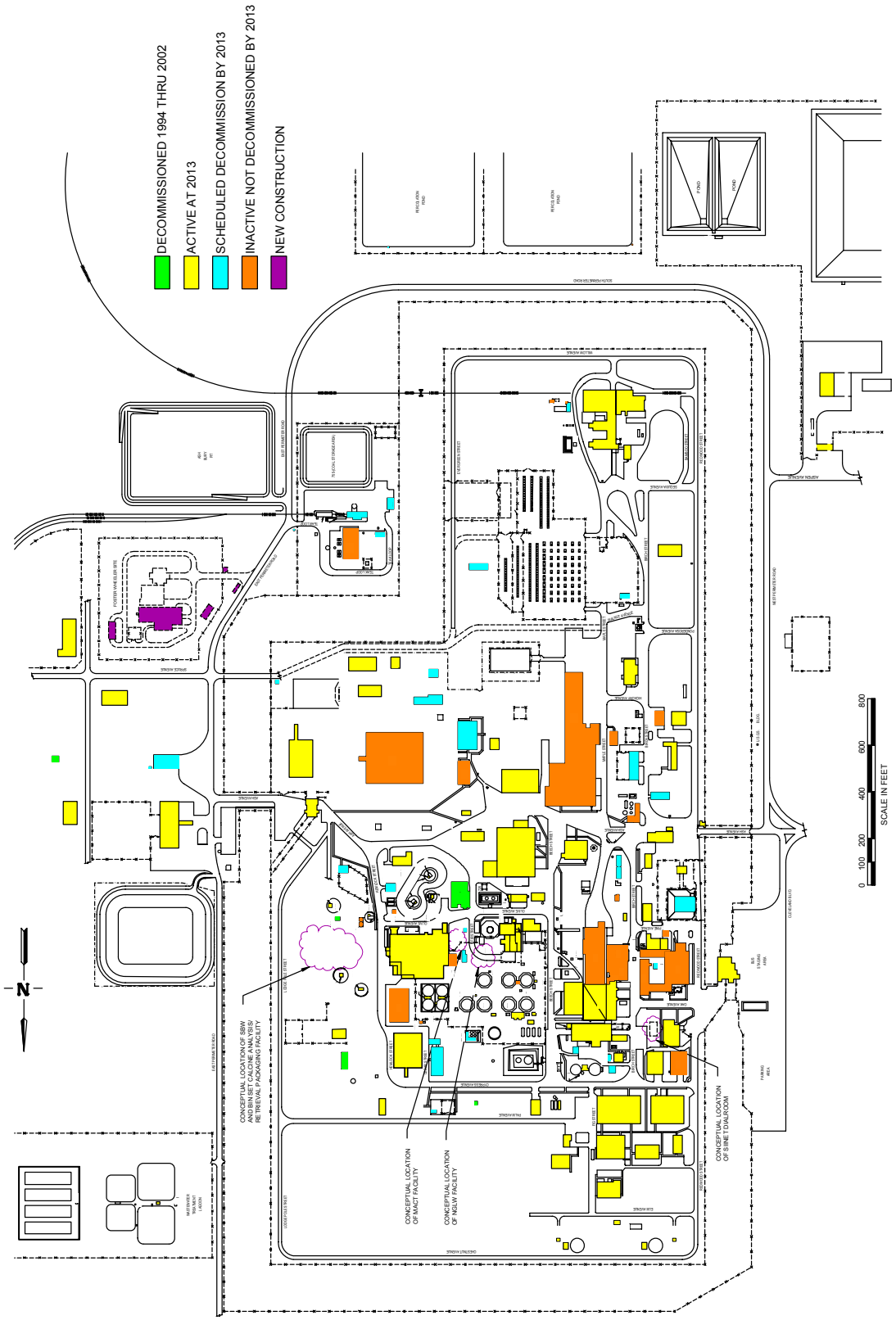


Figure 2-11. Idaho Nuclear Technology and Engineering Center footprint reduction map.

2-1.6 Radioactive Waste Management Complex

Figure 2-12. Aerial view of the Radioactive Waste Management Complex.

The Radioactive Waste Management Complex is owned by Office of Environmental Management and is an Idaho Completion Project site. Work at the Radioactive Waste Management Complex entails management of hazardous and radioactive waste. Area programs are tasked with retrieving, packaging, and shipping transuranic waste out of Idaho on a scheduled basis, management of the Subsurface Disposal Area, operation of the Advanced Mixed Waste Treatment Facility, management of the Transuranic Storage Area, packaging and shipment of untreated wastes to the Waste Isolation Pilot Plant, and meeting Waste Area Group 7 remediation goals.

Currently, 278 employees work at this Complex. There are 48 buildings with an average age (weighted by building square footage) of 7 years supporting the Idaho Completion Project.

Figure 2-13 shows the *Ten Year Comprehensive Site Plan* for the Radioactive Waste Management Complex buildings.

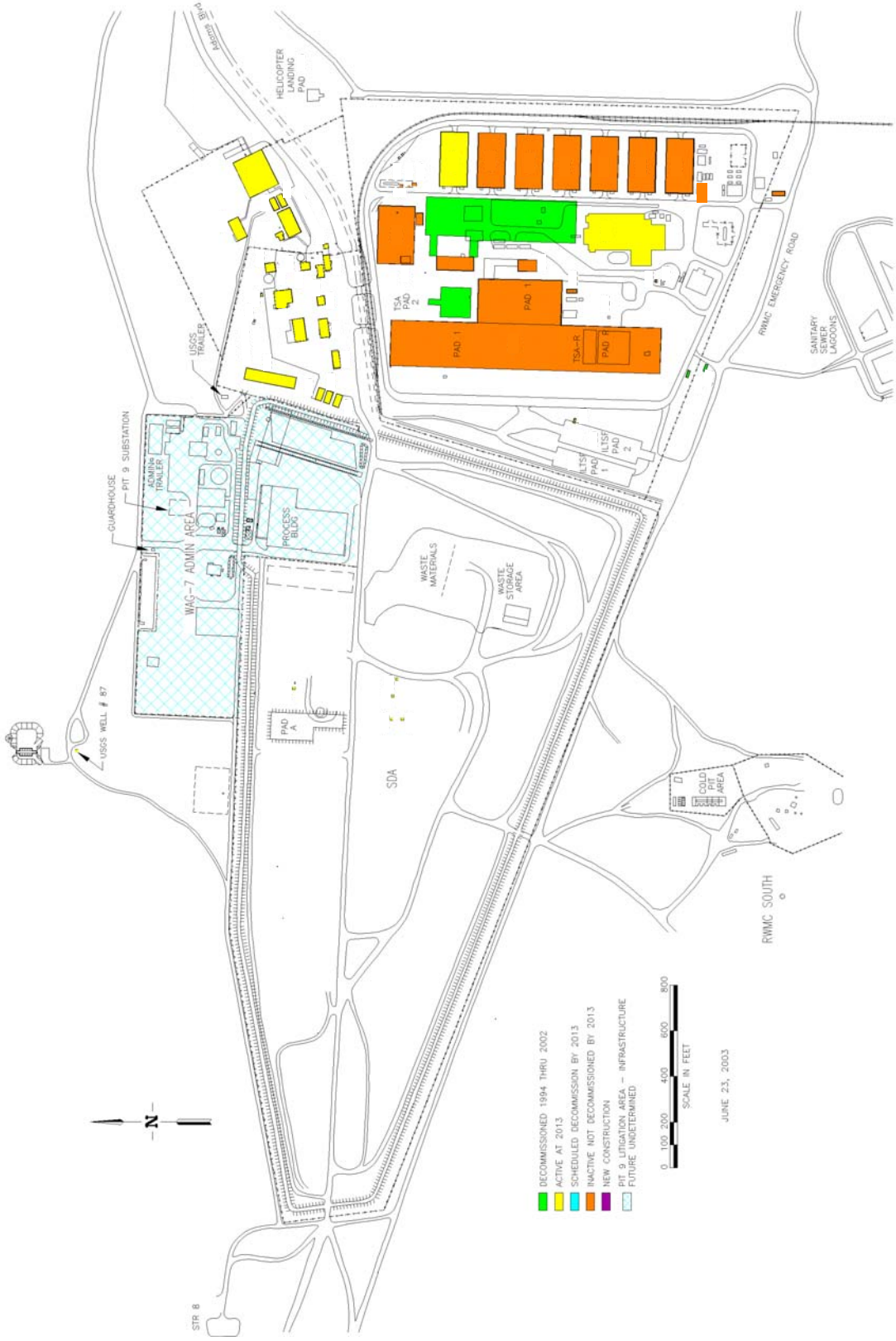


Figure 2-13. Radioactive Waste Management Complex footprint reduction map.

2-1.7 Test Area North

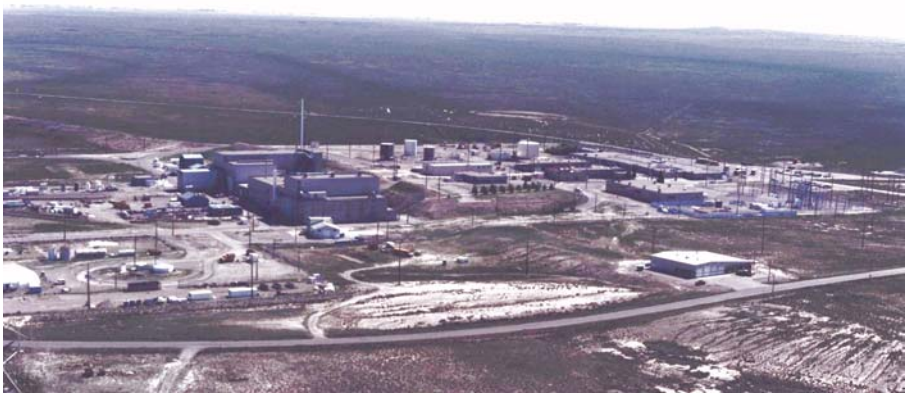


Figure 2-14a. Aerial view of the Test Area North Technical Support Facility.

Figure 2-14b. Aerial view of the Test Area North Contained Test Facility.

Initiated in the mid-1950s, the original mission of Test Area North was to support the U.S. Air Force in its efforts to create a nuclear-powered airplane. Because of Air Force security requirements at that time, Test Area North is geographically isolated from the other primary facility areas. Although the Air Force project was terminated in 1961 before a nuclear aircraft could be produced, that project and others after it resulted in the development of four sub-areas that make up today's Test Area North: (1) the Initial Engine Test Facility, (2) the Water Reactor Research Test Facility, (3) the Technical Support Facility, and (4) the Contained Test Facility (which was originally slated to provide the aircraft hanger and runway facilities). Over the years, these facilities have been modified to support various nuclear and non-nuclear research projects, but only the Technical Support Facility and the Contained Test Facility remain active. During the 1970s these facilities were used extensively to support a series of nuclear experiments to identify the effects on a nuclear reactor should the power plant lose its cooling water. This program was called the Loss-of-Coolant Tests and culminated with its last test in 1985. In 1985, however, the U.S. Army

Figure 2-14c. Aerial view of the Test Area North Initial Engine Test Facility.

Figure 2-14d. Aerial view of the Test Area North Water Reactor Research Test Facility.

selected the facilities at Test Area North to provide the support they needed, and Test Area North became the site of the Specific Manufacturing Capability (SMC) Program. This program produces armor for Army combat vehicles, and is the principle program at Contained Test Facility. Current projections for the anticipated life of this program extend to the 2015 timeframe. The Technical Support Facility has been providing support for the Spent Fuel Program since the late 1980s. And at the conclusion of this program, the Technical Support Facility will undergo facility deactivation, with final disposition of most of the area completed prior to 2012.

Currently, there are 392 employees working at Test Area North. There are 80 buildings with an average age (weighted by building square footage) of 25 years. NE is the landlord for 29 key active buildings used by the SMC Program.

Figures 2-15a – 2-15d depict the *Ten Year Comprehensive Site Plan* for Test Area North buildings.

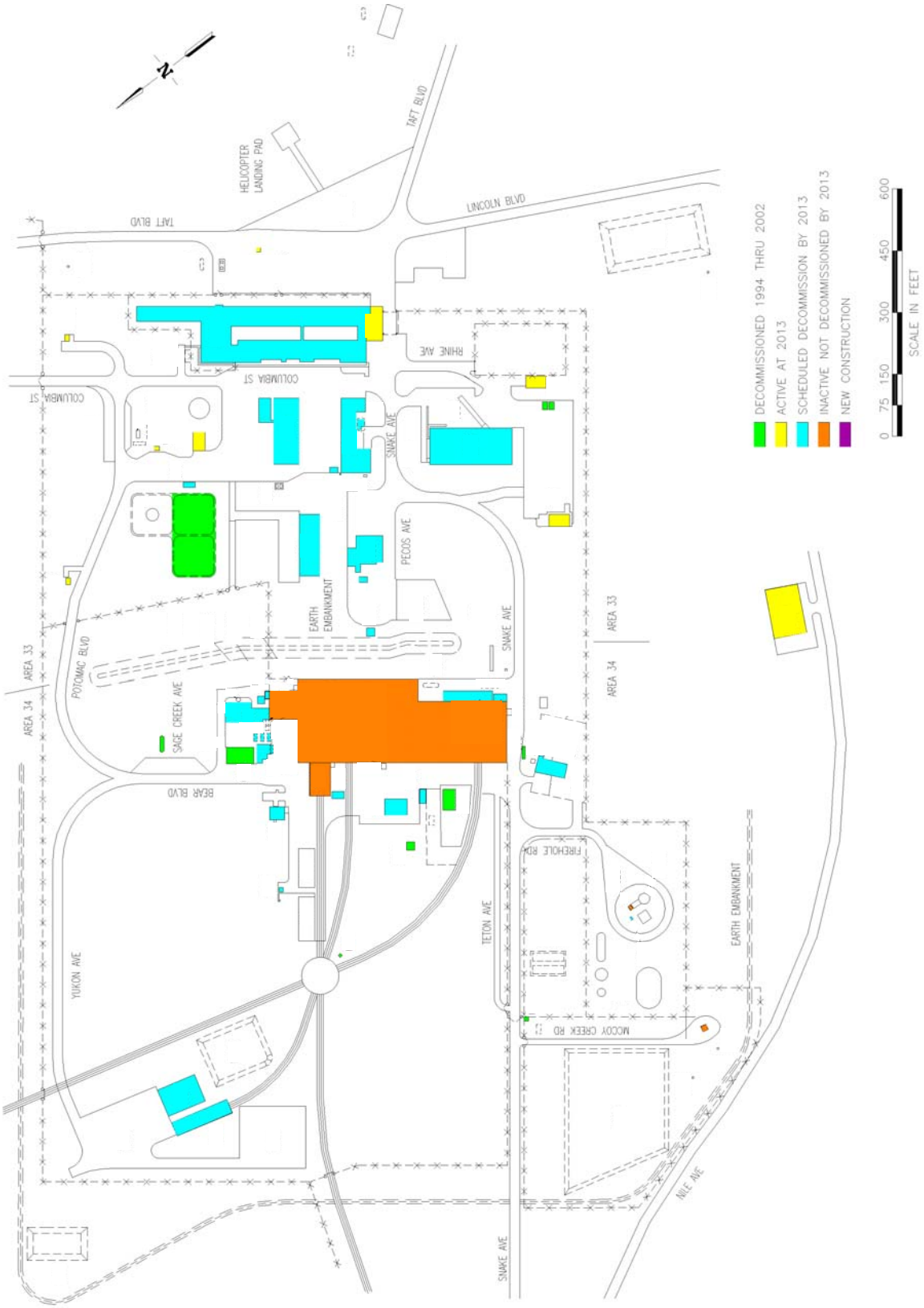


Figure 2-15a. Technical Support Facility footprint reduction map.

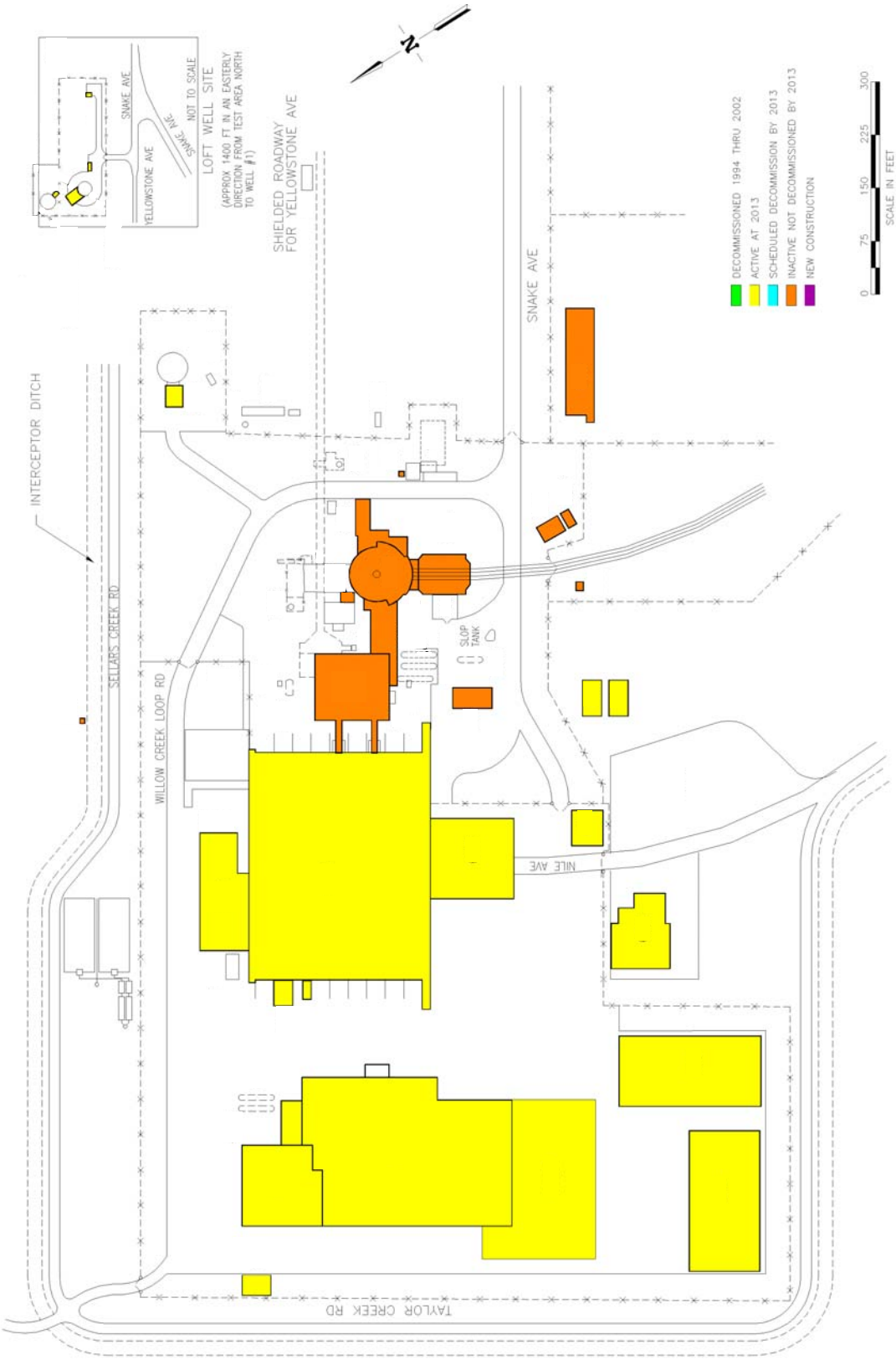


Figure 2-15b. Contained Test Facility footprint reduction map.

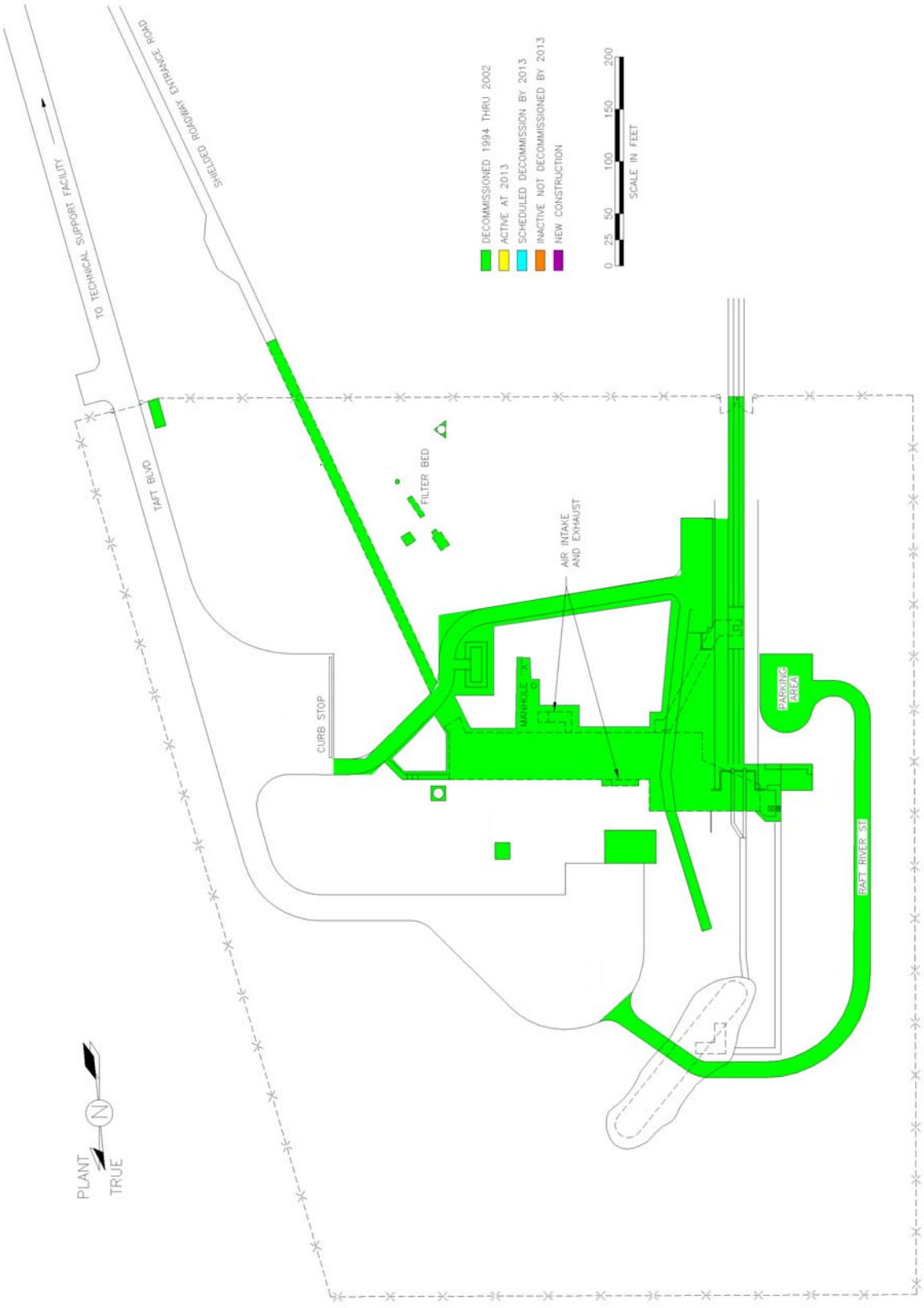


Figure 2-15c. Initial Engine Test Facility footprint reduction map.

Figure 2-15d. Water Reactor Research Test Facility footprint reduction map.

2-1.8 Power Burst Facility/Waste Reduction Operations Complex

Figure 2-16a. Power Burst Facility Control Area.

Figure 2-16b. Power Burst Facility Reactor Area.

The Power Burst Facility/Waste Reduction Operations Complex area is comprised of five areas. One of these areas is currently EM owned and undergoing deactivation. The other four areas are being retained as part of the active site infrastructure and planned for multi-programmatic use.

Figure 2-17 depicts the *Ten Year Comprehensive Site Plan* for Power Burst Facility/Waste Reduction Operations Complex buildings.

Currently, 81 employees work at this Complex. There are 23 buildings with an average age (weighted by building square footage) of 30 years. Some facilities are under consideration for transfer to the Office of Nuclear Energy for the Homeland Security Projects.

Figure 2-16c. Waste Engineering Development Facility.

Figure 2-16d. Mixed Waste Storage Facility.

Figure 2-16e. Waste Experimental Reduction Facility.

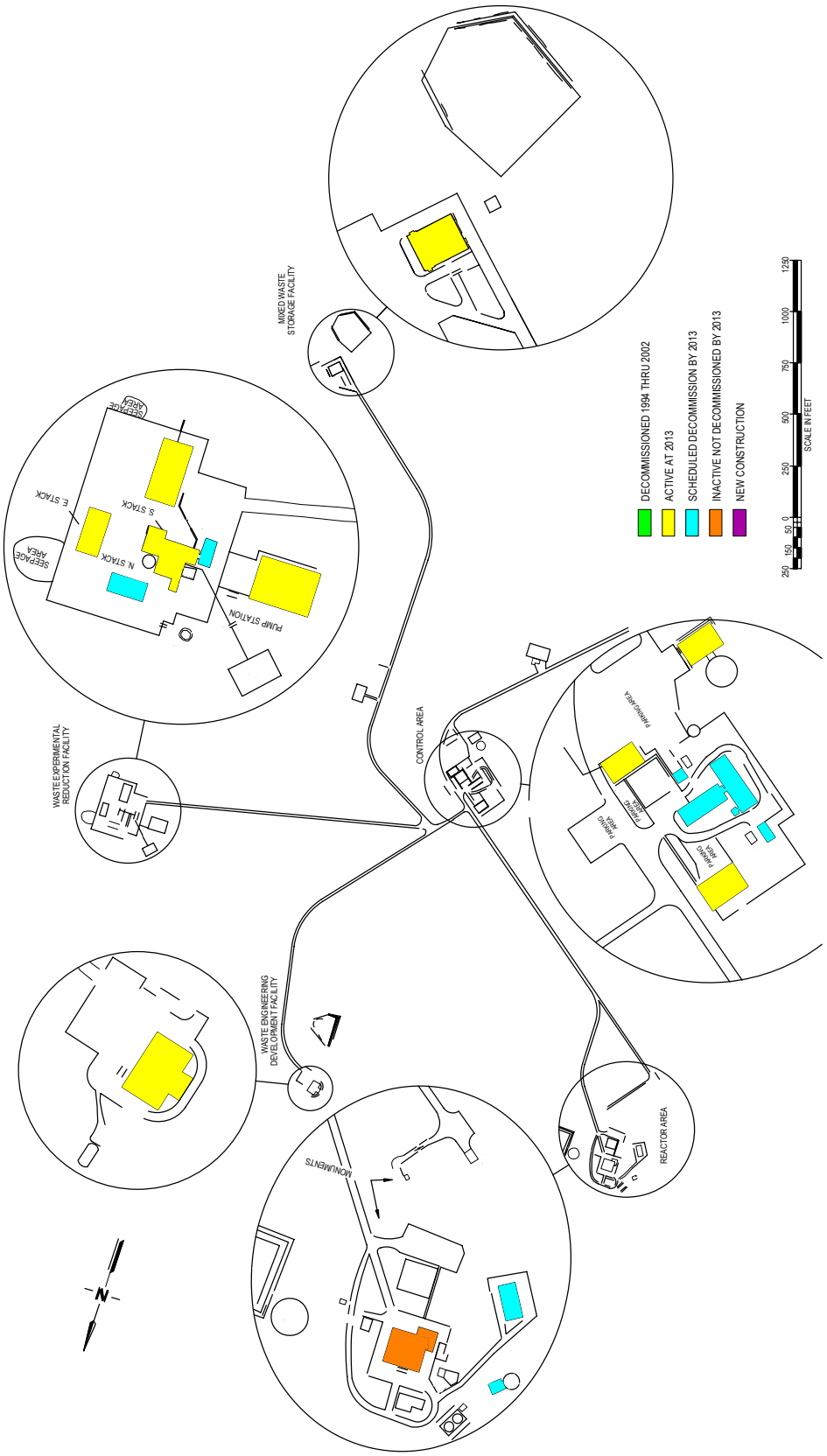


Figure 2-17. Power Burst Facility/Waste Reduction Operations Complex footprint reduction map.

2-1.9 Sitewide

Figure 2-18. The Sitewide Area includes areas such as the Howe Peak communications station.

The Sitewide Area includes all of the land area outside the boundaries of the primary facility areas located on the site. The Sitewide Area also includes Howe Peak and two offsite, leased buildings—one in Boise and one in Pocatello. The area mainly comprises roads, railroads, power distribution systems, communication systems, and utility systems that serve and connect the primary facility areas. The few buildings that are located in the outlying Sitewide Area include such things as guard posts, a weapons training complex, pump houses, and landfill support buildings.

Currently, 21 employees work in the Sitewide Area. There are 32 buildings with an average age (weighted by building square footage) of 29 years. Key facilities in the Sitewide Area include the Firing Range (a security force training center), the Experimental Breeder Reactor I historical site, entrance and exit guard gate facilities, and small structures and utility buildings such as pumphouses and communications buildings. Land uses also include communication, utility, and transportation systems that connect and serve the primary facility areas, and open land that serves as a safety-and-security buffer and a grazing zone. Figure 2-19 depicts the *Ten Year Comprehensive Site Plan* for the Sitewide Area.

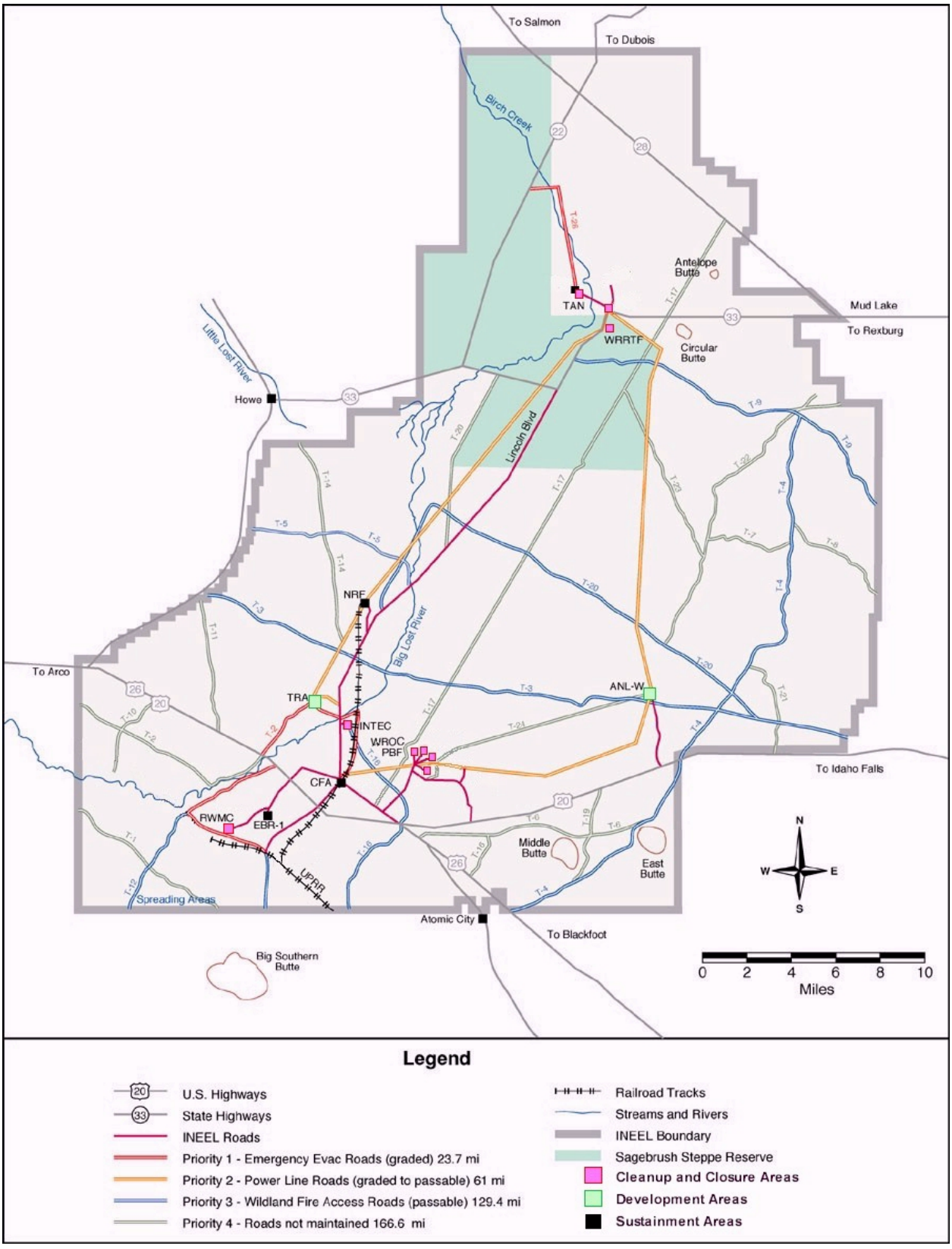
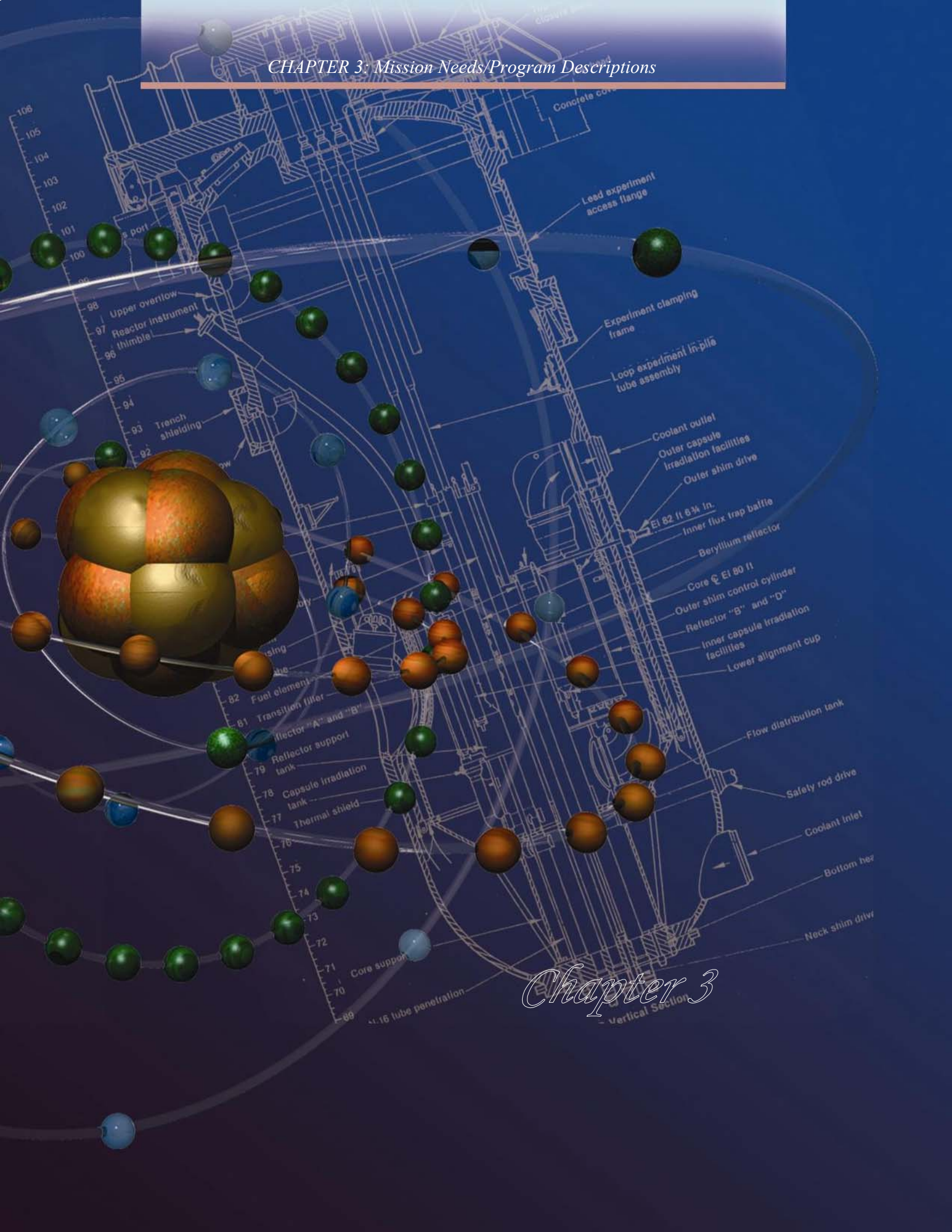
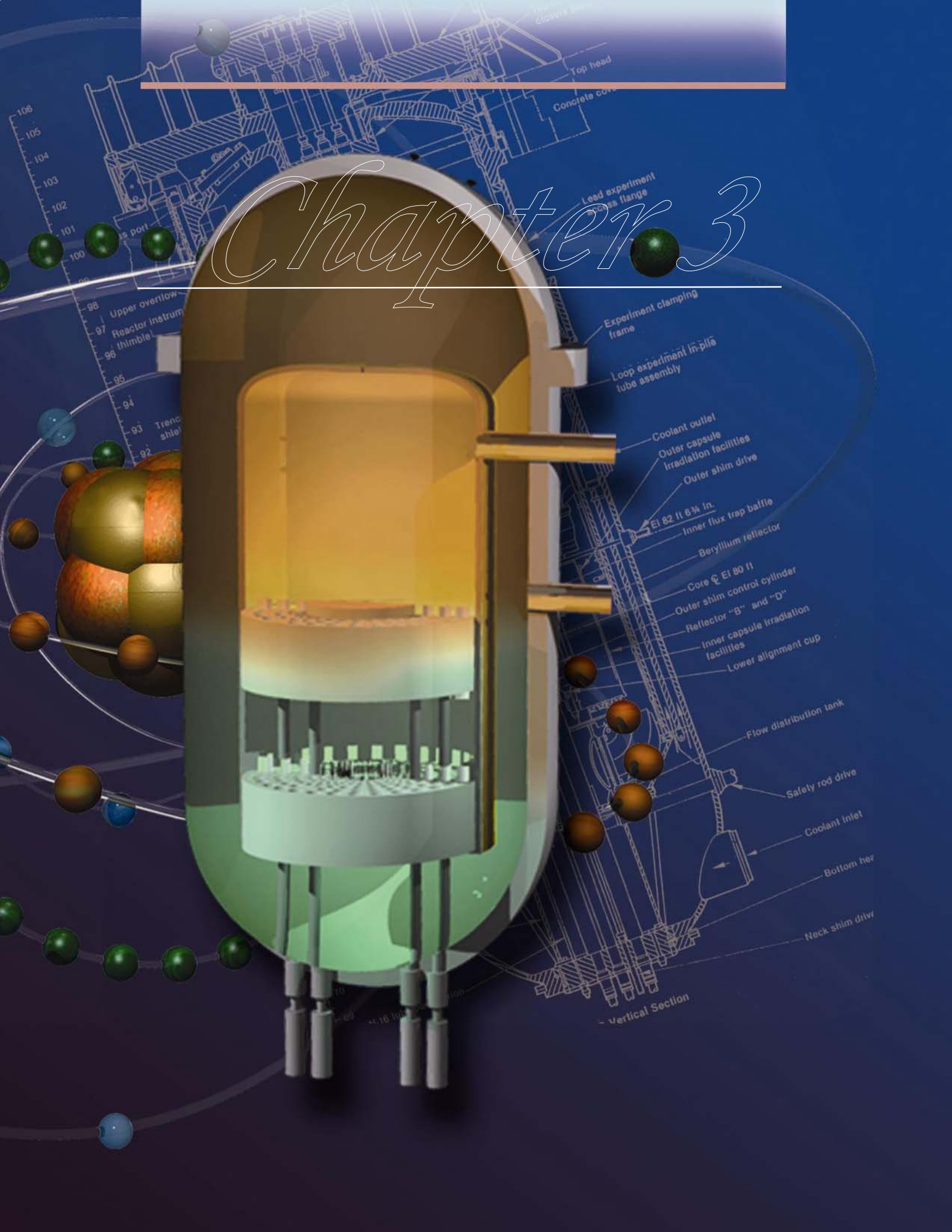


Figure 2-19. Sitewide area map.


Lead experiment access flange
Experiment clamping frame
Loop experiment in-pile tube assembly
Coolant outlet
Outer capsule irradiation facilities
Outer shim drive
El 82 ft 6¾ in.
Inner flux trap baffle
Beryllium reflector
Core ℄ El 80 ft
Outer shim control cylinder
Reflector "B" and "D"
Inner capsule irradiation facilities
Lower alignment cup
Flow distribution tank
Safety rod drive
Coolant inlet
Bottom hea
Neck shim drive
Upper overflow
Reactor instrument thimble
Trench shielding
Fuel element
Transition filler
Reflector "A" and "B"
Reflector support tank
Capsule irradiation tank
Thermal shield
Core support
Vertical Section

Chapter 3


Chapter 3
Top head
Lead experiment
Experiment clamping frame
Loop experiment in-pile tube assembly
Coolant outlet
Outer capsule irradiation facilities
Outer shim drive
El 82 ft 6¾ in.
Inner flux trap baffle
Beryllium reflector
Core ℄ El 80 ft
Outer shim control cylinder
Reflector "B" and "D"
Inner capsule irradiation facilities
Lower alignment cup
Flow distribution tank
Safety rod drive
Coolant inlet
Vertical Section

Mission Needs/ Program Description

At the July 15, 2002, announcement on the Idaho National Laboratory's (INL) mission, Secretary Abraham charged the Laboratory, "to expand nuclear energy as a reliable, affordable, and clean energy source for our nation's energy future." The Laboratory's rich history of technical and scientific expertise in nuclear energy engineering, research, and analysis will provide DOE with the desired nuclear leadership platform. The INL will collaborate with experts throughout the world and will form strategic partnerships with selected universities to develop the expertise needed for effective deployment and operation of the next generation nuclear power systems and technology.

The Director for DOE Office of Nuclear Energy, Science, and Technology (NE), William D. Magwood IV, expanded on the future INL mission realignment in his message for the INEEL Strategic Plan in January 2003, when he wrote,

> "For more than 50 years, the INEEL has made vital contributions to U. S. national security. These contributions have ranged from building, testing, and demonstrating the country's first nuclear reactors to advancing alternative energies, military equipment, and environmental technologies. The INEEL is a valuable multi-program national laboratory well positioned to serve our country for decades ahead."

Additional detail on the anticipated multi-program vision for the laboratory was provided by Mr. Magwood in July 2003 when he discussed the following four missions:

- **Advanced nuclear energy technology through applied research, development, and demonstration**
- **A Center for National Security Technology**
- **Advanced technology services and support to vital United States government missions**
- **Basic scientific research in support of key DOE missions.**

A key element in achieving this multi-program vision will be the revitalization and recapitalization of INL facilities and infrastructure. Revitalization initiatives will add the new facilities necessary to support the program-driven needs discussed in this section. Recapitalization of existing mission-critical facilities and infrastructure will provide the necessary foundation for both current programs and planned revitalization.

The INL vision is clear. To aggressively carry out this vision, planned infrastructure recapitalization funding must be vigorously pursued beginning in FY 2005 and revitalization must be initiated. The new and upgraded facilities and equipment will play a key role in attracting and maintaining a world-class technical workforce and equipping them to effectively accomplish the Laboratory's missions.

A brief description of the missions, key programs, and the major facilities and infrastructure needed to support them are presented in this chapter.

3-1 Missions and Programs

INL programs support the four missions: (1) advanced nuclear energy technologies, (2) national security technology, (3) advanced technology services and support, and (4) basic scientific research to support DOE missions. A brief discussion of potential future collaboration with the Idaho Completion Project (being conducted by the Office of Environmental Management) is also provided. The site cleanup mission will continue as a separate contract for the INL.

3-1.1 Advanced Nuclear Energy Technologies

The Advanced Nuclear Energy Technologies mission is comprised of the Generation IV Program and Advanced Fuel Cycle Research and Development. Information for this mission is included for planning purposes, pending a final DOE decision on how to proceed with the next generation reactor programs.

Idaho National Laboratory will provide leadership, technology, and engineering demonstration support for current operating reactors and advanced nuclear energy systems. Specific facility, laboratory, or equipment needs are included in the following brief descriptions of current and future Nuclear Energy programs.

Generation IV Program[a]

- **Generation IV Reactors.**

  INL will support evaluation of Generation IV reactor concepts and will carry out the development and demonstration of selected reactors. Systems analysis studies will aid in advanced reactor concept assessment and will be used to integrate the Generation IV and Advanced Fuel Cycle programs.

  Generation IV Advanced Reactor Research and Development will be conducted to evaluate reactor core behavior, materials capabilities, and energy conversion and will support development and assessment of several advanced reactor design concepts. Laboratory facilities in the technology centers at Argonne National Laboratory-West, Test Reactor Area, and Idaho Falls, together with those at the Idaho Nuclear Technology and Engineering Center, and a new Consolidated Laboratory Facility will be needed to support the necessary research.

  Gas Cooled Reactor, Supercritical Water Reactor, and Liquid Metal Reactor fuel and materials testing will be needed to provide necessary information on the behavior of advanced fuels and materials at radiation levels expected in the advanced reactor systems. Post-irradiation examination for the fuel will require more detailed information starting in 2005, with additional capabilities and a much higher volume of examinations expected by about 2010. Irradiation testing will be performed in specially designed Advanced Test Reactor loops with initial post-irradiation examination conducted in existing hot cells. Later testing will require a new hot cell at the Advanced Test Reactor.

- **Demonstrate high temperature reactor capabilities.**

  The design, construction, and licensing of a Next Generation Nuclear Plant on the INL site will demonstrate high-temperature gas-cooled advanced reactor capabilities for electricity production and hydrogen generation. The scope of the program includes the development and qualification of the advanced fuel form and the manufacture of the first core load of fuel for the pilot plant. Fuel and materials testing in a high-temperature gas environment will be required. The Next Generation Nuclear Plant will need facilities for support staff and equipment, as well as the supporting infrastructure (such as roads, electrical power, and water). The Next Generation Nuclear Plant is needed by 2016.

- **Develop and demonstrate hydrogen production capabilities.**

  Non-nuclear hydrogen research and development will develop the chemical processes for hydrogen production and verify the feasibility of these processes at realistic process conditions and at sizes that will provide an engineering scale demonstration. Laboratory space and the supporting infrastructure will be needed to conduct these small- to pilot-scale system tests. Laboratory and pilot plant space will be included in the Hydrogen Technology Development Facility, which is needed for hydrogen testing with a nuclear heat source. This capability is needed by 2008.

  The economic viability of nuclear energy as a primary source for emissions free hydrogen must be determined. Engineering scale testing will be conducted using 50 MWth of Next Generation Nuclear Plant-generated heat to

a. The Generation IV International Forum is a multi-nation group working together with the DOE to identify next generation reactor systems for producing new sources of power.

produce hydrogen. The facility will be located adjacent to the Next Generation Nuclear Plant. The Hydrogen Technology Development Facility will be designed to initially house the non-nuclear pilot plant hydrogen production systems. The nuclear engineering scale capabilities are needed by 2015.

- **Development, testing, and design for a new research reactor.**

  Developing an advanced fast reactor that will destroy long lived fission products or that will be viable for space applications will require extensive studies, fuels and materials irradiation testing, and design work. Initially, fuel and materials testing objectives can be met using reactor systems that can be modified to provide limited fast neutron fluxes. Later in the development program, much larger sample volumes will require testing with a fast neutron fluence that cannot be supplied by existing reactors. System level information will also be needed to aid in design of the advanced reactor core. Initial, lower volume testing will begin in 2006 in the Advanced Test Reactor with higher volume testing and systems performance testing needed by 2012 in a new research reactor.

- **Develop an Advanced Nuclear Simulation Facility for the design and evaluation of advanced nuclear power control concepts.**

  An Advanced Nuclear Simulation Facility will support development of Generation IV reactors, other programs and sponsors such as the Nuclear Regulatory Commission. Simulation will be used along with embedded physical systems to design and evaluate advanced concepts. The overarching objective is research in nuclear power to support advanced system licensing, reliability, and optimization. Development of this facility will be incremental, with near term research occurring within the Engineering Research Office Building and North Boulevard Annex facilities in 2005 and migration to a new dedicated facility with a target date completion date of 2007. The dedicated facility could be combined with an advanced computing facility.

Figure 3-1 shows the new and existing mission essential facilities and infrastructure for the Generation IV Program, and how these facilities and infrastructure are linked to, and support, this program.

Advanced Fuel Cycle Research and Development

- **Advanced Fuel Cycle Fuel Development.**

  Testing will be conducted in the Advanced Test Reactor to aid in developing proliferation resistant fuels for use in advanced fuel cycles for current light water reactors and for the next generation of nuclear power and transmutation systems. Irradiation studies will be carried out on fuel pellets and test bundles. Upgrades to the Advanced Test Reactor irradiation test vehicle will be required.

- **Advanced Fuel Cycle Spent Fuel Treatment Activities.**

  Fuel treatment research and development activities will be performed for processes that will treat light water reactor spent fuel. Both aqueous and pyrochemical processes will be evaluated. Other advanced processes may also be developed if initial screening shows “value added” results.

  Bench scale chemistry and flow sheet verification tests and small scale integrated process tests will be performed for spent fuel treatment processes. Engineering-scale demonstration testing will also be conducted for the most promising processes. These tests will assess partitioning and solidification of selected radionuclides in the spent light water reactor fuel. Both new and existing facilities at the INL will be needed. Research and development on aqueous partitioning with radioactive materials will be conducted in the Remote Analytical Laboratories (located at the Idaho Nuclear Technology and Engineering Center) to aid in designing an engineering scale system.

  Facilities with the capability for fuel handling and remote operations will also be needed. The following INL facilities are currently being evaluated to determine their ability to meet these needs: the Fluroinel Dissolution Process and Fuel Storage (FAST) Facility and

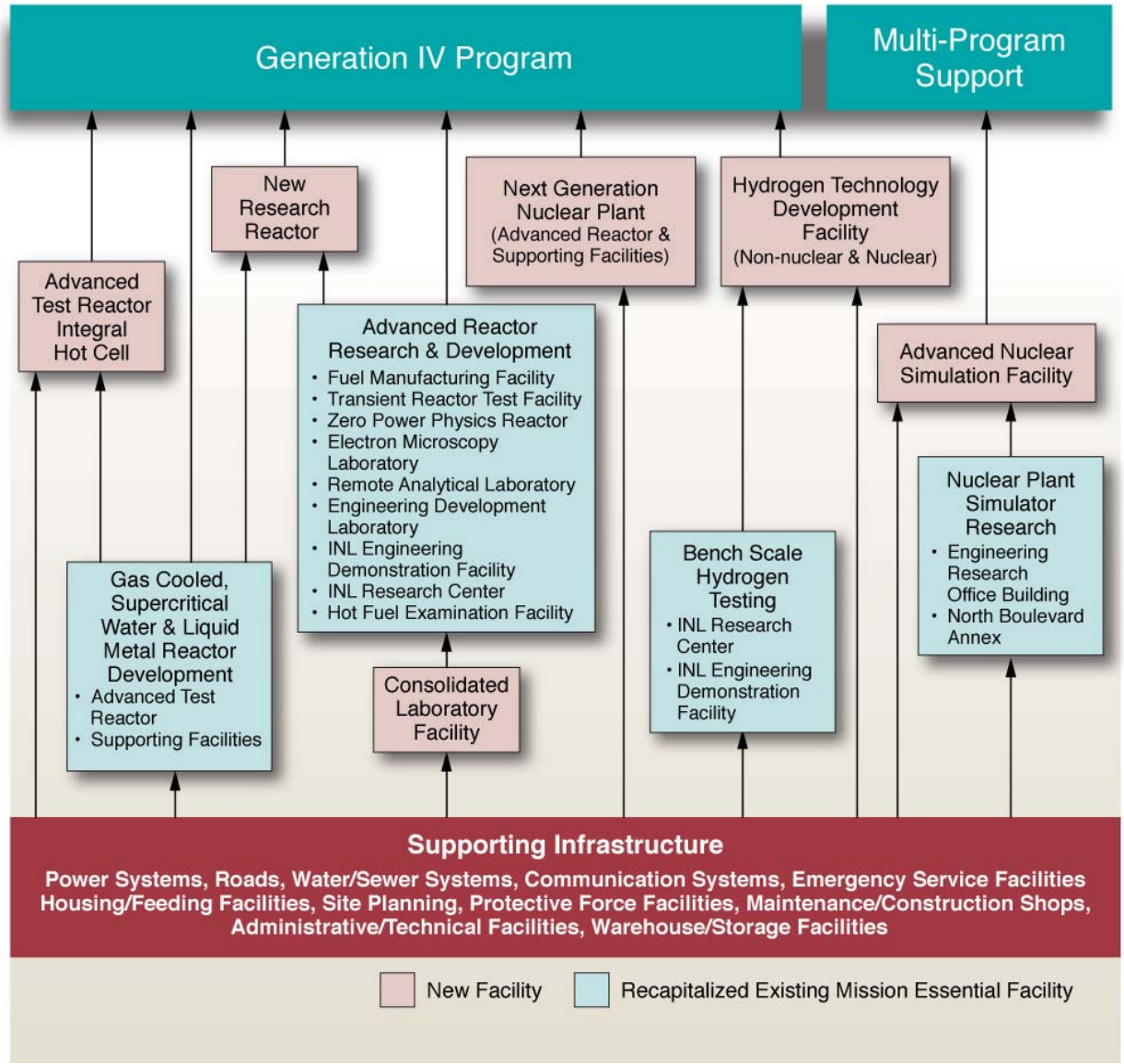


Figure 3-1. Program facilities and linkages for Generation IV.

the Fuel Processing Facility (FPF). If they are determined to be adequate, then facilities could become mission essential.

The pyrochemical process will be demonstrated in the Fuel Conditioning Facility and Hot Fuel Examination Facility and supported by the Analytical Chemistry Laboratory (at Argonne National Laboratory–West).

Both the aqueous demonstration and the pyrochemical process work will be needed in 2007.

- **AFC Fuel Processing Research and Development.**

  Advanced fuel cycle fuel development and fabrication will be conducted at the Fuel Manufacturing Facility. These advanced fuels, which are designed to burn long lived fission products, will be tested in the Advanced Test Reactor and other reactors. Post-irradiation examination will be performed at the Fuel Conditioning Facility or the Hot Fuel Examination Facility.

Advanced fuel cycle spent fuel treatment technologies are being developed and tested with combined aqueous and pyroprocessing. Demonstrations of these technologies will make use of the Fuel Conditioning Facility and Hot Fuel Examination Facility, Analytical Chemistry Laboratory, Remote Analytical Laboratory, and Fuel Processing Facility. These facilities are considered to be adequate with minor upgrading.

Figure 3-2 shows the new and existing mission essential facilities and infrastructure for the Advanced Fuel Cycle Program, and how these facilities and infrastructure are linked to, and support, this program.

3-1.2 Center for National Security Technology

National Security missions will develop and test technologies to improve the nation's security in the face of terrorist and national threats. These missions are sponsored by the Department of Defense, the Department of Homeland Security, the Intelligence Community and the Department of Energy. Multiple INL programs (such as national security research and development, counter-intelligence, safeguards and security, emergency response, and nuclear incident response team assets) require secure office, laboratory, high bay, classroom, conference, and storage space at classification levels ranging from Unclassified to Top Secret Sensitive Compartmented Information.

- **Multi-Program Secure Facility.**

  A new multi-program secure facility is essential to successfully and efficiently carry out national security missions at the INL. This facility is needed in 2008. Additional, program specific facility and infrastructure requirements are included in the following

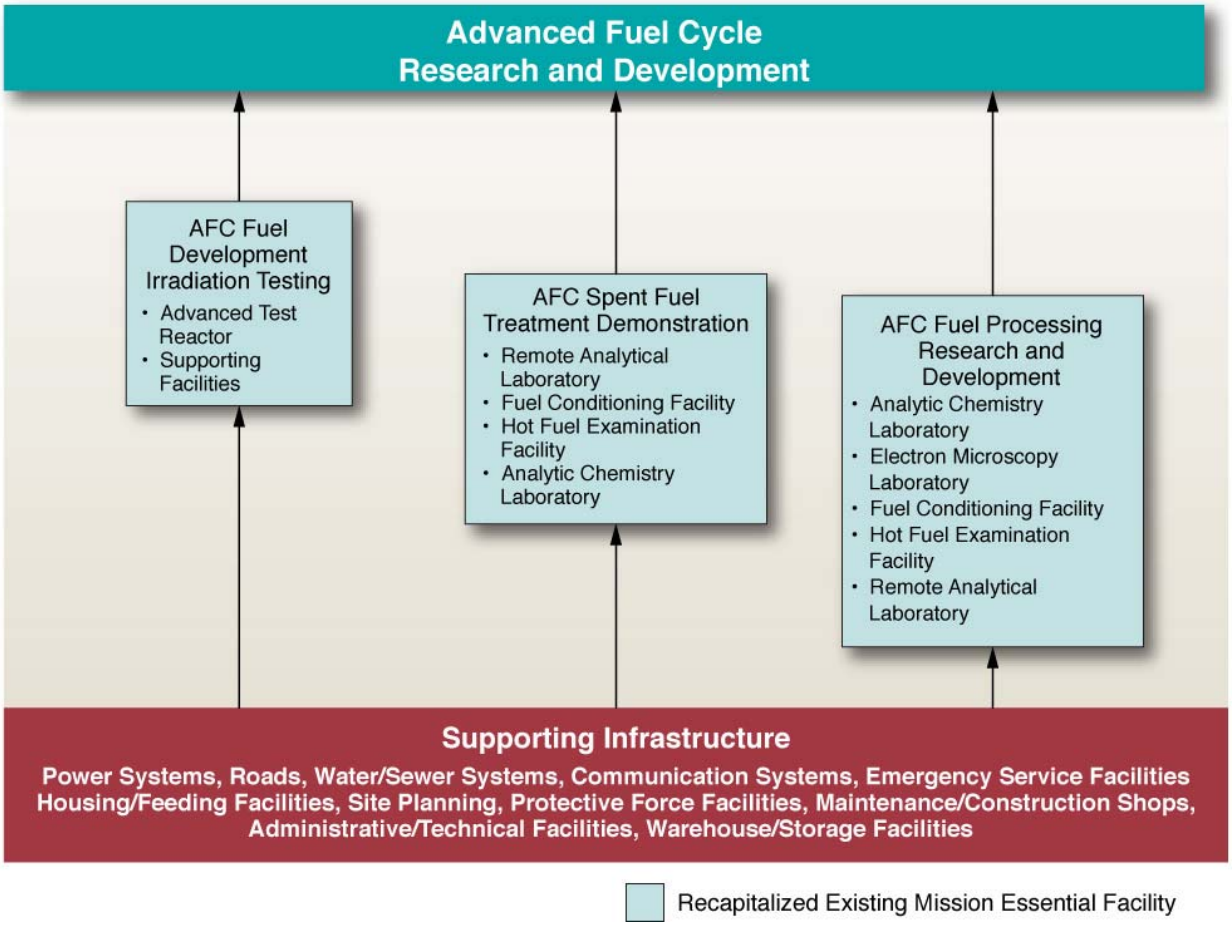


Figure 3-2. Key program facilities and linkages for Advanced Fuel Cycle.

brief descriptions of INL national security programs.

- **Implement elements of the Critical Infrastructure Assurance Program.**

  Elements of the Critical Infrastructure Assurance Program will be used to develop tools and methodologies for assessing the vulnerabilities of United States critical infrastructures and for prioritizing needs and investments required to protect those infrastructures using risk-based programs. The program will utilize the full infrastructure and capabilities of the Site to model, test, and develop technology to harden United States critical infrastructure, with special emphasis on energy, communications, transportation, cyber security, and physical security elements. The focal point of operations at the site will be at the Critical Infrastructure Test Range Complex, currently a part of the Power Burst Facility/Waste Reduction Operations Complex. This test range is needed in 2004. Existing facilities will be upgraded to provide many of the needed capabilities.

  The National Supervisory Control and Data Acquisition Test Bed Program will identify system vulnerabilities, improve the security and robustness of existing systems, and design secure and reliable future systems. Supervisory Control and Data Acquisition systems are vital to national security as they control a variety of essential activities, e.g., electric power distribution, sewage treatment, and many industrial manufacturing activities.

  The Wireless/Communications Test Bed Program will expand the capability for testing wireless systems including wireless data gathering and extended interconnectivity. Robust wireless systems are necessary for effective emergency communications and interoperability between federal, state, and local authorities during crisis situations.

  The Cyber Security Test Bed Program will identify vulnerabilities of computer-based systems to attacks of all types. For example, computer information security is essential for banking and finance and uninterrupted operations are needed for essential services such as air traffic control.

  The Physical Security Test Bed Program will identify vulnerabilities of physical security systems. Continued protection from intruders will become increasingly important as physical threats become better coordinated and more sophisticated.

  The Infrastructure Consequence Control Program will identify actions communities must take to protect critical infrastructure and mitigate the effects of contamination from intentional or unintentional nuclear, chemical, or biological releases.

- **Provide technologies and technical support to further U.S. Nonproliferation/ Counterproliferation objectives.**

  Innovative Counterterrorism Technologies will leverage existing capabilities to conceptualize, design, develop, and test new counterterrorism technologies. The Laboratory needs test range facilities for proof of principle and verification/validation testing.

  Proliferation of Weapons of Mass Destruction, production materials, and technologies will be reduced through development of non- and counter-proliferation technologies. A Level 3 Biological Science Laboratory is needed in 2006 to examine and develop needed technologies.

  Materials Detection and Response Technologies will develop and field counter-proliferation technologies and innovative sensors for advanced detection techniques. Test Range facilities are needed to support demonstration of portal monitoring technologies at seaports, airports, and border crossings. Full scale testing will include such activities as breaching, explosions, and spills. Existing facilities can be upgraded to provide needed capabilities by 2004.

  The national security program will support national and international nonproliferation and environmental security for the advanced fuel cycle, nuclear materials production and control, international safeguards and security, and transportation and management of spent

nuclear fuel. Test Range facilities need to accommodate live-fire testing of breaching techniques against shipping containers.

Nuclear Materials Detection will provide full scale testing capabilities for detection of nuclear materials using high-energy accelerator technologies. Testing to detect highly enriched uranium for cargo containers requires large-scale test facilities on the INL Test Range. Existing facilities can be upgraded to provide needed capabilities by 2004.

- **Develop and demonstrate Combat Support Systems/Technologies.**

  Defense Systems and Engineered Systems development will continue to provide the military services with command, control, and communications and mission planning tools. Many INL-developed systems have been deployed in theater operations including Iraq and Afghanistan. Chemical warfare agent detection and assessment systems developed by the INL are routinely deployed domestically and internationally by the U.S. Army to characterize suspect chemical warfare agents. Additional secure office space, laboratories, and prototype demonstration facilities are needed by 2008.

- **Support the needs and requirements of the Intelligence Community.**

  Classified work supporting the Intelligence Community has been increasing at roughly 30% per year and this rate is expected to continue over the next five years. Additional classified office, conference, and laboratory space is needed by 2006.

Figure 3-3 shows the new and existing mission essential facilities and infrastructure for the national security programs, and how these facilities and infrastructure are linked to, and support, these programs.

3-1.3 Provide Advanced Technology Services and Support

INL will continue to provide advanced technology services and support to U.S. Government customers. Sponsors of the following programs include the Department of Defense, National Nuclear Security Administration, and National Aeronautic and Space Administration.

- **Support the Naval Nuclear Propulsion Program.**

  The INL will continue to support the Naval Nuclear Propulsion Program needs for irradiation of fuels and materials in the Advanced Test Reactor. Greater utilization of the capabilities of the Advanced Test Reactor will require a commensurate investment in the supporting infrastructure.

- **Support space nuclear development of an advanced Radioisotope Power System and production of Pu-238.**

  Advanced Radioisotope Power System Development will provide advanced power systems for civilian and defense or national security use. Assembly of current Radioisotope Power System/Heat Source system designs will continue in the short term, but will be phased out as advanced radioisotope power systems are designed and assembled. The Radioisotope Power System/Heat Source assembly and test operations will reside in the Zero Power Physics Reactor complex. Upgrades are needed by 2004–2005.

  Pu-238 production in the Advanced Test Reactor will supply this heat-generating radioisotope for use in the ceramic assemblies for the Radioisotope Power System/Heat Source and the newly developed Radioisotope Power System. This mission was identified in the Environmental Impact Statement issued in December 2000 and the subsequent Record of Decision in January 2001. Production needs to begin by 2006.

- **Support nuclear space initiative.**

  Ground Test Facilities for the space nuclear power and propulsion programs will provide the capability to perform nuclear system operational tests on the next generation of space nuclear power and propulsion systems.

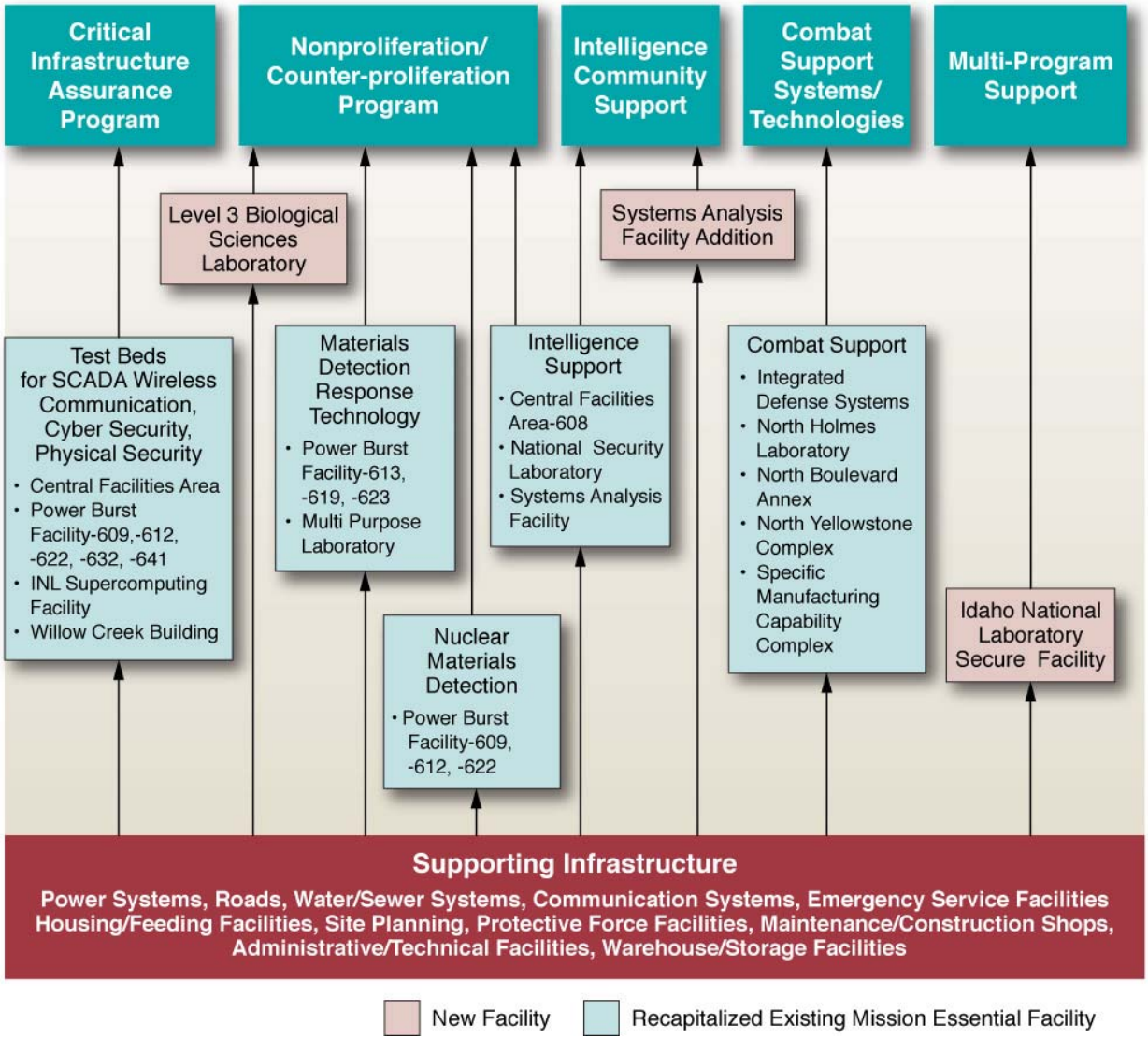


Figure 3-3. Key program facilities and linkages for Center for National Security Technology.

The facility will have the capability to simulate near-vacuum conditions with a cold wall. Hot cell capability will be needed to disassemble the space nuclear reactor system and remove its fuel for detailed examination. Destructive and nondestructive fuel examination capabilities are also necessary. Facilities are estimated to be needed by 2006. The final schedule depends on National Aeronautics and Space Administration mission timing, which is currently being finalized.

- **Support Specific Manufacturing Capability.**

  Development of advanced military armor and production of depleted uranium armor for the U. S. Army Abrams tank will continue at the Specific Manufacturing Capability Program. Research and development on lightweight armor and associated capabilities will be applied to protect personnel, equipment, and nuclear materials during transport. Capabilities and expertise will be integrated into Future Combat Systems platforms. Existing facilities and infrastructure are adequate.

- **Test Reactor Area Administration Building.**

  A new building to consolidate administration and engineering functions is needed at the Test Reactor Area to support the Advanced Test Reactor activities for all programs. The new facility is needed in 2006.

Figure 3-4 shows the new and existing mission essential facilities and infrastructure for the advanced technology services programs, and how these facilities and infrastructure are linked to, and support, these programs.

3-1.4 Conduct Basic Science Research in Support of Key DOE Missions

INL teams strongly support a wide range of research, development and applied engineering programs. Sponsors are primarily in the DOE (e.g., the Office of Science, Office of Fossil Energy, Office of Civilian Radioactive Waste Management), but also include other government agencies, such as the Nuclear Regulatory Commission. INL programs will require additional office, laboratory, prototype demonstration, video teleconferencing, secure space, and conference space to successfully achieve technology breakthroughs for current and new programs.

- **Consolidated Laboratory Facility.**

  A new multi-program Consolidated Laboratory Facility (CLF), located in Idaho Falls, will be required by 2006 to satisfy many of the individual programmatic needs identified in this section. Additional specific facility, laboratory, or equipment needs are included, where required, in the following brief descriptions for current and future programs.

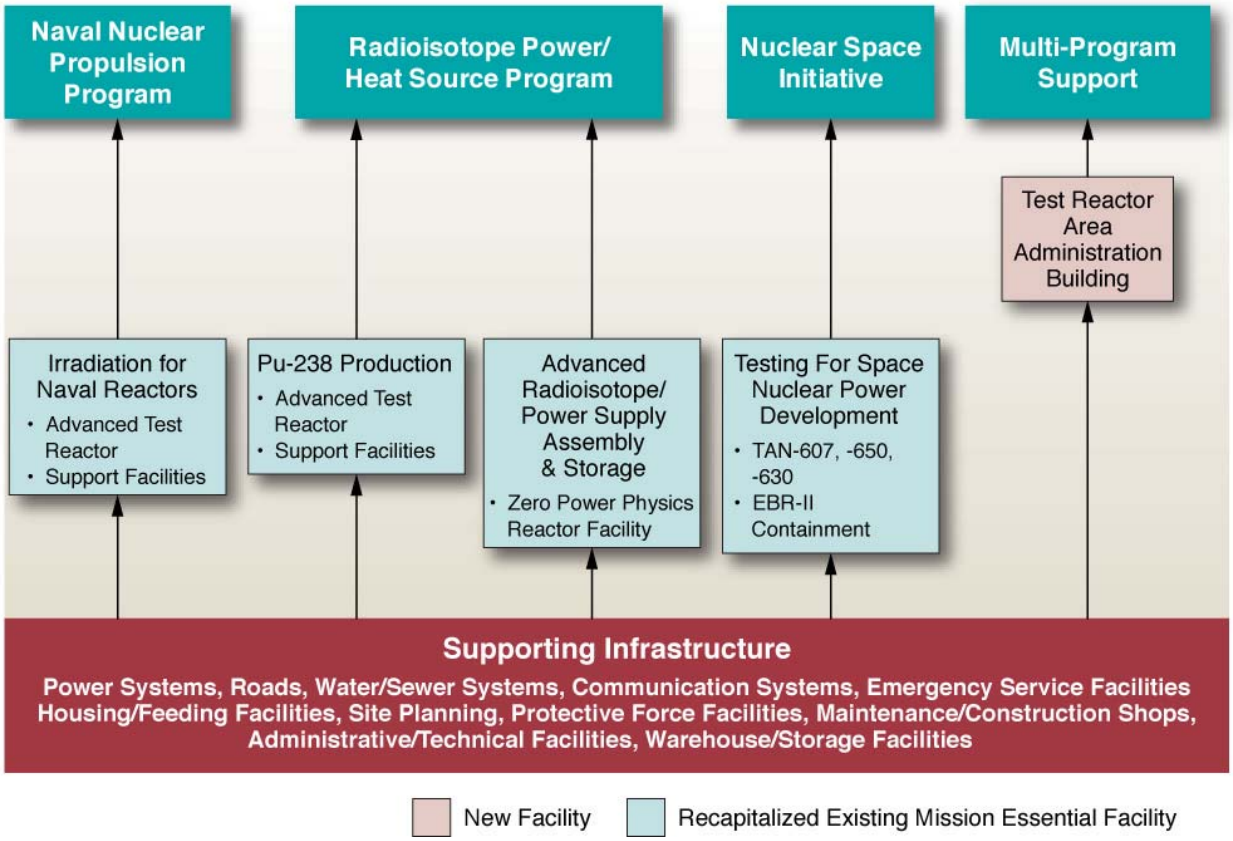


Figure 3-4. Key program facilities and linkages for Advanced Technology Services and Support.

- **Advanced subsurface science research and development.**

  Subsurface science research and development is needed in most of DOE's mission areas as well as those of the Department of Defense, Environmental Protection Agency and other agencies. Developing a better understanding of the Earth's subsurface and how to model and manipulate it will enable new technology for cleanup, closure and monitoring of DOE's contaminated sites; help ensure clean water from uncontaminated aquifers; contribute to DOE's energy mission by finding better ways to explore for and develop energy reserves; lead to viable methods of carbon sequestration; contribute to DOE's national security mission by developing new technologies for dealing with deliberate chemical, biological or radioactive soil or water contamination; and enable technology for safely storing society's wastes in the subsurface. Facilities for performing experiments at the laboratory scale, mesoscale and field scale are needed and are being proposed to enable new approaches to difficult subsurface problems. A funding source has yet to be determined. Current plans call for this facility to be completed in 2010.

- **Basic Research and Development.**

  Basic Energy Research will include fossil, geothermal, hydrogen systems and advanced batteries. A laboratory for high temperature aggressive environments will be required, including analytical facilities and mechanical property testing. Geothermal energy research will require state-of-the-art fracture and characterization capability. Additional wet chemistry laboratory capabilities with advanced measurement capabilities will be needed by 2005 (in addition to Consolidated Laboratory Facility space).

  Biotechnology Programs will serve unique needs in basic science, energy, and environment. Example research areas include extremophilic research for application to bioprocessing or biomimetics, genomics to measure pathogens in wildlife, and human antibody profiling. Improved laboratory space and advanced computing capabilities are critical to the success of these projects and are needed by 2006.

  Environmental Sciences Programs will continue to provide engineering development of imaging tools for waste characterization, and high-resolution spectroscopy methods for study of chemical contamination on mineral surfaces. Laboratory space and advanced instrumentation are required. A field site representative of arid conditions will be required at the INL to study complex contamination transport phenomena, and adequate laboratories to support the field site are needed by 2006.

  Physics Programs will cover a broad range of specific topics primarily for characterization of the properties of materials. Spectroscopy performed using accelerator techniques and high-energy x-ray sources for radiography are important assets. Accelerator capability will be required, both at the INL and the Accelerator Center at Idaho State University. Additional traditional laboratory facilities and x-ray generation sources are needed by 2008, as these programs mature.

  Fusion Safety Programs will center on major sources of radioactive hazards in deuterium-tritium fusion systems, how energy sources can mobilize radioactive materials, and the safety and environmental concerns associated with emerging design concepts. The existing Safety and Tritium Applied Research facility will be used extensively. Facilities, including chemistry and materials science laboratories for corrosion testing, must be maintained at state of the art levels.

- **Support for Yucca Mountain Facility Designs.**

  The INL will support development of Yucca Mountain facility designs for the handling, packaging and closure of the waste package. This work will require a large facility that can handle full-scale waste packages and perform welding and nondestructive examinations. The INL will also provide mockup capabilities of other components within the Yucca Mountain facility design. Existing facilities are adequate.

- **Intelligent Systems Initiative.**

  The Intelligent Systems Initiative will seek to extend and augment human systems and remotely operated and autonomous system performance in complex operational settings by developing and integrating new technologies. Additional robotics laboratory space is needed in 2006 to 2008 to support these projects.

- **Fossil Energy, Energy Efficiency and Renewable Energy.**

  Hydrogen Production, Transportation, Storage, and Utilization Research and Development will develop technologies, processes and integrated systems for production, conversion, transportation, storage, and utilization technologies. Additional laboratory and prototype demonstration facilities capable of safely handling hydrogen will be needed by 2008.

  Advanced Energy Storage/FreedomCAR Research and Development will continue to develop, characterize, test, and evaluate high-power energy storage devices and supporting testing and evaluation protocols for electric vehicle and hybrid electric vehicle applications. Additional laboratory space (approximately 2,000 square feet) at the Energy Storage Laboratory will be needed by 2005.

  Clean Coal/Fuel Processing and Energy Conversion Technologies Research and Development will develop and demonstrate coal and other energy conversion processes at realistic conditions and scales ranging up to pilot scale. This will require additional large-scale test facilities and infrastructure to be installed adjacent to a coal-fired steam generation plant at the INL. In addition, a thermodynamic and high-pressure analytical laboratory is needed to obtain thermodynamic data for natural gas and other fluids at cryogenic temperatures (>1,000 psi, <-100°F).

  Advanced Materials and Intelligent Systems in Support of Transportation Research and Development will support partnering with government, university, and industry to develop materials, processes, and technologies to reduce energy consumption and increase reliability and performance of transportation systems. Sections of dedicated test road are needed at the INL site in 2005 to support this work.

  Bioenergy Research and Development will continue to develop and demonstrate the necessary technologies for the feedstock infrastructure to supply necessary quantities of biomass at the price and quality targets set by the bioenergy industry. This work ranges from computation and small laboratory scale to large-scale prototype testing that requires high bays and mobile labs to support prototype field tests. Additional high bay space and analytical fluid dynamic laboratory space will be needed in 2006.

  Geothermal Energy and Hydropower Research and Development will continue to enhance domestic energy security by developing technologies for identifying new resources, increasing energy conversion efficiency, mitigating environmental effects, and reducing costs. Modest increases of in-town laboratory and storage space are needed in 2005.

  Industrial Technologies Research and Development will continue developing advanced fabrication, manufacturing, and processing technologies to provide greater energy efficiency, reliability, and productivity. Work ranges from bench-top feasibility studies to design and testing of full scale, turnkey prototype systems. Additional high bay space, located in a single facility, that will support growth of an integrated program is needed in 2008.

  Sustainable Building Technologies Research and Development will continue to perform full-scale structural and durability testing of industrialized housing and commercial buildings, and will be expanded to evaluate building components and technologies for durability and life cycle environmental impacts. Additional general-purpose laboratory space is required in 2008.

  Carbon Capture and Sequestration Research and Development will be conducted to help

achieve the U.S. national goal of reducing the green house gas emissions. Research activities in this area will focus on geologic sequestration of CO_2 in coal seams, depleted oil and gas reservoirs, and deep saline aquifers. Additional laboratory space is required in 2006.

- **Radiological and Environmental Science Laboratory.**

  A new Radiological and Environmental Science Laboratory is needed in 2009 to provide analytic chemistry and radiation measurements and calibrations. This laboratory is a multi-program facility. It will provide measurement and quality assurance functions for DOE and the Nuclear Regulatory Commission.

Figure 3-5 shows the new and existing mission essential facilities and infrastructure for the basic scientific research programs, and how these facilities and infrastructure are linked to, and support, these programs.

3-1.5 Environmental Management Support and Footprint Reduction

The INL has a long-standing and highly successful partnership with Environmental Management programs in Idaho (to be contracted as the Idaho Completion Project). The laboratory

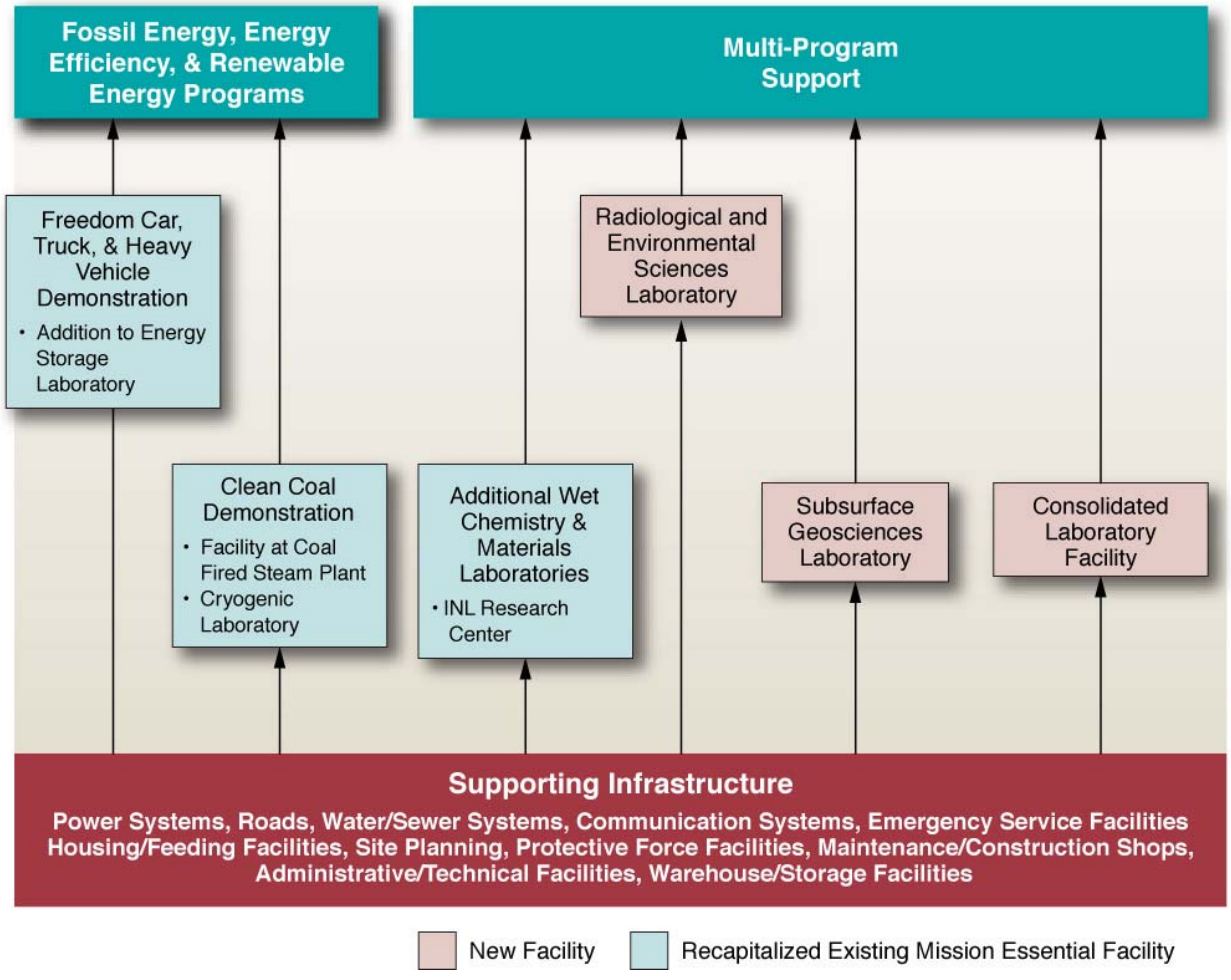


Figure 3-5. Key program facilities and linkages for Basic Science Research in support of key DOE missions.

provides extensive capabilities and expertise for resolving scientific, engineering, and technology issues throughout the site. It is anticipated that INL will continue to provide direct technical and infrastructure support to the Idaho Completion Project. This approach will maintain key science and engineering core capabilities important to the site as long as they are needed and supported.

The Office of Environmental Management has the lead for footprint reduction at the site. NE's recapitalization program conducts footprint reduction for NE-owned facilities that do not have a future mission.

3-2 Future Role of Technology

Rapid changes in communication and computing technology combined with technical advances in many other areas will fuel future innovation. Upgrades using emerging technologies, processes, and business practices will be needed to enhance the Laboratory's future capabilities. Key technology areas that are expected to affect INL facilities and infrastructure in the future are:

- **Electronic Connectivity.**

  DOE's scientific programs are frequently carried out by collaborative teams of researchers located at multiple national laboratories, universities, and international research institutes. During the next several years, significant investment will be required in high-speed communication systems and equipment for the INL to effectively participate in this collaborative process and execute its missions. These high-speed systems must allow rapid transmission of data to enable the Laboratory's simulation and modeling capability, support acquisition of large volumes of data from experimental runs, and rapidly share needed information among researchers. Improved networking will be required within individual facilities/buildings to support local collaboration and to link researchers into the robust communication systems. To be most effective, upgrades should be completed in 2008.

- **Secure Information Transfer Systems.**

  Secure networks are important communication tools for DOE, the Department of Defense, and Department of Homeland Security customers. Enhanced capability for secure messaging (such as email, instant messaging, and electronic meeting spaces), data exchange, and video teleconferencing will be required as the INL National Security Programs develop and mature. Equipment and communication linkages will be expanded to allow secure network communication with the sponsors of national security programs.

- **High Performance Computing.**

  High-performance computing has revolutionized the process of scientific inquiry by allowing models of complex processes to be examined in greater detail and to be compared with experimental data much more rapidly and thoroughly than in the past. Advanced computing is an integral component of all major science and engineering research programs conducted by DOE. The Laboratory will need advanced high performance computing, storage, networking, visualization and collaboration capabilities to enable and enhance the scientific, research, and engineering agenda of the INL and Idaho Completion Project. A new facility will be necessary to house the increased capabilities and to support personnel performing and interpreting future advanced computations. This facility will be needed by 2008.

- **Wireless Technology.**

  Within the next decade, much of the equipment used in communication of information is expected to be wireless. Embedded computers and visualization capabilities will expand the versatility, complexity, and use of these systems. Applications will likely include both security and service uses, for example, remote security alarm systems and communication of information from remote well sampling. The INL must keep pace with the efficiencies afforded through wireless technologies while at the same time understanding and mitigating security implications.

- **Laboratory Equipment.**

  Significant advances have been made in developing new measurement and diagnostic

devices that increase the capability to rapidly understand complex experimental results. To provide advanced solutions to complex problems, outdated laboratory equipment will be upgraded. This is particularly true of equipment being used for basic scientific research. To be most effective, initial equipment upgrades should be available in 2005.

Addressing these technology issues based on the schedule outlined in Appendix A will allow the INL to work in a cost effective and collaborative manner to execute the programs associated with the newly assigned mission.

Figure 3-6 shows the new and existing mission essential facilities and infrastructure for the future technologies needed at the INL, and how these facilities and infrastructure are linked to, and support, these technologies.

3-3 Facilities and Infrastructure/ Linkages and Infrastructure Needs

The strategic planning process for INL is described in Chapter 4. To encourage efficient operation, the INL will concentrate activities in Technology Centers, which will group facilities with offices, laboratories, and conference space in relatively close proximity. One Technology Center is envisioned for Idaho Falls and two Technology Centers will be located at the Site.

Implementing Technology Centers will consolidate facilities and infrastructure, which will reduce both infrastructure costs and the INL footprint. In addition, next-generation scientists and engineers are expected to be drawn to the INL by the Technology Center collaborative atmosphere.

Additional details on mission-essential facilities are provided in Appendix A. Ensuring the availability of mission-essential facilities is vital to the success of INL programs.

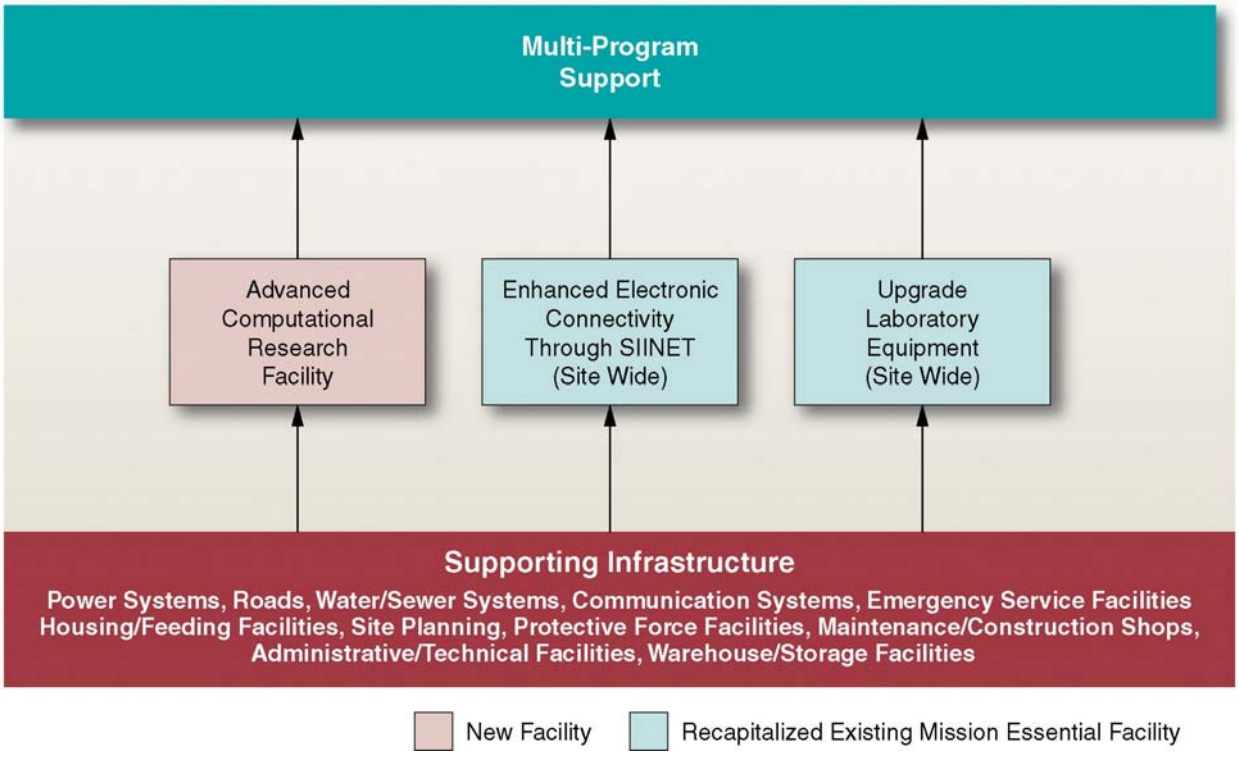
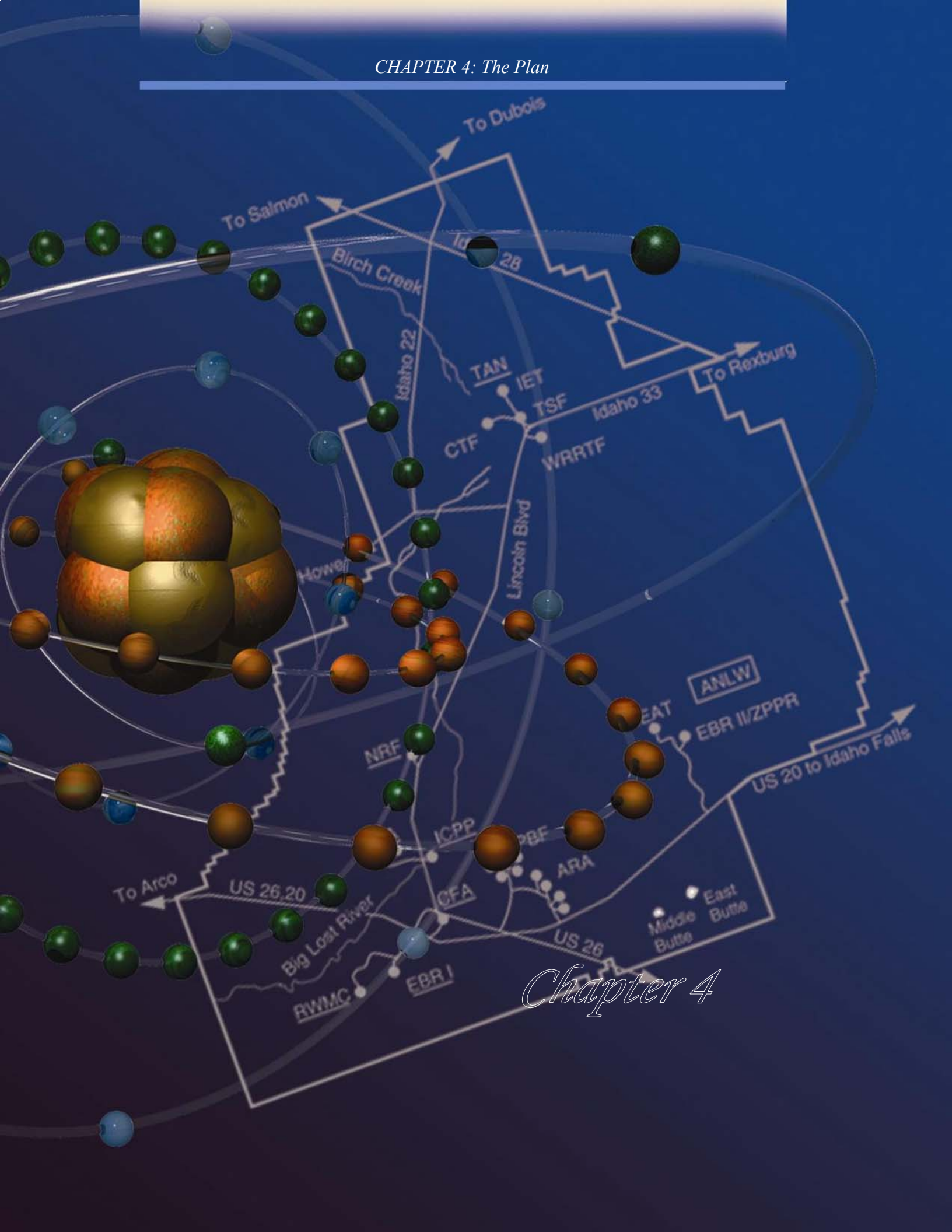


Figure 3-6. Key program facilities and linkages for laboratory technology enhancements.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Idaho 33
To Rexburg
CTF
WRRTF
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EBR II/ZPPR
NRF
US 20 to Idaho Falls
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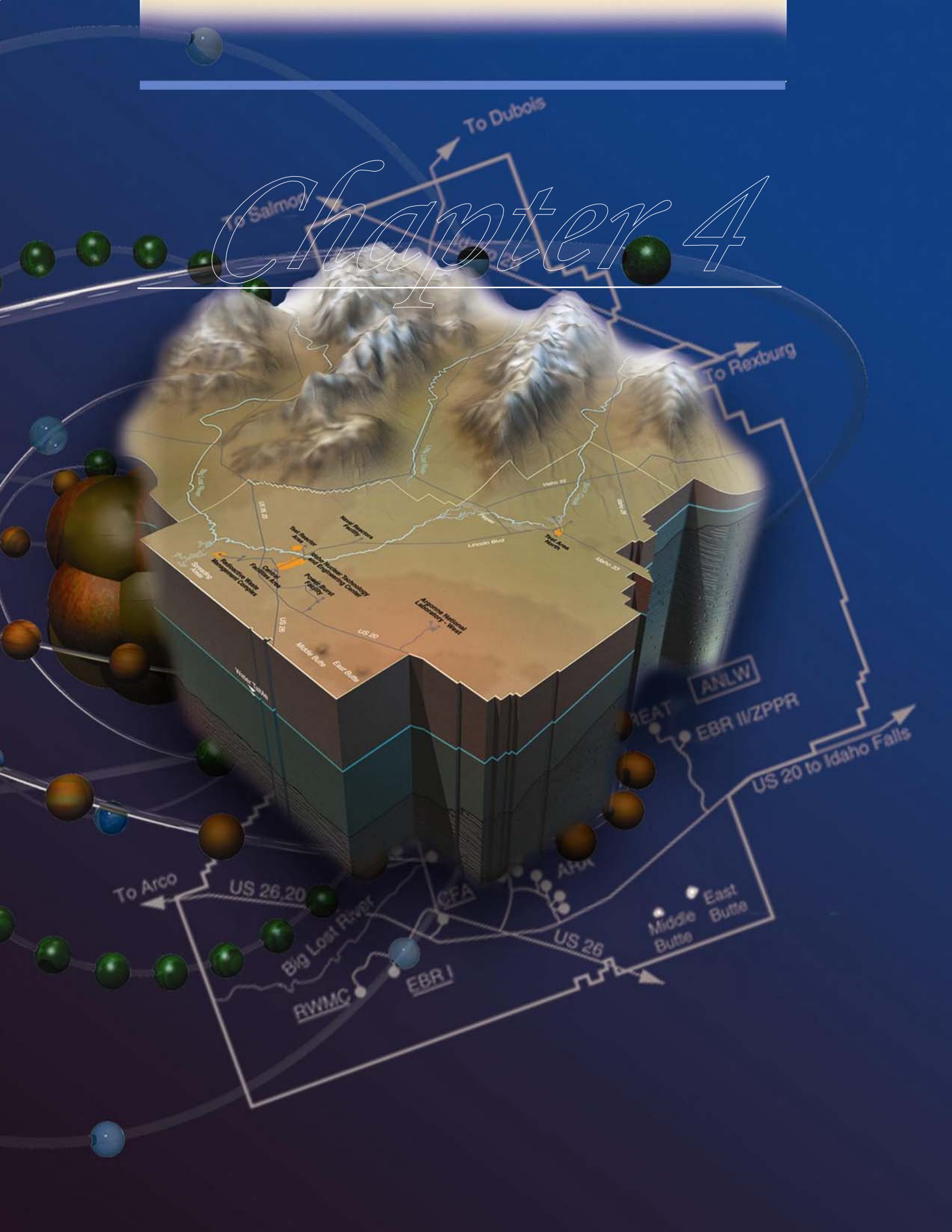
Chapter 4

Chapter 4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ANLW
US 20 to Idaho Falls
Test Reactor Area
Materials & Fuels Complex
Advanced Test Reactor
Idaho Nuclear Technology and Engineering Center
Power Burst Facility
Radioactive Waste Management Complex
Central Facilities Area
Test Area North
Lincoln Blvd
Idaho 22
Argonne National Laboratory - West
Middle Butte
East Butte
Water Cistern

The Plan

The *Ten Year Comprehensive Site Plan* identifies and prioritizes the projects, activities, and mission resource requirements for real property assets that cover a ten-year planning horizon based on program direction and guidance. This plan reports the projected future outcomes for acquisition, maintenance, recapitalization, and disposal.

Recently, there has been an inadequate level of funding for infrastructure maintenance and recapitalization. Facilities have subsequently deteriorated resulting in increased frequency of breakdowns due to aging systems and equipment. As a result, there is a substantial backlog of recapitalization projects and equipment needs. Significant over target capital expenditures will be required to meet mission needs. Appendix B summarizes the current condition and planned life-cycle needs for each Idaho National Laboratory (INL) building from 2004 through 2013.

In addition, new facilities are needed to perform new nuclear energy missions. The revitalization profile includes major new test facilities and their necessary support infrastructure enhancements.

4-1 Planning Process

The Department of Energy issues the *DOE Strategic Plan* to delineate and implement the President's energy policy. The Department also develops and issues *Mission Strategic Plans, Research and Development Portfolios* and *Program Roadmaps* to both define the Department's goals and provide detailed long- and short-term mission implementation plans and laboratory guidance. In turn, the Idaho Operations Office (NE-ID) issues the *NE-ID Strategic Plan.* This document defines the NE-ID plans and expectations for the operation of the INL. Based upon this guidance, and upon the Laboratory's long-term vision for the future, senior management then creates the *Institutional Plan* to lay out long- and intermediate-range goals and plans for mission direction and laboratory development.

Within the bounds delineated by the *Institutional Plan*, and supporting the research needs of the Department and other customers, the Laboratory's various programs and functional areas prepare their strategic and operational plans. The *Comprehensive Facility and Land-Use Plan* fulfills this need for infrastructure and land-use issues by providing overall guidelines for Laboratory infrastructure development.

The specific infrastructure impacts and requirements of the programmatic and functional area plans are evaluated and plans are developed to provide the research and support infrastructure required. Individual construction and capital equipment acquisition plans are prioritized and compiled in the *Site Integrated Infrastructure Ten-Year Acquisition and Recapitalization Projects Plan* and the *Capital Equipment Five-Year Acquisition Plan*.

The *Ten Year Comprehensive Site Plan* represents a new element in the Laboratory's infrastructure planning effort (see Figure 4-1). With the change in Laboratory mission and sponsorship has come a whole new set of infrastructure requirements. In order to succeed in its new endeavors, the Laboratory must evolve. The *Ten-Year Comprehensive Site Plan* documents the NE initiatives to restore, revitalize and enhance the Laboratory. As such, it details the composite strategy and plans necessary to provide the infrastructure required to implement the Laboratory's (NE) new missions. The plan also serves as a baseline definition of current infrastructure capabilities, and projects the condition and capability of the Laboratory ten years into the future. Chapter 5, Facilities and Infrastructure Projects, provides a complete overview of the recapitalization and revitalization projects forecast for Fiscal Years 2004-2013.

The final results of the planning process, as well as its reason for existence, are the detailed work plans. These plans, when agreed to by NE-ID, define the detailed scope, schedule, and cost of the work undertaken.

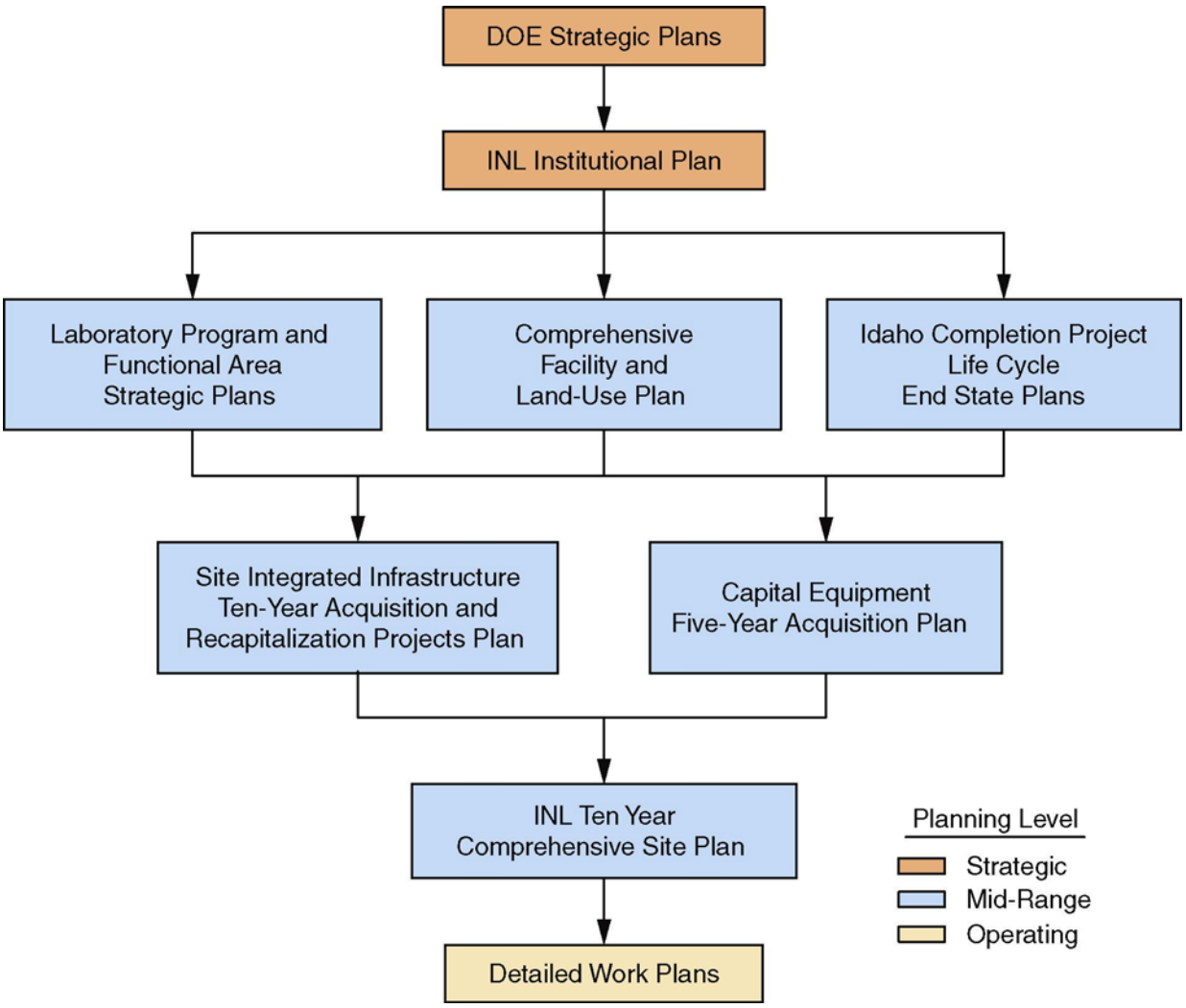


Figure 4-1. Planning Hierarchy.

Evaluation of management and operations contractor performance of the Laboratory's work scope is undertaken through performance measures. Performance measures are quantifiable outcomes or milestones agreed to in advance by the contractor and NE-ID. A performance measure includes both a definition of successful achievement and a time interval over which the measure must be achieved.

Under recapitalization funding, infrastructure performance measures will be:

- Completing construction projects on time and within schedule (within approved performance baseline)
- Stabilizing deferred maintenance backlog by 2007
- Reducing deferred maintenance backlog by 2013 to less than 5% of replacement plant value
- Achieving a condition assessment of "Good" for 80% of Laboratory buildings by 2013
- Managing to a 5% or less vacancy rate for occupied administrative facilities
- Managing to an appropriate vacancy rate for laboratory facilities.

4-1.1 Facilities and Infrastructure Overview

The primary emphasis prior to the July 2002 mission realignment announcement was providing infrastructure to facilitate environmental cleanup

and footprint reduction. Subsequent to the announcement, the infrastructure emphasis will be supporting the assigned nuclear energy mission. The fundamental change in the infrastructure scope of work is to focus investment dollars on mission-essential facilities and provide an infrastructure that accommodates Secretary Abraham's vision for the INL.

4-1.2 Condition Assessment

The Department of Energy uses the Facility Information Management System (FIMS) to define the condition of facilities. However, FIMS calculated conditions tend to be overly optimistic, primarily because the assessment is based solely on deferred maintenance. The deferred maintenance reporting methodology does not consider a number of factors that can impact a building's condition relative to its use in the DOE complex. These factors include:

- Suitability to support the current mission
- Expected new mission needs
- Code compliance
- Environmental, safety and health standard compliance
- Failure history and trends
- Facility age and remaining useful life
- Facility adaptability to new missions
- Facility unique or unusual capabilities.

The INL will continue to work with DOE-HQ to improve the FIMS condition calculation process. However, recognizing the limitations of the FIMS process, the Laboratory has augmented the condition assessment process to consider all of the identified factors to arrive at a more accurate indication of facility condition. Figure 4-2 illustrates the INL condition assessment process.

Current Condition of Existing Facilities

In general, the majority of INL buildings are in Good/Fair (adequate/minor rehabilitation required) condition (see Figure 4-3).

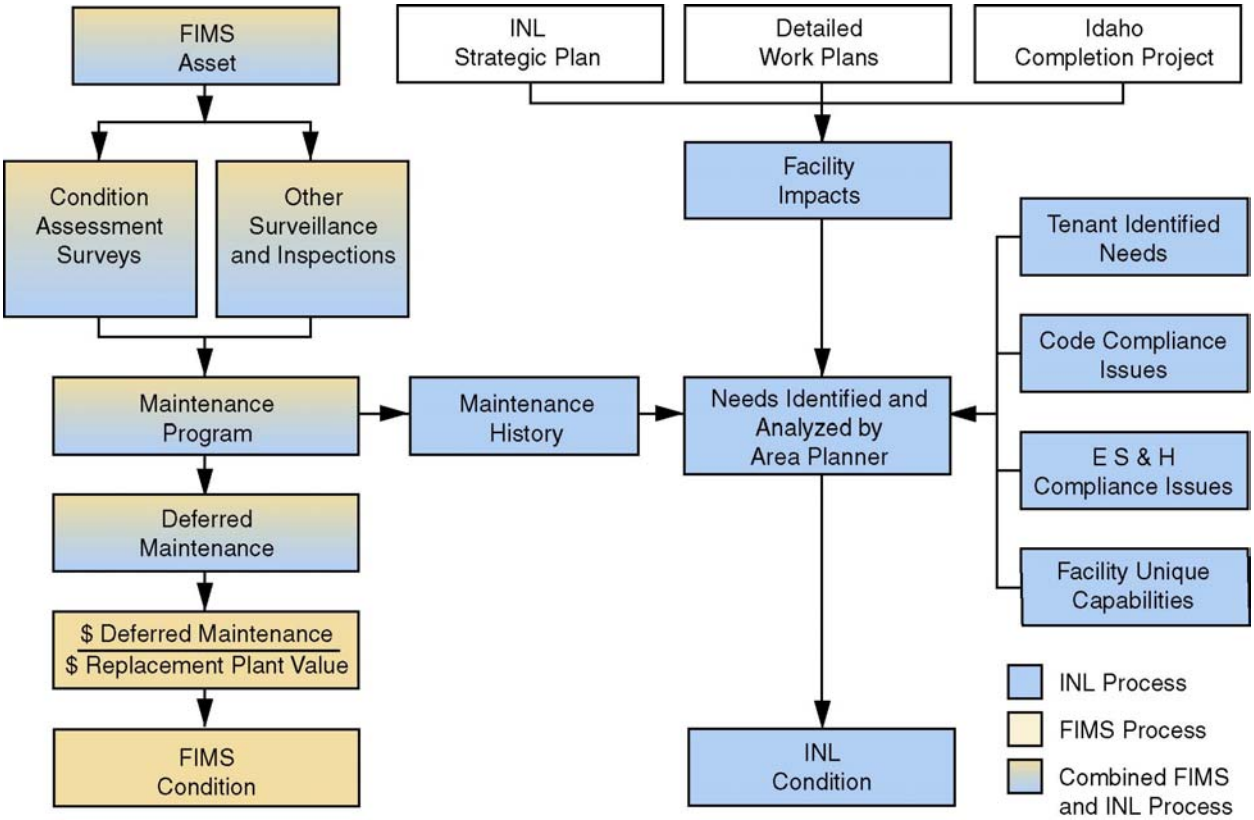


Figure 4-2. INL Condition Assessment Process.

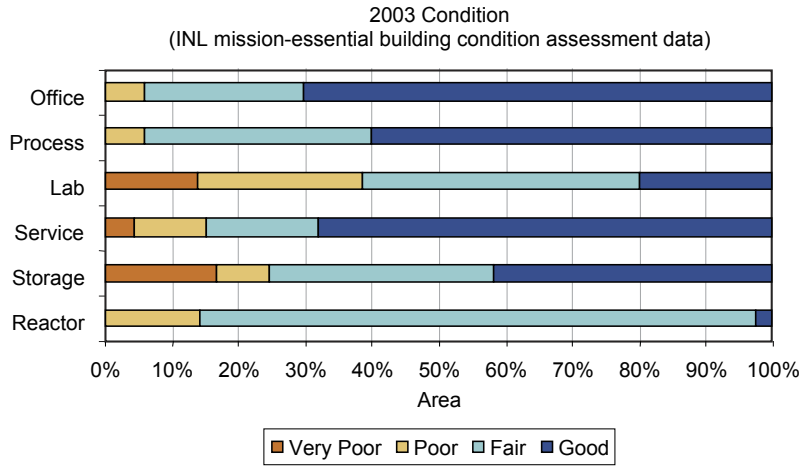


Figure 4-3. Current conditions (2003)—INL mission-essential facilities.[a]

Support infrastructure including storage, office, and multipurpose/service facilities (such as medical facilities, fire stations, and craft shops) are in the best condition. Some of these facilities will require minor focused maintenance and/or recapitalization to support currently planned and future missions. Facilities in poor/very poor (major rehabilitation/replacement required) condition will be inactivated where possible.

The majority of facility deficiencies lie in key process and laboratory facilities. Process facilities are used to manufacture, produce, process, or treat material. Examples of process facilities include test reactors, hot cells, and radiochemistry laboratories. Approximately 30% of laboratory and process buildings and systems have an INL condition ranking of poor (major rehabilitation needed) or very poor (replacement required). These facilities are vital to the success of planned and expected future missions and a substantial recapitalization investment is required.

Future Condition of Existing Facilities

Based on completion of the recapitalization projects identified in this plan and continued sustainment maintenance, the overall condition of INL facilities in FY 2013 is illustrated by Figure 4-4. If recapitalization is not supported, the condition of facilities is expected to deteriorate as illustrated by Figure 4-5.

Without recapitalization, facility capabilities required to support planned missions will impact reliability and availability. Continued use of old, sometimes failing and technologically inadequate facilities will be required. Mission success should not be expected.

4-1.3 Needed Facilities

Significant new facilities will be required over the planning period to implement the Laboratory's new missions. Figures 4-6 and 4-7 illustrate the number and timing of revitalization projects forecast in support of the Nuclear Energy and National Security missions.

4-1.4 Utilization

Space Management Process

The percent of facility utilization is calculated for each facility using a formula benchmarked by the International Facility Management Association. If a national standard does not exist, a subject matter expert's formal analysis of the facility use weighed against facility capacity is used. Figure 4-8 summarizes the overall space utilization percentages of active buildings at the Laboratory.

a. The reactor measure considers only the condition of the building. It does not consider the condition of the reactor within the building.

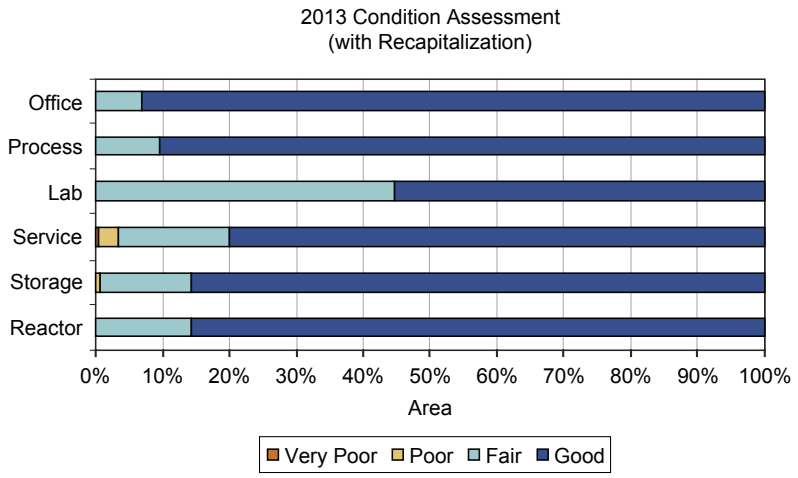


Figure 4-4. Expected conditions with recapitalization (2013)—INL mission-essential facilities.

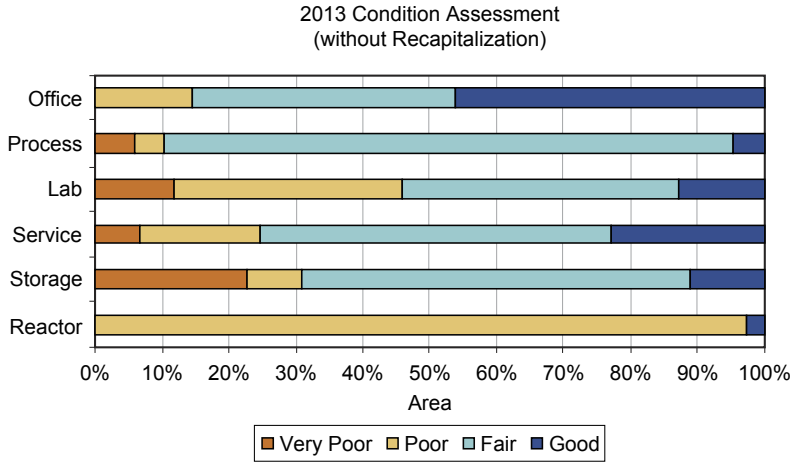


Figure 4-5. Expected conditions without recapitalization (2013)—INL mission-essential facilities.

The space management process at the Laboratory originates with the Life-Cycle Asset Management process (see Figure 4-9). The process requires planners to measure the utilization of facilities, weigh the utilization against future need and then develop alternatives to satisfy the difference between the current state and future need. These alternatives are then developed into projects including upgrades, new facilities and disposal.

Table 4-1 represents all facilities at the Laboratory. This table groups facilities by FIMS consistent use categories and lists the percent of that space that is Active or Excess as required by the Ten-Year Comprehensive Site Plan guidance.

4-1.5 Excess Facilities Elimination/Disposition

The INL has operated an aggressive Deactivation, Decontamination, and Decommissioning (demolition) (D&D&D) Program since the late 1970s. Over the years the Program has evolved into an integrated, multi-tasking, cross-trained team that is highly skilled with diverse talents and disciplines, specifically chartered to perform hazardous facility disposition project planning, development, and execution (see Table 4-2). More than 70% of the D&D&D work performed during this period has been involved in the demolition and removal of contaminated facilities.

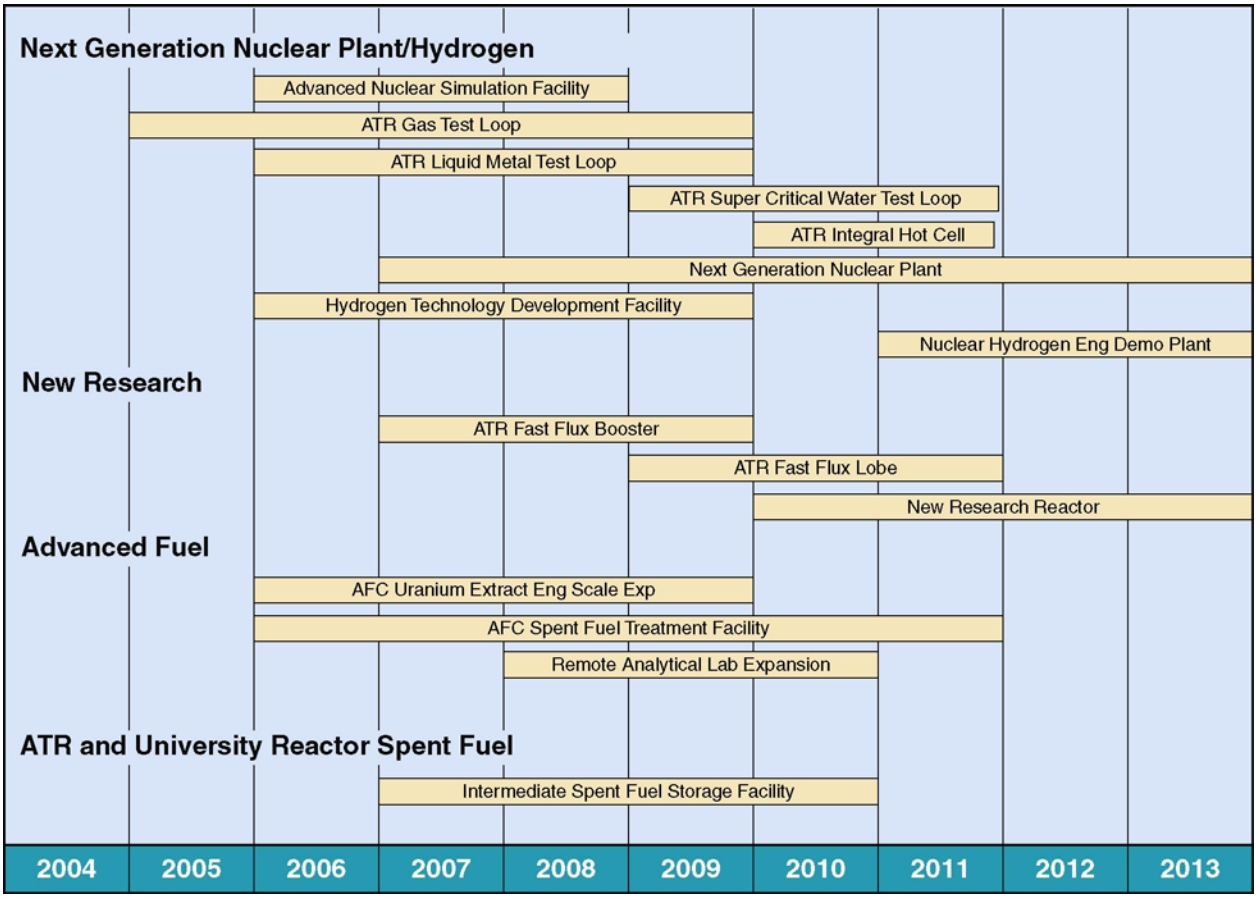


Figure 4-6. Advanced Nuclear Energy Technologies Revitalization Projects.

Figure 4-7. Center for National Security Technology Revitalization Projects.

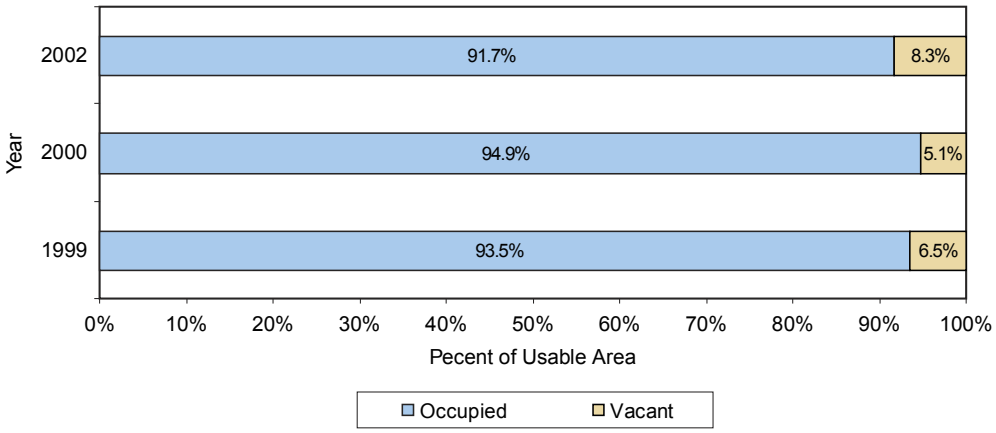


Figure 4-8. INL space utilization history for active administrative buildings.

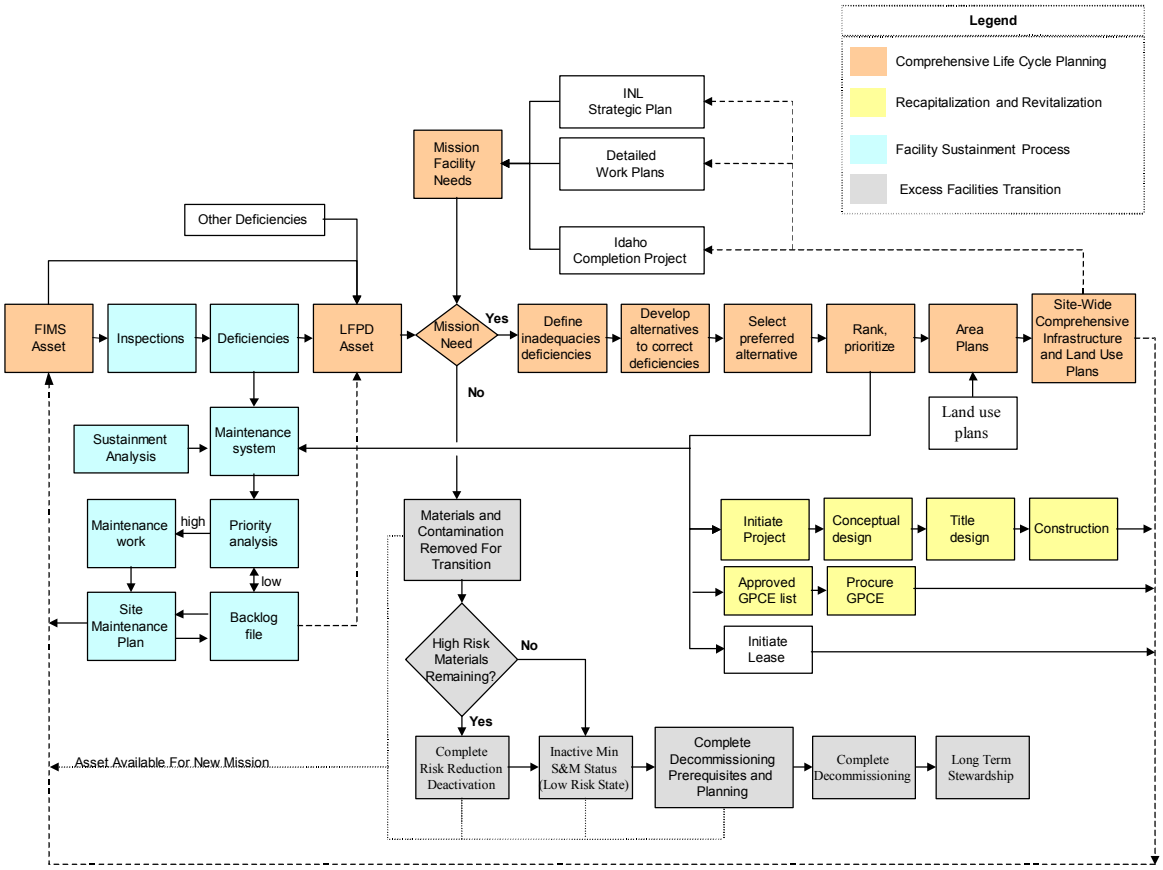


Figure 4-9. INL Life-cycle Asset Management Process.

Table 4-1. Space utilization by use and status.

Use Category	Facility Utilization Percentage of Total Square Footage (Total Square Footage = 3,323,978)		
	Active Owned (%)	Active Leased (%)	Excess (%)
Administrative (office)	13.9	21.9	0.8
Storage	9.7	—	0.8
Process	11.4	—	—
Lab	10.9	1.9	1.8
Reactor	5.1	—	0.3
Service	18.4	2.3	0.8
Total	69.4	26.0	4.5

Table 4-2. Facility demolition.

Year	Number of Facilities	Square Footage
FY 1994	10	29,626
FY 1995	4	14,544
FY 1996	6	24,336
FY 1997	20	75,802
FY 1998	1	750
FY 1999	8	170,968
FY 2000	6	39,193
FY 2001	7	33,512
FY 2002	6	23,558
Total	68	412,286

Since its inception, the D&D&D Program has supported two main thrusts:

- Removal of excess facilities that pose a risk to workers, the public, and the environment
- Removal of excess facilities that have no identified future mission.

The determination of whether a building or structure would be converted to another use or undergo decontamination and dismantlement has depended on its level of contamination, age, condition, and usefulness.

Since 1994 the D&D&D Program has closed seven facilities involving 212,000 square feet under the Resource Conservation and Recovery Act; and demolished 68 facilities totaling 412,286 square feet

In mid-2001, an *INEEL Footprint Reduction and Consolidation Plan* was developed to inactivate older facilities without any identified future mission. A minimum of 211 buildings, or 40% of the INL inventory of facilities, was identified for inactivation. In early 2002, the *Footprint Reduction and Consolidation Plan* was combined with a number of other site restoration strategies to develop a plan for accelerating clean up of the INL faster than previously agreed to in the Federal Facility Agreement and Consent Order.

In July 2002, the Office of Environmental Management was replaced as the Lead Program Secretarial Office of the INL by NE with a new mission to establish the Laboratory as the center for nuclear energy research and development. Ownership of the INL's 482 active facilities (5,100,000 square feet) and 98 standby and/or excess facilities (500,000 square feet) was divided between the NE (295 buildings, 3,300,000 square feet) and EM (284 buildings, 2,400,000 square feet) according to the mission requirements. At this time, there are 23 inactive NE-owned facilities at two areas on the Site (see Appendix C).

From FY 2004 through FY 2013, 114 facilities totaling 400,000 square feet are scheduled to be decommissioned. During the same time period, 14 new facilities with an estimated 636,000 square feet are proposed for construction (see Figure 4-10 and Appendix C, Tables C-3 and C-4). Congressional requirements call for increases in new space to be offset by eliminated space. As plans for new facilities become more clearly defined, square footage offset issues will be worked.

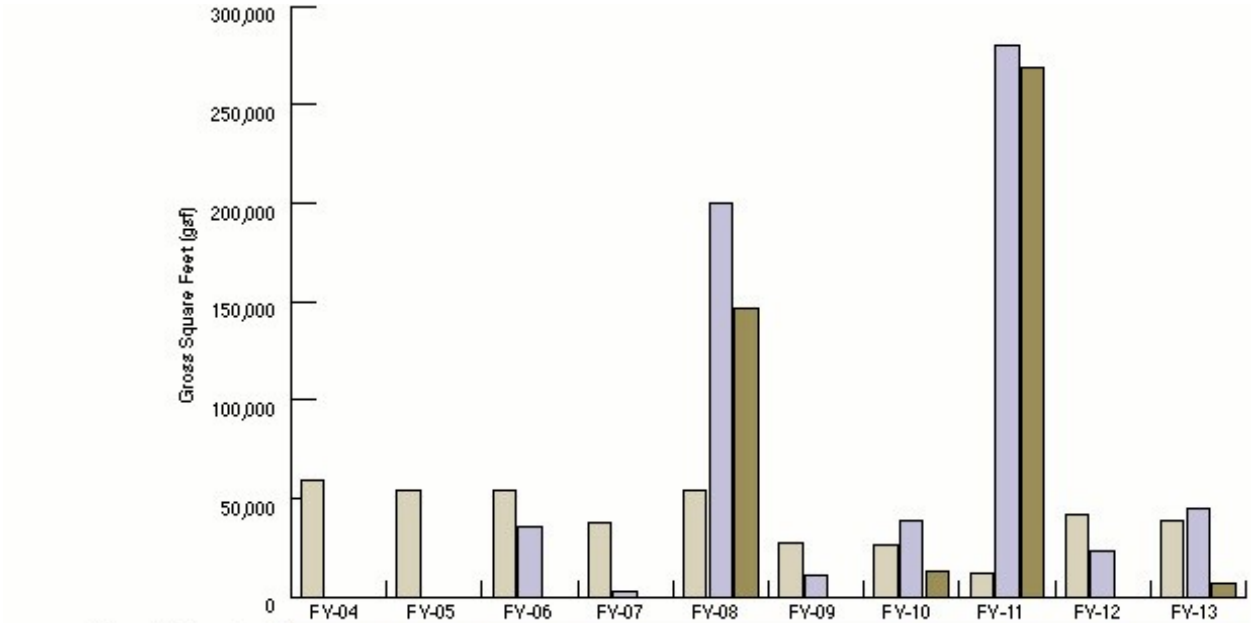
Current planning calls for a 40% reduction in the Site's current active facility footprint by the end of FY 2013. This undertaking will decrease the cost of infrastructure management by reducing hazards and risks posed by aging, inactive buildings, thereby eliminating facility maintenance and repair to under-utilized buildings and concentrating operations into fewer condensed areas to minimize utility and support service functions. This aggressive footprint reduction effort will significantly lower infrastructure expenditures and effectively reduce the cost of doing business at the INL making more funding available to be spent on research and development initiatives. Figure 4-11a illustrates the current facility footprint and Figure 4-11b shows the planned FY 2013 facility footprint.

4-1.6 Deferred Maintenance Backlog Reduction

Maintenance

The Laboratory currently does not have a complete or comprehensive accounting of maintenance conditions and deferred maintenance for the following reasons:

- Budget constraints associated with the previous mission did not justify recapitalization of much of the site's infrastructure.
- Condition assessment surveys have not been` comprehensive, confining themselves mainly to the building structure and not to be installed and/or programmatic equipment that should be part of the real property component
- The process of systematically integrating the INEEL and Argonne National Laboratory-West deferred maintenance programs has not been completed.



	FY-04	FY-05	FY-06	FY-07	FY-08	FY-09	FY-10	FY-11	FY-12	FY-13
Space Eliminated (gsf)	56,777	54,377	53,615	37,215	53,641	27,095	25,796	11,768	41,476	38,476
New Space (gsf)	ñ	ñ	35,000	3,000	200,000	11,000	39,000	280,000	23,000	45,000
Space Impact by Fiscal Year (gsf)	ñ	ñ	ñ	ñ	146,359	ñ	13,204	268,232	ñ	6,524

Figure 4-10. Planned Decommissioning.

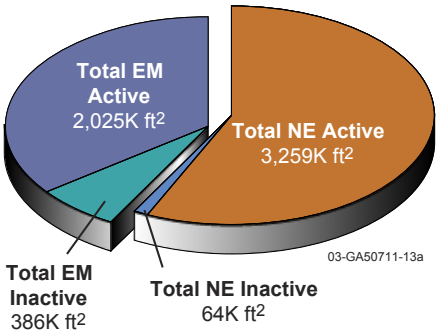


Figure 4-11a. 2003 INL facility footprint.

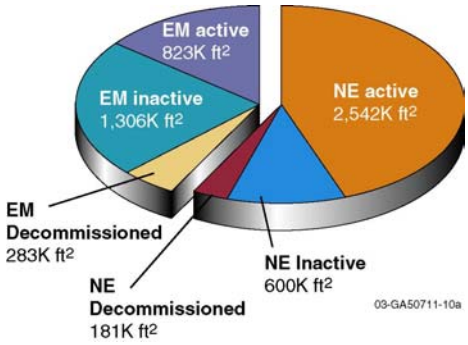


Figure 4-11b. 2013 INL facility footprint.

The path forward is to continuously improve the accuracy of deferred maintenance accounting by implementing enhancements in each of the identified areas of concern, and in general providing complete implementation of NE-ID maintenance policies.

Related improvements to the effectiveness and efficiency of the INL maintenance program combined with the recapitalization projects identified in this plan are expected to stabilize deferred maintenance backlog by 2007. By 2013 deferred maintenance levels are expected to be well within the industry target range of less than 5% of replacement plant value.

Recapitalization Summary

Completion of the recapitalization projects in Chapter Five will stabilize deferred maintenance by FY 2007, reduce deferred maintenance to within industry standards by 2013, and return facility conditions for mission essential facilities and infrastructure to an assessment level of good. Figure 4-12 shows the recapitalization investment required.

Building Recapitalization

General support buildings such as offices, medical facilities, fire stations, craft shops, and storage are in relatively good condition and will require the least recapitalization investment. In contrast, many essential laboratory and process facilities and their related equipment are old (average building age is 30 years), requiring significant maintenance and upgrades. These laboratories, process facilities, and reactors will require the majority of the new recapitalization project funding. Examples of typical projects related to these facility types are provided below while a detailed accounting of recapitalization needs is provided in Chapter 5.

- Reactor Buildings
  - Advanced Test Reactor Plant Protection System and Nuclear Instrumentation Upgrades

    Replace 30-year-old maintenance intensive plant instrumentation and control systems in the Advanced Test Reactor. The existing systems lack vendor support and have poor parts availability, which increase the likelihood of extended down time when failures occur that threaten the integrity of the Plant Protection System.
  - Replace Advanced Test Reactor Primary Heat Exchangers
  - Replace five primary to secondary heat exchangers in the Advanced Test Reactor. The existing heat exchangers are over 40 years old and are approaching the end of their useful lives.
  - Transient Reactor Test Facility

    Maintain the Transient Reactor Test Facility until a determination is made if it has a future use under the new mission.
  - Zero Power Physics Reactor

    Maintain the Zero Power Physics Reactor Facility until a determination is made if it has a future use under the new mission.

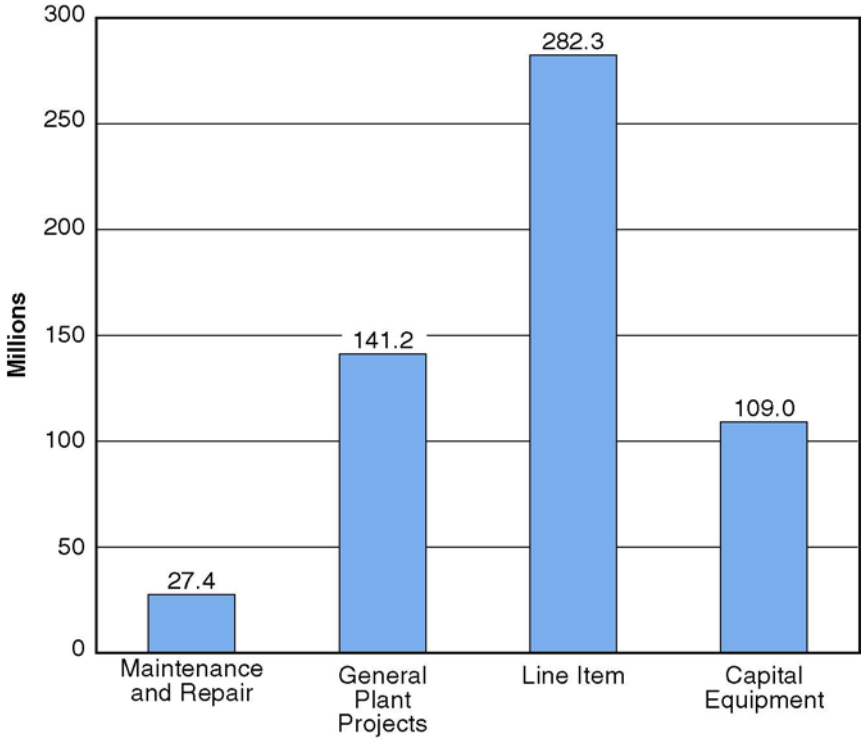


Figure 4-12. Ten-year total recapitalization investment required.

- Laboratory and Process Buildings
  - Remote Treatment Project

    The project would construct a facility annexed to the Hot Fuel Examination Facility that will allow for cost effective processing of remote-handled waste currently stored at the Radioactive Scrap and Waste Facility and the Radioactive Waste Management Complex. Operation of this facility will help ensure completion of the Governor's Agreement and INEEL Site Treatment Plan milestone for processing of solid, remote-handled transuranic waste and its removal from the State.
  - Laboratory Upgrades and Replacement Project

    New multi-program consolidated laboratory facility to provide additional wet chemistry and materials laboratory space, to provide hydrogen handling and demonstration capabilities, and to support other basic science and energy program needs. The scope of this project is currently being defined and the definition will mature along with the evolving scope of new programs.
- General Support Buildings
  - Test Reactor Area Administration

    Replace inadequate, non-compliant engineering and administrative support facilities that were constructed in the 1950s and 1960s into one new consolidated facility.

Equipment Recapitalization

Insufficient capital equipment funding over the past decade has resulted in aging and obsolescence of equipment for support activities. This equipment needs to be replaced in a timely manner.

4-1.7 Utilities

Utility upgrades are listed and prioritized in Chapter 5.

High-voltage Transmission System

The high-voltage electrical system is critical to all INL employees, facilities, and programs. The system's components must be replaced before they reach the end of their useful lives. Commercial electric power is delivered to the primary facility areas of the INL by a power transmission system loop configuration with 61 miles of 138-kV lines, about 60 miles of medium-voltage distribution lines, and 8 major substations with a cumulative transformer capacity of 342.6 megavolt amperes. Planned projects include replacing switchgear and distribution equipment that have been in service more than 40 years (more than double their design life), and have no available replacement parts.

Telecommunications

Telecommunication functions include products and services to provide the INL with voice, data, video, and wireless telecommunications through a combination of in-house and vendor resources and a set of core network services. Products include telephones, data network equipment, videoconference facilities, cellular phones, and pagers.

The INL telecommunications infrastructure must be upgraded to provide adequate, up-to-date communications networks, computers, databases, wireless infrastructure, and consumer electronics that control the mechanisms by which laboratory personnel communicate, work, and interact with one another.

Roads and Grounds

The INL has an extensive system of approximately 800 miles of improved and unimproved roads. Sitewide Landlord Operations provide for the identification, planning, and execution of required maintenance scope for all roads and grounds. This includes security and unpaved temporary roads; flood control dikes; parking lots; railroad and spur tracks; and the perimeters of the five fenced security program areas. Specific scope includes inspection and maintenance, sign maintenance, weed control, gravel pit operations, landscape maintenance, wildland preservation, street lighting, snow removal, and railroad system inspection, repair, and replacement. Settling of roadways has resulted in accumulated moisture and road damage that presents a safety hazard. The Site's roads and sidewalks must be repaired to meet safety standards.

Steam, Condensate, and Water Supply

Portions of the Site use steam for processes and space heating. The underground steam systems, condensate piping, and cathodic protection systems are vital to plant operations, but in many cases are over 35 years old and require frequent repairs. Planned projects exist, or are proposed, to replace or upgrade the steam and condensate systems and cathodic protection systems.

INL water supply is an important part of the infrastructure and is essential to future missions. Deep wells and pumps are used to supply water for domestic use, facility fire protection, and plant cooling. The current wells, pumps, and tanks are not adequate and have no back-up power source. Planned projects are proposed to correct these deficiencies.

4-1.8 Recapitalization and Revitalization Funding Requirements and Results

The requirements for infrastructure recapitalization and revitalization are illustrated in Figures 4-13 and 4-14. Target funding provides support for fixed operating costs and capital equipment and projects necessary to maintain essential services and minimum safety. The components of target funding are outlined in Chapter Five, Table 5-1.

Implementing the infrastructure recapitalization and revitalization outlined in this report will provide DOE with the capability to:

- Advance nuclear energy technology through applied research, development, and demonstration of:
  - Generation IV nuclear reactors that will provide safe, competitively priced electrical power and energy sources for production of hydrogen
  - Systems to convert the energy from nuclear reactors to hydrogen that can be used in transportation and other energy intensive systems

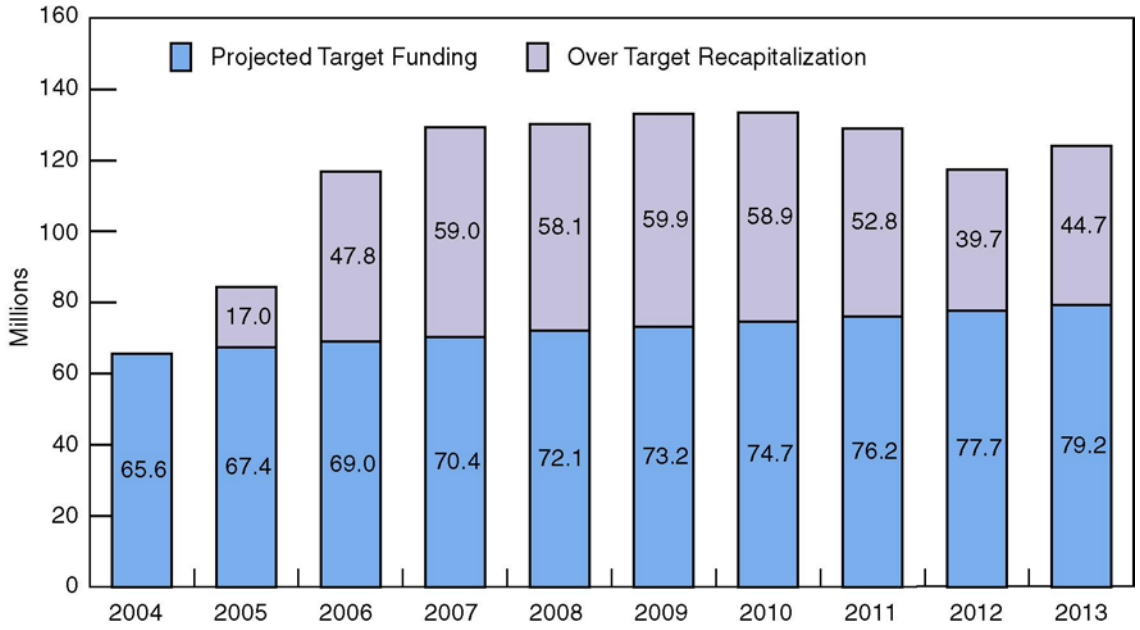


Figure 4-13. Required recapitalization funding.

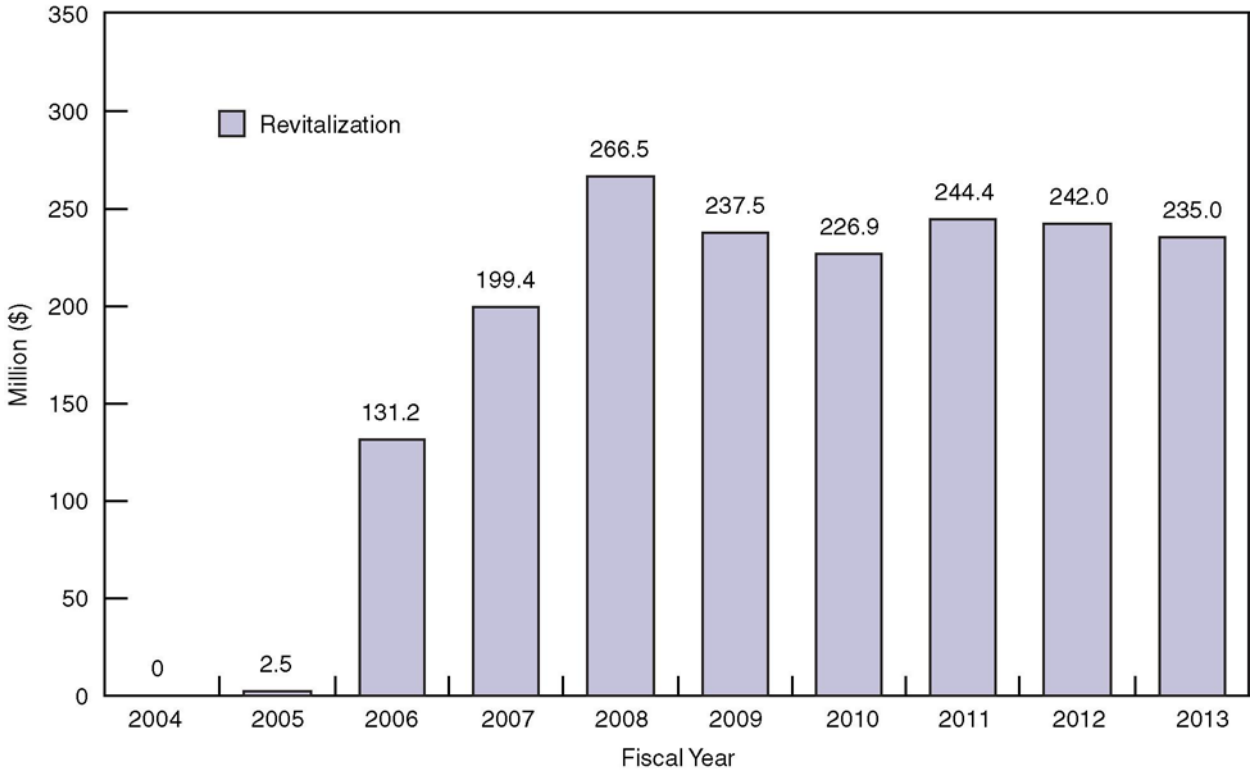


Figure 4-14. Required revitalization funding.

  - Advanced fuel-cycle systems that minimize the likelihood of proliferation and reduce the load on repository systems
  - Modeling systems that will predict the safety, reliability, and performance of new and existing energy systems.
- Create a center for national security technology that will:
  - Provide innovative solutions for protecting the nations critical infrastructure from security threats
  - Continue to provide the military services with effective command, control, and communications and mission planning tools
  - Conceptualize, design, develop, and test new counterterrorism technologies. Develop and field counter-proliferation technologies and innovative sensors for advanced detection techniques.
- Provide advanced technology services and support to vital United States Government missions to:
  - Test materials and fuel for advanced naval nuclear propulsion systems
  - Support the nuclear space initiative through ground testing of nuclear reactor power and propulsion systems
  - Support space nuclear power by developing and producing advanced radioactive power/heat sources and nuclear reactor power and propulsion systems
  - Advance development of lightweight armor to protect personnel, equipment, and nuclear materials during transport.
- Conduct basic science research in support of key DOE missions that, for example:
  - Characterize the properties of materials through spectroscopy performed using accelerator techniques and high-energy x-ray sources
  - Advance biotechnology understanding in a broad range of areas, for example, bioprocessing or biomimetics, genomics to measure pathogens in wildlife, and human antibody profiling
  - Characterize the properties of candidate materials needed for fast neutron reactor fuels and systems
  - Assess the safety and environmental concerns associated with emerging Fusion Energy design concepts, centering on major deuterium-tritium radioactive hazards and how energy sources can mobilize radioactive materials.

4-2 Environmental, Safety, and Health Issues

Projects required to address ES&H issues include:

- The Industrial Waste Pond Remediation Project at ANL-W entails soil excavation and disposal at the soon-to-be opened Idaho CERCLA Disposal Facility.
- The Remote Treatment Project is proposed to provide the necessary infrastructure to accept, sort, characterize, treat, and re-package 600+ m^3 of remote-handled mixed transuranic wastes presently stored at the INL.
- The Resource Conservation and Recovery Act (RCRA)-closure of the Experimental Breeder Reactor-II facility by 2021—the first DOE nuclear reactor facility to be closed under RCRA regulations.
- The Analytical Laboratory Suspect Waste Tanks Modification at ANL-W will install high-pressure spray wands and increase the size of viewing windows in the Analytical Laboratory suspect waste tanks. Installation of the tank modification will ensure complete transfer of the characterized liquid.
- Procurement and installation of a Contaminated Equipment Storage Building Drum Compactor ANL-W would allow a significant reduction in the volume of waste generated and save on disposal costs.

- A project to upgrade controls for potable water in radiological areas will establish corrective measures and implement the actions necessary to ensure that potable and radiological water lines are not cross-connected to meet regulatory requirements.

4-3 Workforce Profile

A key component of any National Laboratory is establishing a work environment suitable to retain and attract the highly educated and skilled employees necessary to advance the mission. Important among the characteristics necessary to accomplish this objective are viable, safe facilities with state-of-the-art equipment and missions that ensure that the employee can work in that discipline for an extended period.

Although the attrition rate at the INL is considered low by industry standards, the INL is beginning to trail other DOE laboratories in attracting personnel with advanced degrees to maintain status as a preeminent National Laboratory. This *Ten Year Comprehensive Site Plan* outlines the path forward to address an aging infrastructure and eliminate the growing technical obsolescence of key laboratory and process facilities. It will become increasingly difficult to retain and attract a qualified, skilled workforce under the current working conditions in such facilities. Projects to enhance laboratory facilities with modern capabilities that consolidate cross-disciplinary research staff foster scientific productivity and ensure a rapid response to new DOE missions and evolving national issues. Figures 4-15 and 4-16 show the current academic profile and workplace occupational classification.

4-4 Security Measures

The Safeguards and Security (S&S) Program is a separate and distinct program and is not part of the recapitalization and revitalization funding profile outlined in this plan. A list of planned S&S projects are included in Table 5-7 in Chapter 5.

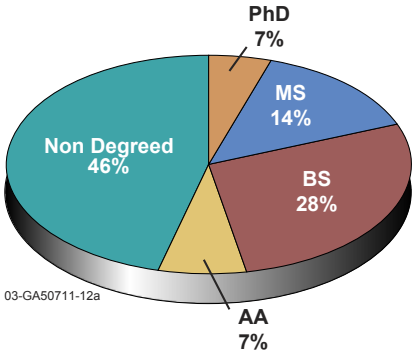


Figure 4-15. Academic profile.

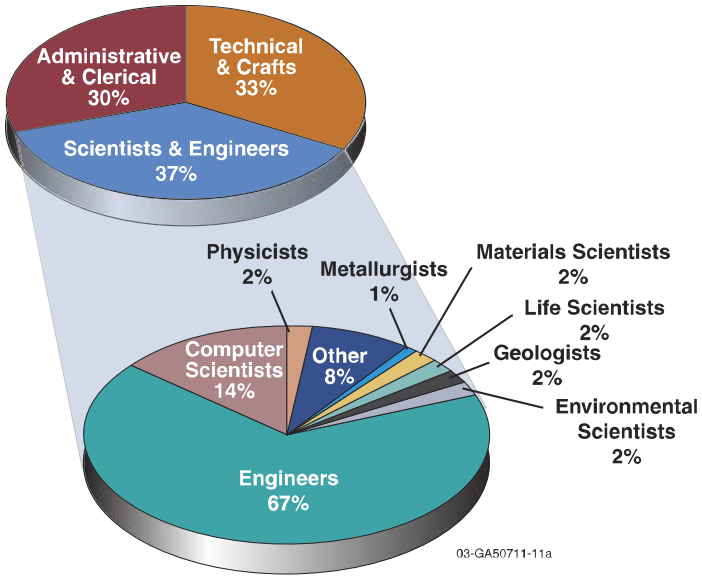


Figure 4-16. Workforce occupational classification profile.

4-4.1 INL Security Posture

Safeguards and Security is funded separately, and is not included in the NE target recapitalization or revitalization funding profiles.

The events of September 11, 2001, and subsequent prosecution of the war on terrorism resulted in a change in DOE protection requirements for special nuclear material facilities and facilities housing other security interests. The changes were initiated through DOE-HQ policy statements and later clarified by the May 2003 edition of the *DOE Design Basis Threat Policy*. The redirection in threat policy drove additional vulnerability analysis and performance testing. The analysis showed the necessity of changing the response strategy for certain targets and included an increase in the number of security officers across the Site. Certain facilities containing special nuclear material at Argonne National Laboratory–West, Test Reactor Area, and Idaho Nuclear Technology and Engineering Center require protection measure upgrades. The Laboratory also implemented Integrated Safeguards and Security Management in research and development.

4-4.2 New Security Infrastructure

Argonne National Laboratory–West. Argonne National Laboratory-West will be the site of a new Consolidated Safeguards and Security Support Facility. The purpose of the facility is to bring together under one roof various security functions such as the armory, logistics area, classified discussion areas, and protective force exercise facility. Immediately following September 11, 2001, vehicle entry points were relocated and barricades were installed at existing vehicle traps. Current work includes upgrading vehicle entry point control and receiving areas, upgrades to facility door controls, and upgrades to outer perimeter detection systems. Future security enhancement projects are: installation of additional vehicle barriers; upgrades to facility barriers; installation of security gate turnstiles; purchase of fixed and portable thermal imagery cameras, armored vehicles, and explosive detection equipment; upgrading the live firing range; and building a tactical training facility.

Test Reactor Area. Security upgrades need to be made to the protection systems at Test Reactor Area Nuclear Material Inspection and Storage facility to achieve the level of protection required for the materials being stored there. The upgrade will establish a Perimeter Intrusion Detection and Assessment System around the facility. The upgrades include perimeter fencing, lighting, redundant alarm sensors, video cameras for alarm assessment, vehicle barriers, an access portal, metal, special nuclear material and explosive detectors and an Argus field processor.

Advanced Test Reactor. Security upgrades need to be made to the protection systems at Test Reactor Area Advanced Test Reactor facility to achieve the level of protection required for this operating reactor. The upgrades will establish a Perimeter Intrusion Detection and Assessment System around the facility. The upgrades include perimeter fencing, lighting, redundant alarm sensors, video cameras for alarm assessment, vehicle barriers, an access portal, metal, special nuclear material and explosive detectors and an Argus field processor.

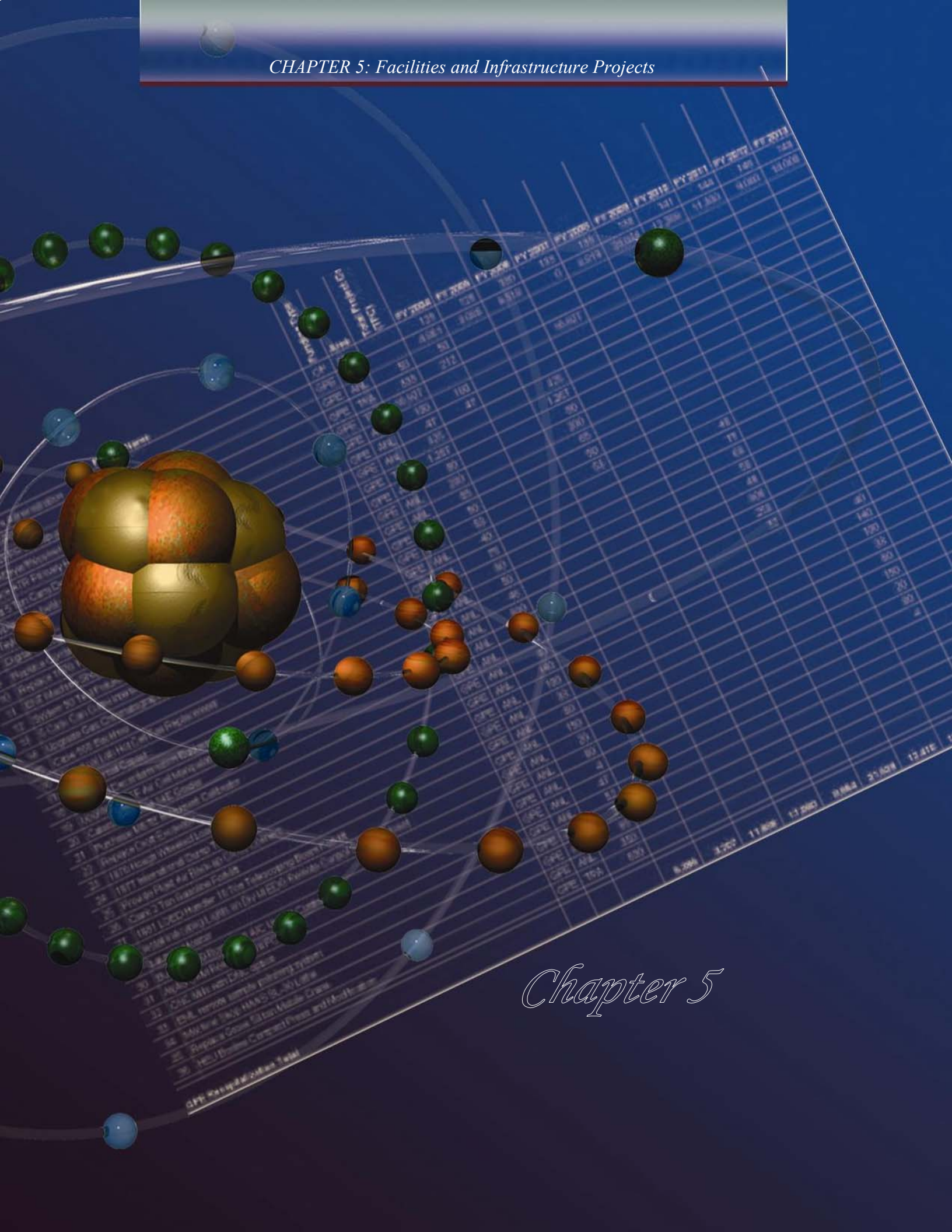
Idaho Nuclear Technology and Engineering Center. Security upgrades need to be made to the protection systems at Idaho Nuclear Technology and Engineering Center facilities to achieve the level of protection required for the materials being stored there. The upgrades will establish a Perimeter Intrusion Detection and Assessment System around a group of nuclear material storage facilities, including the Fuel Processing Restoration/Fluorinel Dissolution Process and Fuel Storage Facility, CPP-666; the Peach Bottom Fuel Storage Facility, CPP-749; and the Fuel Receiving and Storage Facility, CPP-603. The upgrades include perimeter fencing; lighting; redundant alarm sensors; video cameras for alarm assessment; vehicle barriers; an access portal; special nuclear material; explosive detectors; and an Argus field processor.

4-4.3 Long-Term Stewardship

The Long-Term Stewardship Program supports DOE with its management of residual waste sites and coordinates investments in stewardship science and technology. Environmental stewardship activities include: site monitoring and

maintenance of entombed buildings or facilities and maintenance of other barriers and containment structures. Environmental stewardship is necessary to protect human health and the environment from hazards posed by residual contamination and/or waste remaining at the Site once cleanup is complete.

The Office of Environmental Management has responsibility for the Long-Term Stewardship Program through 2025. The environmental stewardship capabilities are available to other agencies and organizations for environmental management, enhanced environmental solutions, decision analysis, and stewardship operations.



Chapter 5


Chapter 5
RESULTS
SAVINGS
FY

Facilities and Infrastructure Projects

5-1 Overview of Site Project Prioritization

The Idaho National Laboratory (INL) has a formal process for prioritizing projects using the DOE Capital Asset Management Process (CAMP) methodology as one of the tools to prioritize project requirements. This process is used for all levels of projects including line item, general plant projects, operating projects, and capital equipment to develop a primary ordering of projects based on score. The CAMP process prioritizes projects based on mission essential needs in several strategic areas such as Mission and Investment, Safeguards and Security, and Environmental Safety and Health. Management has established a formal process to adjust CAMP scores to ensure that critical projects are placed in the proper priority. Appendix D shows the Planning Integration and Prioritization Process and a step-by-step description.

5-2 Facility and Infrastructure Project Spreadsheets

The following facilities and infrastructure cost projection tables provide an understanding and overview of the forecast for the site's facilities and infrastructure projects/activities and associated cost profile for Fiscal Years 2004-2013.

Table 5.1 Facilities and Infrastructure Projected Target Funding for the Idaho National Laboratory. This table identifies the core infrastructure operations, LICP, GPP/OPS, CE, and D&D requirements that fall within the Facilities and Infrastructure projected target funding. (Note: Projected Target Funding is based on the previous cleanup mission, which only allotted funds in support of essential services and environmental, safety and health infrastructure requirements. Significant recapitalization and revitalization funding, over projected target funding, is required for the new Nuclear Energy, National Security, and basic science and research missions.)

Table 5.2 Over Target Recapitalization Line Item Construction Projects for the Idaho National Laboratory. This table lists the prioritized line item construction project recapitalization requirements over the projected target funding. These projects are required to support on-going and planned INL missions.

Table 5.3 Over Target Recapitalization General Plant and Operating Projects for the Idaho National Laboratory. This table shows an integrated INL prioritized list of general plant projects and operating recapitalization projects over the projected target funding. These projects are required to support on-going and planned INL missions.

Table 5.4 Over Target Recapitalization Capital Requirements for the Idaho National Laboratory. This table shows the list of prioritized capital equipment recapitalization requirements over the projected target funding. These projects are required to support on-going and planned INL missions.

Table 5.5 Total Over Target Recapitalization Requirements for the Idaho National Laboratory. This table summarizes the recapitalizations funds over the projected target funding required to support ongoing and future INL missions.

Table 5.6 Infrastructure Revitalization Line Item Capital Projects/General Plant Projects/ Capital Equipment Projects for the Idaho National Laboratory. This table shows the revitalization projects required to support INL and DOE Office of Nuclear Energy, Science and Technology missions.

Table 5.7 Safeguards and Security. This table shows the safeguards and security requirements during the ten-year planning period. (Note: Safeguards and Security infrastructure upgrades are included for completeness; however, Safeguards and Security is funded separately, and is not included in the facilities and infrastructure target, recapitalization, or revitalization funding profiles.)

Table 5.1 INL Facilities and Infrastructure Cost Projection Spreadsheets

Projected Target Funding

($000s)

Note: Projected Target Funding is based on the previous cleanup mission, which only allotted funds in support of essential services and environmental, safety and health infrastructure requirements. Significant recapitalization and revitalization funding, over projected target funding, is required for the new Nuclear Energy, National Security, and basic science and research missions.

Priorities	Title	Funding Type	Area	Total Project Cost (TPC)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	Infrastructure Operations													
	Landlord Facility Operations (Nuclear and Radiological Facilities Operations, Environmental Compliance)	Op			38,877	42,909	44,477	45,375	46,293	45,149	46,052	46,973	47,913	48,871
	Infrastructure Program Management and Development	Op			6,900	6,756	6,992	7,132	7,275	8,433	8,601	8,773	8,949	9,128
	Roads and Grounds	Op			2,000	1,747	1,810	1,846	1,883	2,199	2,243	2,288	2,334	2,380
	Inactive Facilities Surveillance and Maintenance	Op			700	165	171	174	178	208	212	216	220	225
	Facility Decommissioning and Disposition	Op			375	160	166	169	172	201	205	210	214	218
	Disposition of Legacy Materials Activities	Op			500	500	500	500	500	500	510	520	531	541
	Cross Cutting Activities (NOAA, Shoshone and Bannock Indian Tribes, State of Idaho, Payment in lieu of taxes)	Op			3,125	3,424	3,547	3,618	3,690	4,310	4,396	4,484	4,574	4,665
	Infrastructure Operations Total				52,477	55,661	57,662	58,814	59,989	61,000	62,220	63,464	64,733	66,028
	Line Item Construction Projects (LICP)													
1	Test Reactor Area Fire and Life Safety Upgrades	LICP	TRA	19,738	500									
2	Test Reactor Area Electrical Utility Upgrade Project	LICP	TRA	9,646	1,840	1,523	827							
3	Test Reactor Area Utility Upgrade	LICP	TRA	21,460			85	1,000	3,255	4,980	4,983	3,765	3,392	
	Line Item Construction Project Total				2,340	1,523	912	1,000	3,255	4,980	4,983	3,765	3,392	0
	General Plant Projects (GPP)/ Expense Projects													
	GPP/Expense Project Program Administration	Op	N/A		500	510	520	531	541	552	563	574	586	598
1	Min Safe/Caretaker Upgrades	GPP	TBD		250	250	262	250	250	250	250	250	250	250
2	Industrial Waste Pond Remediation	GPP	ANL	1,650	1,650									
3	CFA-698 Cal Lab HVAC Upgrade	Op	CFA	492	492									
4	Willow Creek Building (WCB) Lease	Op	IF	5,300	2,000	3,300								

Table 5.1 INL Facilities and Infrastructure Cost Projection Spreadsheets (continued)

Projected Target Funding

($000s)

Note: Projected Target Funding is based on the previous cleanup mission, which only allotted funds in support of essential services and environmental, safety and health infrastructure requirements. Significant recapitalization and revitalization funding, over projected target funding, is required for the new Nuclear Energy, National Security, and basic science and research missions.

Priorities	Title	Funding Type	Area	Total Project Cost (TPC)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
5	Test Reactor Area Potable Water Well System	GPP	TRA	2,950	1,278	258								
6	Test Reactor Area Retention Basin Isolation	GPP	TRA	1,423	277	894								
5	Inspect and Repair Elevated Water Tank	Op	TRA	755	377	378								
8	ATRC Control System Upgrade	Op	TRA	1,648		1,274	375							
9	INL High Voltage Equipment Replacement (Antelope Substation)	GPP	SW	4,223			4,223							
10	Naval Reactor Facility Transformer Upgrade	GPP	SW	2,278			1,109	1,169						
11	INL Research Center Fire Alarm Notification Upgrade	GPP	IF	350				350						
12	ATR Switchgear and Motor Control Center Upgrade	Op	TRA	4,627				4,627						
13	INL Power System Reliability Enhancement with Transformer Circuit Switchers	GPP	SW	1,273				945	328					
14	ATR Diesel Generator Replacement	GPP	TRA	4,883					4,883					
15	Replace the 2.4 kV Switchgear BLDG #768 & 754	GPP	ANL	1,076					95	981				
16	Upgrade 13.8 kV Switchgear	GPP	ANL	1,573						1,573				
17	Building and Switchgear at EBR II	GPP	SW	2,025						1,061	964			
18	INL High Voltage Equipment Replacement (Scoville Substation)	GPP	SW	4,638							2,825	1,813		
19	INL High Voltage Equipment Replacement (Test Reactor Area Substation)	GPP	SW	4,114								3,374	740	
20	INL High Voltage Equipment Replacement (Test Area North Substation)	GPP	SW	4,354									4,354	
21	INL High Voltage Equipment Replacement (Experimental Breeder Reactor II Substation)	GPP	SW	4,735									652	4,083
22	INL High Voltage Equipment Replacement (WROC Substation)	GPP	SW	5,164										5,164
	General Plant Projects (GPP)/Expense Projects Total				6,700	6,864	6,489	7,872	6,097	4,417	4,602	6,011	6,582	10,095

Table 5.1 INL Facilities and Infrastructure Cost Projection Spreadsheets (continued)

Projected Target Funding

($000s)

Note: Projected Target Funding is based on the previous cleanup mission, which only allotted funds in support of essential services and environmental, safety and health infrastructure requirements. Significant recapitalization and revitalization funding, over projected target funding, is required for the new Nuclear Energy, National Security, and basic science and research missions.

Priorities	Title	Funding Type	Area	Total Project Cost (TPC)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	Capital Equipment													
	CE Program Administration	Op	N/A		125	127	130	133	135	138	141	144	146	149
1	Site Wide GPCE	CE	SW		3,385	2,500	2,540	2,581	2,624	2,665	2,719	2,774	2,827	2,962
2	Replace ZPPR backup air compressors	CE	ANL	50	50									
3	ATR Air/Dryer/Receiver Mods.	CE	TRA	333	212									
4	Drott 5 Ton Carry Deck Crane	CE	ANL	100	100									
5	Replace low beta counter	CE	ANL	47	47									
6	Replace ATR Primary Heat Exchangers (Planning)	CE	TRA	400		400								
7	Taylor 25 Ton	CE	ANL	325		325								
8	Digital Radiograph	CE	TRA	1,267			1,267							
	Capital Equipment Total				3,919	3,352	3,937	2,714	2,759	2,803	2,860	2,918	2,973	3,111
Projected Funding Total					65,560	67,400	69,000	70,400	72,100	73,200	74,664	76,158	77,681	79,234

Table 5.2 INL Facilities and Infrastructure Cost Projection Spreadsheets

Over Target Recapitalization

Line Item Construction Projects

($000s)

Priority	Project Name	Funding Type	Area	Total Project Cost (TPC)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
1	Sitewide INL Information Network	LICP	SW	33,466		8,000	15,000	6,000	2,278					
2	Remote Treatment Project	LICP	ANL	86,000		9,000	9,000	27,000	25,000	10,000	8,278	5,300		
3	Advanced Test Reactor Plant Protective System and Nuclear Instrumentation Upgrades	LICP	TRA	18,583			100	1,783	4,000	5,300	3,600	3,800		
4	Test Reactor Area Administration Building	LICP	TRA	18,973			252	30	750	5,361	4,270	4,300	4,010	
5	Test Reactor Area Support Systems Upgrade	LICP	TRA	13,862			252	830	4,260	4,260	4,260			
6	RCRA Closure of EBR-II Facility by 2021		ANL	26,900						1,000	1,000	1,000	1,000	1,000
7	Test Reactor Area Maintenance Shop	LICP	TRA	6,214						190	24	1,500	1,800	2,400
8	Fuel Fabrication Facility Upgrades	LICP	ANL	8,000							8,000			
9	ATR Improved Emergency Cooling Pump	LICP	TRA	6,936							210	26	3,300	2,200
10	ATR Demineralized Water Injection System (ECCS)	LICP	TRA	6,636							210	26	2,100	2,000
11	INL Laboratory Upgrades and Replacement Project	LICP	SW	17,700								1,354	8,846	7,500
12	Multiprogram Office Building	LICP	ANL	8,000									900	4,196
13	ATR Operating & Storage Canal Expansion	LICP	TRA	8,347									220	27
LICP Recapitalization Total					0	17,000	24,604	35,643	36,288	26,111	29,852	17,306	22,176	19,323

Table 5.3 INL Facilities and Infrastructure Cost Projection Spreadsheets
Over Target Recapitalization
General Plant and Operating Projects
($000s)

Priority	Project Name	Funding Type	Area	Total Project Cost (TPC)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
1	Install Diesel for Deep Well Pump No.1 (2400V)	GPP	ANL	225			225							
2	Fuel Conditioning Facility Stack Monitor System Upgrade	GPP	ANL	600			600							
3	Site Condensate and Steam Component Replacement Program	GPP	ANL	1,215			1,215							
4	ATR Process DCS Upgrades	Op	TRA	3,982			3,982							
5	ATR Console Display System (CDS) Upgrade	Op	TRA	4,443			4,443							
6	Test Reactor Area Site Paging and Evacuation System	GPP	TRA	1,245			1,231							
7	T-2 Cask Replacement Project	GPP	ANL	4,564			3,065	1,499						
8	Chemical Off Loading Station	GPP	TRA	337				288						
9	Replace 13.8kV/4160V Comm. Transformers	Op	TRA	1,516				1,415						
10	Site Power Distribution Protective Relay	GPP	SW	1,795				1,795						
11	ATR RMS Upgrade	Op	TRA	3,408				1,231						
12	ATR Reactor Floor Particle Control Upgrade	GPP	TRA	2,563				2,563						
13	Advanced Test Reactor M-10 Safety Related Power Supply Upgrade	GPP	TRA	2,654					2,654					
14	INL Wireless Data Infrastructure	GPP	SW	529					529					
15	Howe Peak Transmitter Underground Power Cable Replacement	GPP	SW	1,151					1,151					
16	Replace Test Reactor Area Demin. Water Tanks and Test Reactor Area. Pumps	GPP	TRA	4,297					4,297					
17	Research and Development Laboratory Infrastructure Modification	GPP	INTEC	5,724						5,724				
18	Test Reactor Area Perimeter Lighting System	Op	TRA	1,916						1,916				
19	IF-605 Energy Storage Tech Lab Exp'n & Upgd	GPP	IF	2,731						2,731				
20	IF-603 HVAC Cooling Tower Replacement	GPP	IF	50						50				
21	Test Reactor Area-605 Warm Waste Treatment Fac. Control Mods.	GPP	TRA	2,558						2,558				
22	CFA Cafeteria Upgrade	GPP	CFA	2,448						2,448				

Table 5.3 INL Facilities and Infrastructure Cost Projection Spreadsheets (continued)

Over Target Recapitalization

General Plant and Operating Projects

($000s)

Priority	Project Name	Funding Type	Area	Total Project Cost (TPC)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
23	CFA-696 Transportation Complex Propane System Upgrade	GPP	CFA	400						400				
24	Evaluate Replacement Capacitor to HFEF In-cell Cranes and EMMs	Op	ANL	7						7				
25	INL Research Center Complex HVAC Control Upgrade	GPP	IF	200						200				
26	Analytical Laboratory Suspect Waste Tanks Modification	GPP	ANL	440						440				
27	Railroad Switch Replacement	GPP	SW	697						697				
28	Research and Development Office Building	GPP	INTEC	5,750						5,750				
29	Replace Service Water Pumps & Controls	GPP	ANL	100						100				
30	ETL Basket Redesign	GPP	ANL	111						111				
31	CFA-601 Conversion From Steam to Alternative Heat	GPP	CFA	1,024						1,024				
32	Refurbish hot cell radiation shielding windows at the fuel conditioning facility (fcf)	GPP	ANL	2,982							2,982			
33	CFA-696 Transportation Facility Upgrades	GPP	CFA	1,900							1,900			
34	PBF-632 HVAC Upgrade	GPP	PBF	200							200			
35	PER-768 Water Tank Upgrade	GPP	PBF	250							250			
36	TRA Plant Lighting	GPP	TRA	554							554			
37	INL High Mast Lighting	GPP	SW	719							719			
38	Replace SCMS roll-up door	Op	ANL	35							35			
39	RLWS Cerium Ion Exchanger Filter	Op	ANL	5							5			
40	Controls for Potable Water in Rad Areas	GPP	SW	1,224							1,224			
41	WCB Network Switch and Cable Upgrade	GPP	IF	2,085							2,085			
42	TSA/TSB Fire Alarm Notification Upgrade	GPP	IF	250							250			
43	Test Reactor Area Plant and Instrument Air Compressor Building	GPP	TRA	5,724							5,724			
44	Test Reactor Area-632 Hot Cell Pad	Op	TRA	258							258			
45	CFA Potable/Firewater Tank and System Upgrade	GPP	CFA	3,711							3,711			
46	Upgrade Steam and Condensate Lines at CFA	GPP	CFA	612							612			
47	Site Roof Repair Program	Op	ANL	1,901								1,901		

Table 5.3 INL Facilities and Infrastructure Cost Projection Spreadsheets (continued)
Over Target Recapitalization
General Plant and Operating Projects
($000s)

Priority	Project Name	Funding Type	Area	Total Project Cost (TPC)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
48	Fuel Conditioning Facility Criticality Monitoring System Evaluation	Op	ANL	26								26		
49	Install CESB (794) Drum Compactor	Op	ANL	5								5		
50	Load Coordination Study For The Division I/II EDG Output Breakers	Op	ANL	17								17		
51	Replace Main Cell Chillers CH101A/B	GPP	ANL	300								300		
52	Upgrade Diesel Generators	GPP	ANL	250								250		
53	Test Reactor Area-653 HVAC Upgrade	GPP	TRA	852								852		
54	NMIS HVAC Upgrade	GPP	TRA	3,147								3,147		
55	Repair/Replace the Concrete Sidewalks at ANL-W	Op	ANL	500								500		
56	Upgrade Cooling Water Filtration	Op	ANL	130								130		
57	Replace NRAD Demineralizer Conductivity Cells	Op	ANL	24								24		
58	Decon Spray Chamber Sump Pump	Op	ANL	10								10		
59	Refurbish TREAT Control Room (Building 724)	GPP	ANL	100								100		
60	Upgrade Transient Reactor Test Facility Automatic Reactor Control System Utility Node	GPP	ANL	450								450		
61	Building 710 Air Intake Modification	GPP	ANL	70								70		
62	Evaluate Passive Restraint System for Roof of SEM-TEM-Photo Lab	Op	ANL	25								25		
63	IF-608 Building Power Upgrade	GPP	IF	350								350		
64	CFA Water Distribution System Well Pump Upgrades	GPP	CFA	70								70		
65	Test Reactor Area Remote Monitoring System	GPP	TRA	2,562								2,562		
66	Test Reactor Area Warehouse	GPP	TRA	2,362								2,362		
67	IF-601/605/611/627/638 Roof Replacement	GPP	IF	750								750		
68	IF-602 HVAC System Upgrade	GPP	IF	450								450		
69	Test Reactor Area-604 HVAC Upgrade	GPP	TRA	334								334		
70	Site-wide Road Repair Program	Op	ANL	100								100		

Table 5.3 INL Facilities and Infrastructure Cost Projection Spreadsheets (continued)

Over Target Recapitalization

General Plant and Operating Projects

($000s)

Priority	Project Name	Funding Type	Area	Total Project Cost (TPC)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
71	Relocate RLWS Criticality Monitor from inside RLWS to outside RLWS	Op	ANL	28								28		
72	CFA HVAC Instrumentation and Controls Centralization	GPP	CFA	348								348		
73	INL Research Center Storage Facility	GPP	IF	1,631								1,631		
74	Upgrade FCF Moisture Monitor Analyzers	Op	ANL	22								22		
75	Replace NRAD NI and Rx Control and Safety System	GPP	ANL	200								200		
76	Design Replacement Grip Drive Motor for HFEF/FCF EM's	GPP	ANL	40								40		
77	Upgrade Sanitary Waste Pumps & Controls	Op	ANL	20								20		
78	Replace TREAT Reactor Trip System (RTS) High Voltage Power Supplies	GPP	ANL	75								75		
79	Upgrade Industrial Waste Pumps & Controls	Op	ANL	20								20		
80	New Liner For Lift Station Tank	Op	ANL	20								20		
81	Fuel Conditioning Facility Floor Loading Structure Analysis for Lift Truck Access	Op	ANL	16								16		
82	INL Road System Upgrade	GPP	SW	1,417								1,417		
83	Energy Conservation Program	Op	ANL	50								50		
84	Redesign Rabbit System Pivot-joint in DSC	GPP	ANL	51								51		
85	Evaluate FMF Oxygen Monitoring System	GPP	ANL	66								66		
86	Replace Test Reactor Area Interior Roads	GPP	TRA	1,531								1,531		
87	Upgrade SCMS High Bay Lighting	Op	ANL	19								19		
88	Building 772 West End Expansion	Op	ANL	300								300		
89	Test Reactor Area-670 Roof Replacement	GPP	TRA	648								648		
90	Test Reactor Area Lawn Sprinkler Upgrade	GPP	TRA	890								890		
91	CFA Sewage Disposal Plant System Upgrade	GPP	CFA	2,552								2,552		
92	Test Reactor Area Storm water Drainage	GPP	TRA	1,945									1,945	
93	CFA-615 Office Building HVAC Upgrades	GPP	CFA	128									128	
94	CFA-663 Core Storage Library HVAC Upgrade	GPP	CFA	77									77	
95	Replace Argon Compressors	GPP	ANL	200										200

Table 5.3 INL Facilities and Infrastructure Cost Projection Spreadsheets (continued)
Over Target Recapitalization
General Plant and Operating Projects
($000s)

Priority	Project Name	Funding Type	Area	Total Project Cost (TPC)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
96	Modify North Radiography Station Exhaust Duct Discharge	GPP	ANL	117										117
97	Site Cooling Water System Upgrade	GPP	ANL	12										12
98	Replace Oil Furnace with Electric Heat	GPP	ANL	45										45
99	Building 772 heated storage	Op	ANL	180										180
100	Remove Unused Equipment-Systems from IBC Wash Stations & RLWS	GPP	ANL	50										50
101	Building 772 Air Conditioning	GPP	ANL	125										125
102	Replace FCF North Basement Air Conditioner	GPP	ANL	20										20
103	Site-wide Storm Drainage program	Op	ANL	50										50
104	Replace Elevator	GPP	ANL	43										43
105	D Wing Basement Ventilation Modification	GPP	ANL	360										360
106	CFA Water Distribution System Upgrades	GPP	CFA	1,995										1,995
107	Reduce Sound Levels in Work Area Near Building Exhaust Fans	Op	ANL	18										18
108	Install disconnect switches for FCF ACU1 and 2	Op	ANL	3										3
109	Provide Key Switch for 60 kW Diesel Generator Backup Emergency Electrical Power	Op	ANL	11										11
110	Met Loading Box Transfer Lock Purge System Modification	Op	ANL	20										20
111	Provide Intranet Service to the Zero Power Physics Reactor Workroom	Op	ANL	3										3
112	Additional FCF Electrical Bus duct.	GPP	ANL	159										159
113	Upgrade Building Ventilation System	GPP	ANL	36										36
114	Combine OCS500C and 500G	Op	ANL	40										40
115	Alarm Indication for SLC Power Supplies	Op	ANL	25										25
116	Replace Monorail for North MRG Hoist in HFEF Room 318	Op	ANL	20										20
117	ALP-7 Cask Spreader Bar	Op	ANL	21										21
118	Vacuum Pump Exhaust Lines	Op	ANL	24										24
119	Rapid Insertion Port for Schofields Hole	GPP	ANL	49										49

Table 5.3 INL Facilities and Infrastructure Cost Projection Spreadsheets (continued)

Over Target Recapitalization

General Plant and Operating Projects

($000s)

Priority	Project Name	Funding Type	Area	Total Project Cost (TPC)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
120	Replacement of Gauges on BEEP 60 kW Generator at HFEF	Op	ANL	15										15
121	Remove Halon System from Cabinets in FCF Control Room	Op	ANL	22										22
122	Replace HALON System with Wet Sprinkler System	GPP	ANL	20										20
123	RLWTF Building 798 Air Conditioning	GPP	ANL	53										53
124	Replace PDPE-2 Panel Main Panel Switch	Op	ANL	10										10
125	Install Test Connections on Remote Transfer Switch/ARCS Hardware	Op	ANL	22										22
Operating (Op) Projects Subtotal					0	0	8,425	2,646	0	1,923	298	3,233	0	484
GPP Projects Subtotal					0	0	6,336	6,145	8,631	22,233	20,211	21,495	2,149	3,284
GPP/Expense Subtotal					0	0	14,761	8,791	8,631	24,156	20,509	24,728	2,149	3,768

Table 5.4 INL Facilities and Infrastructure Cost Projection Spreadsheets

Over Target Recapitalization

Capital Equipment Requirements

($000s)

Priority	Project Name	Funding Type	Area	Total Project Cost (TPC)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
1	Site Wide GPCE	CE	SW				2,994	8,000	8,160	8,323	8,490	8,659	8,833	9,009
2	Replace ATR Primary Heat Exchangers	CE	TRA	16,527			5,000	6,527	5,000					
3	Replace Cordax measuring machine	CE	ANL	80			80							
4	Replace 1976 15 ton crane	CE	ANL	200			200							
5	ENT Machine Shop CNC Lathe	CE	ANL	65			65							
6	System 50 Test Fixture	CE	ANL	50			50							
7	5 Cask Can Cutter Interlock	CE	ANL	53			53							
8	Upgrade Gas Chromatograph Operating System	CE	ANL	40						40				
9	Case 580 Backhoe	CE	ANL	75						75				
10	Analytical Lab Hot Cell Fan Replacement	CE	ANL	60						60				
11	Wide Format Copier	CE	ANL	50						50				
12	Improved Decontamination Equipment	CE	ANL	46						46				
13	Upgrade HFEF Air Cell Manipulators	CE	ANL	800						800				
14	Caterpillar Model 14E Grader	CE	ANL	250						250				
15	Purchase M&TE Instrument Calibrator	CE	ANL	32						32				
16	Replace Drott Excavator	CE	ANL	40								40		
17	1976 Hough Wheeled Loader	CE	ANL	140								140		
18	1977 International Dump Truck	CE	ANL	100								100		
19	Provide Plant Air Back-up Cross Connect	CE	ANL	33								33		
20	Clark 2 Ton Gasoline Forklift	CE	ANL	60								60		
21	Alpha CAM Removal from FCF	CE	ANL	47									47	
22	CNC Mills with DNC option	CE	ANL	52									52	
23	1981 LOED Handler 10 Ton Telescoping Boom Forklift	CE	ANL	150								150		
24	Install Indicating Lights on Div I-II EDG Remote Control Switch Cabinet	CE	ANL	20								20		
25	Laundry Monitor	CE	ANL	80								80		
26	Building 720 Room 108 A/C Unit #3 Controls	CE	ANL	4								4		
27	EML remote sample polishing system	CE	ANL	31									31	
28	Machine Shop HAAS SL-30 Lathe	CE	ANL	65									65	
29	Replace Grove 50 ton Mobile Crane	CE	ANL	350									350	
30	HEU Boxline Compact Press and Modification	CE	TRA	630										630
CE Recapitalization Total					0	0	8,442	14,527	13,160	9,676	8,490	9,286	9,378	9,639

Table 5.5 INL Facilities and Infrastructure Cost Projection Spreadsheets

Total

Over Target Recapitalization

($000s)

	Title	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
	Line Item Construction Project (LICP) Total	0	17,000	24,604	35,643	36,288	26,111	29,852	17,306	22,176	19,323
	GPP/Operating Project Total	0	0	14,761	8,791	8,631	24,156	20,509	24,728	2,149	3,768
	Capital Equipment (CE) Total	0	0	8,442	14,527	13,160	9,676	8,490	9,286	9,378	9,639
	D&D	0	0	0	0	0	0	0	1,500	6,000	12,000
Over Target Recapitalization Total		0	17,000	47,807	58,961	58,079	59,944	58,851	52,820	39,703	44,730

Table 5.6 INL Facilities and Infrastructure Cost Projection Spreadsheets

Infrastructure Revitalization

LICP/GPP/CE Projects

($000s)

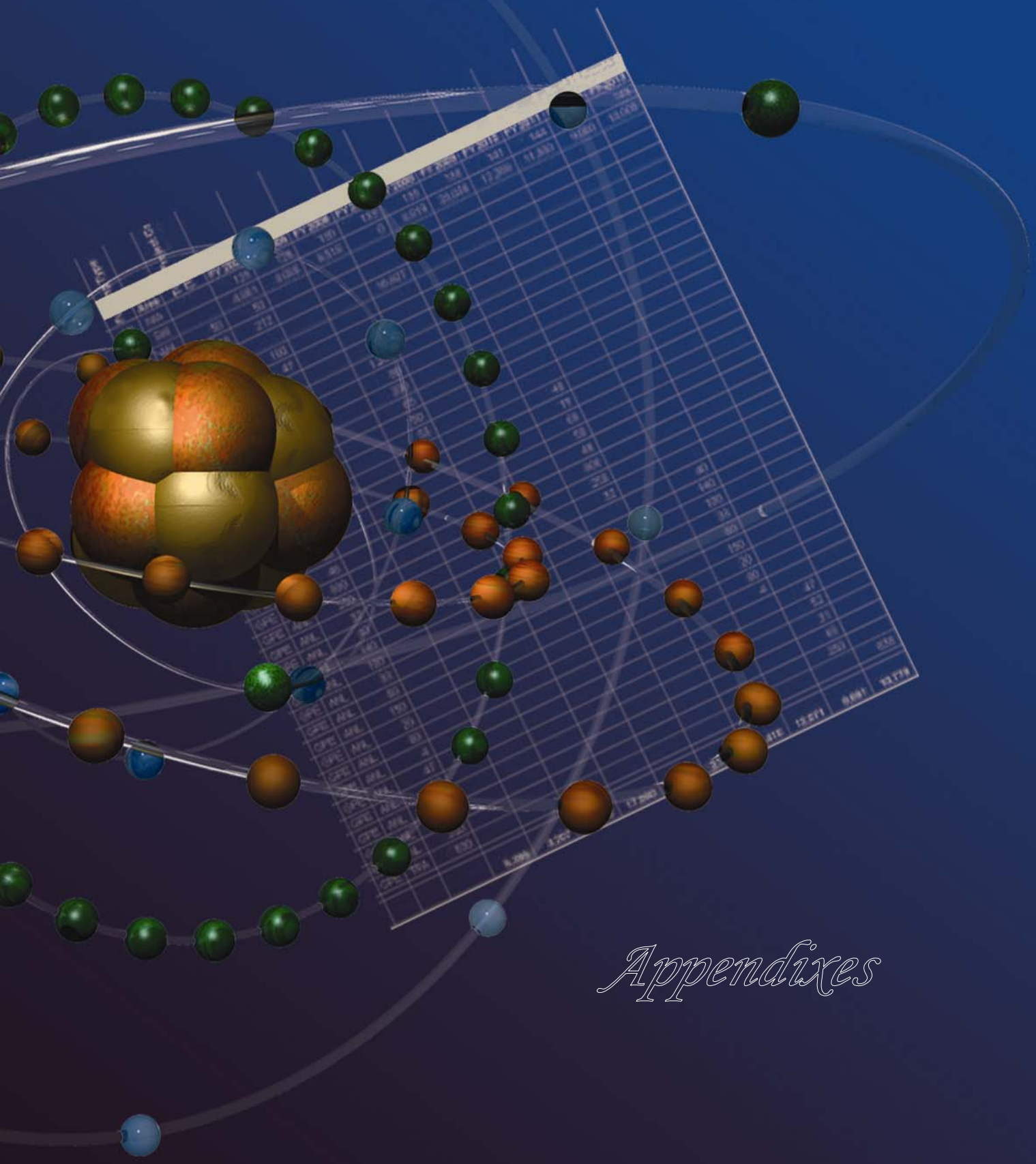
Priority	Project Name	Funding Type	Area	Total Project Cost (TPC)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
L-1	AFC Engineering Scale Demonstration (Cold)	LICP	TBD	42,000			11,000	17,000	14,000					
L-2	Next Generation Nuclear Plant	LICP	TBD	1,096,900			41,100	61,500	81,400	114,500	95,900	141,700	127,000	95,000
L-3	ATR Fast Flux Booster	LICP	TBD	6,003		1,000	1,000	4,003						
L-4	ATR Gas Test Loop	LICP	TBD	20,000		1,500	3,500	5,000	5,000	5,000				
L-5	Space Nuclear Propulsion Ground Test Facility	LICP	TBD	77,200			2,900	7,400	7,600	14,600	22,000	22,700		
L-6	ATR Liquid Metal Test Loop	LICP	TBD	29,000			2,000	10,000	10,000	7,000				
L-7	ATR Fast Flux Lobe	LICP	TBD	64,000			2,000	2,000	10,000	20,000	30,000			
L-8	New Research Reactor	LICP	TBD	405,000			2,000	8,000	20,000	50,000	70,000	80,000	85,000	90,000
L-9	Hydrogen Technology Development Facility	LICP	TBD	72,500			9,000	16,500	44,500	2,500				
L-10	Advanced Computational Research Facility	LICP	TBD	40,000			10,000	15,000	15,000					
L-11	INL Secure Facility	LICP	IF	60,000			5,000	30,000	25,000					
L-12	Advanced Nuclear Simulation Facility	LICP	TBD	20,000			2,000	8,000	10,000					
L-13	Bio Level 3 Laboratory	LICP	TBD	6,000			6,000							
L-14	ATR Super Critical Water Reactor Test Loop	LICP	TBD	17,400			2,500	5,000	5,000	4,900				
L-15	ATR New Hot Cell Facility	LICP	TBD	40,000			10,000	10,000	10,000	10,000				
L-16	ATR Isotope Hydraulic Injection and Retrieval System	LICP	TRA	6,000					6,000					
L-17	Remote Analytical Laboratory Expansion (RAL)	LICP	TBD	21,000					3,000	9,000	9,000			
L-18	Thermal Hydraulic Loop Test Facility	LICP	ANL	30,000									30,000	
L-19	Thermal Spectrum Criticality Facility	LICP	ANL	50,000										50,000
	LICP Revitalization Subtotal				0	2,500	110,000	199,403	266,500	237,500	226,900	244,400	242,000	235,000
G-1	System Analysis Facility (SAF) Addition	GPP	IF	4,462			4,462							
G-2	IF-638 Physics Lab Addition	GPP	IF	3,285			3,285							
G-3	PER-768 Water Tank Upgrade	GPP	PBF	250			250							
G-4	PBF-632 HVAC Upgrade	GPP	PBF	200			200							
	GPP Revitalization Subtotal				0	0	8,197	0	0	0	0	0	0	0
CE-1	Enhanced TRA Hot Cells Equipment	CE	TRA	13,000			13,000							
	CE Revitalization Subtotal				0	0	13,000	0	0	0	0	0	0	0
LICP/GPP/CE Revitalization Total					0	2,500	131,197	199,403	266,500	237,500	226,900	244,400	242,000	235,000

Table 5.7 INL Facilities and Infrastructure Cost Projection Spreadsheets

Safeguards and Security Projects

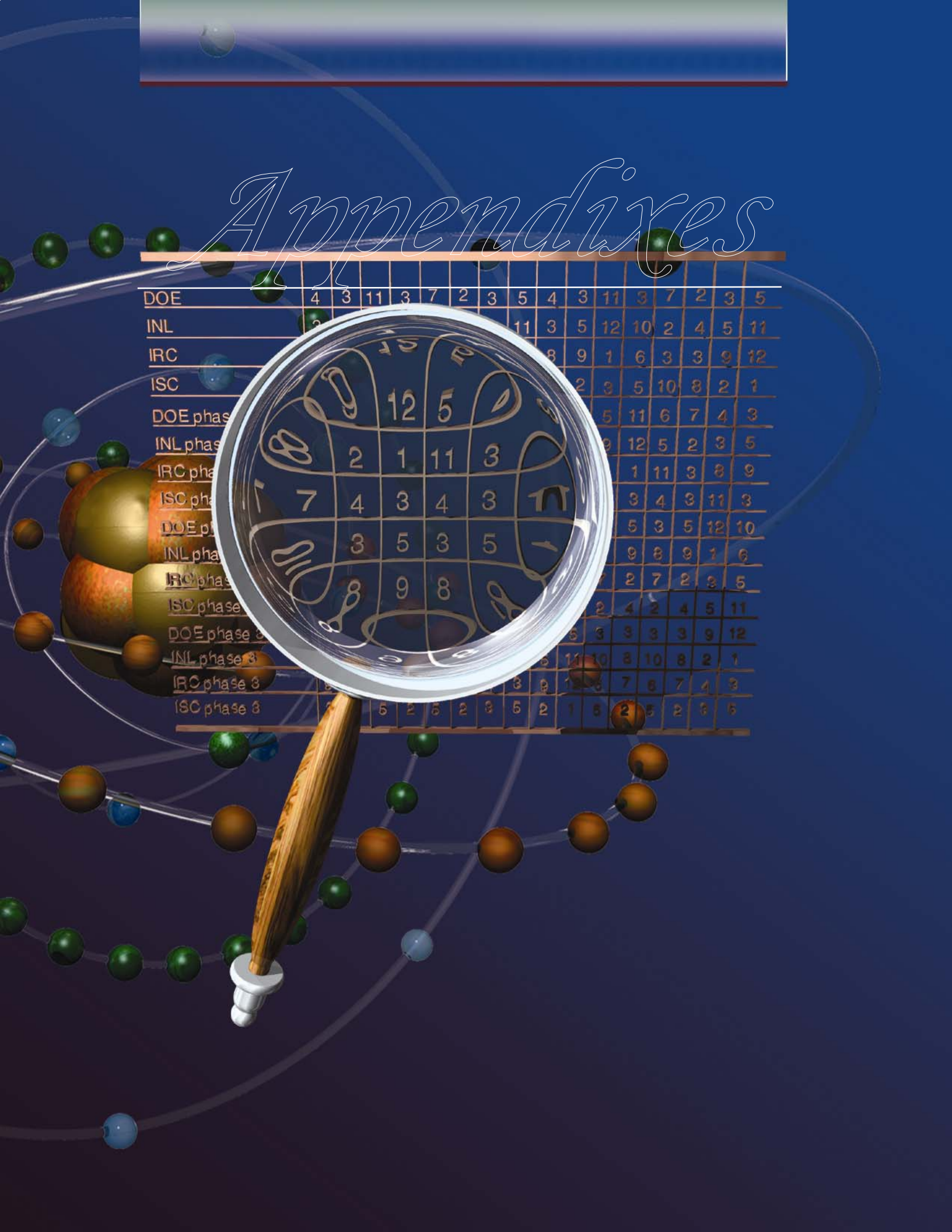
($000s)

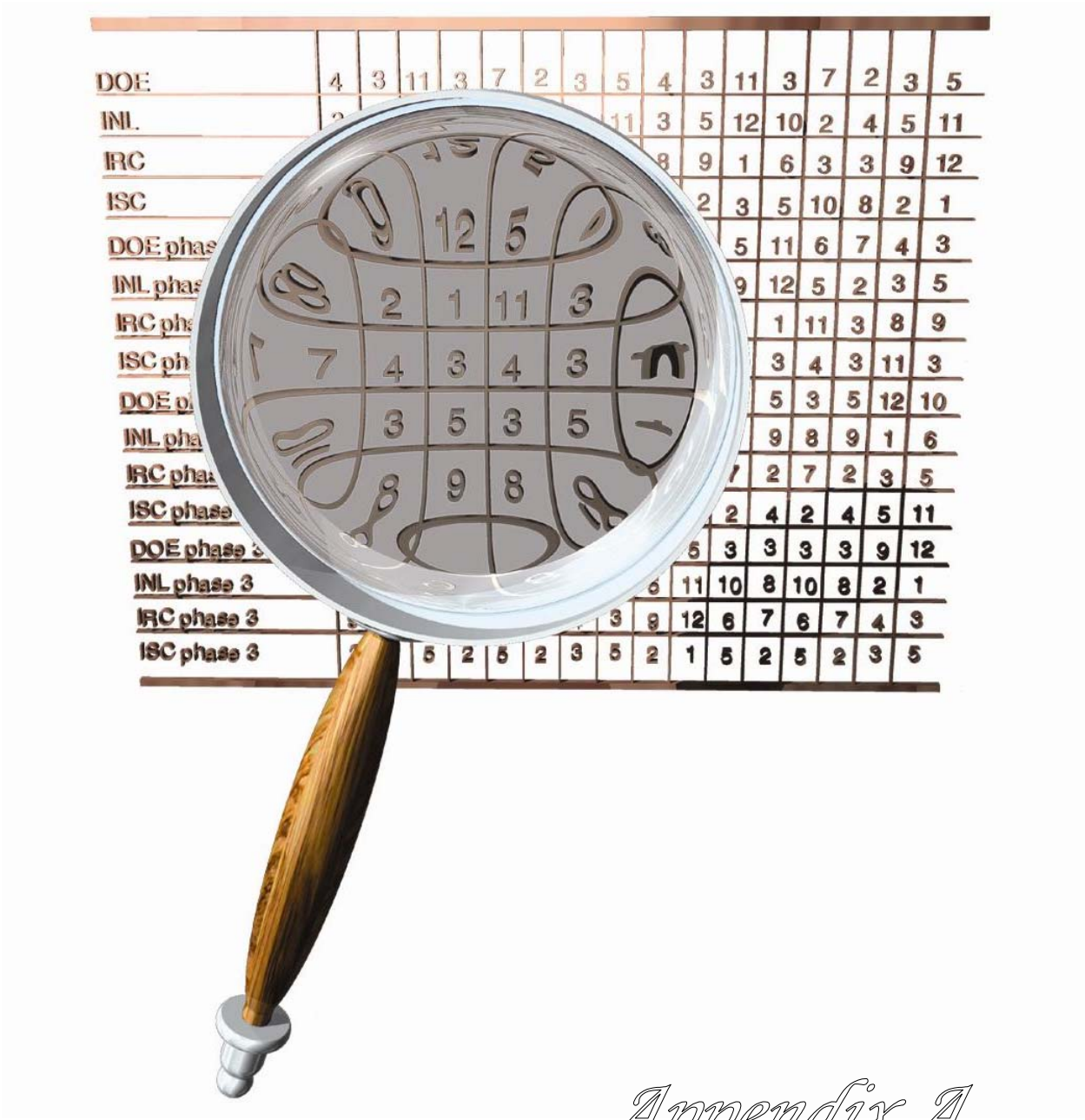
Priority	Project Name	Funding Type	Area	Total Project Cost (TPC)	FY 2004	FY 2005	FY 2006	FY 2007	FY 2008	FY 2009	FY 2010	FY 2011	FY 2012	FY 2013
1	ATR Security Upgrades	GPP	TRA	2,784	2,150									
2	CFA/IFA Security Upgrade	GPP	CFA/IF	4,135	883	3,130	122							
3	Consolidated Safeguards and Security Support Facility	GPP	ANL	2,400	600	1,800								
4	TRA Security Upgrade	GPP	TRA	2,278		2,278								
5	INTEC Security Upgrade	GPP	INTEC	4,691		4,691								
6	INEEL Delta Barrier Upgrade	GPP	SW	700			700							
7	Argus Field Panel Upgrades	GPP	SW	1,225			1,225							
Safeguards and Security Total					3,633	11,899	2,047	0	0	0	0	0	0	0



Appendixes

Appendixes





Appendix A

Appendix A

Program/(Sponsor)	Activity	Facility/Infrastructure Needs	Need Date[a]	Infrastructure Impact
- **Advanced Nuclear Energy Technologies**				
Generation IV Reactors (DOE-NE)	1. Gas Cooled Reactor Fuel and Materials Testing	- Advanced Test Reactor high temperature gas loop for fuel and materials testing - Advanced Test Reactor hot cell equipment upgrades for post-irradiation examination - Advanced Test Reactor Integral Hot Cell or non-public road to Argonne National Laboratory-West required for increased volume in post-irradiation examination	2007 2004 2010	Support infrastructure in place; new loops will be required. Will evaluate new hot cell at the Advanced Test Reactor and new road between the Test Reactor Area and Argonne National Laboratory–West.
	2. Supercritical Water Reactor Fuel and Materials Testing	- Advanced Test Reactor supercritical water loop for fuel and materials testing - Advanced Test Reactor hot cell equipment upgrades for post-irradiation examination - Advanced Test Reactor Integral Hot Cell or non-public road to Argonne National Laboratory-West required for increased volume in post-irradiation examination	2009 2004 2010	Support infrastructure in place; new loops will be required. Will evaluate new hot cell at the Test Reactor Area and new road between the Test Reactor Area and Argonne National Laboratory–West.
	3. Liquid Metal Reactor Fuel and Materials Testing	- Advanced Test Reactor liquid metal loop for fuel and materials testing - Advanced Test Reactor hot cell equipment upgrades for post-irradiation examination - Advanced Test Reactor Integral Hot Cell or non-public road to Argonne National Laboratory-West required for increased volume in post-irradiation examination	2007 2004 2010	Support infrastructure in place; new loops will be required. Will evaluate new hot cell at the Test Reactor Area and new road between the Test Reactor Area and Argonne National Laboratory–West.
	4. Generation IV Advanced Reactor Research and Development	- Laboratory space for conducting needed research and development including Consolidated Laboratory Facility, Fuel Manufacturing Facility, Transient Reactor Test Facility, Zero Power Physics Reactor, Electron Microscopy Laboratory, Remote Analytical Laboratory, Engineering Development Laboratory, Idaho National Laboratory (INL) Engineering Demonstration Facility, INL Research Center, Hot Fuel Examination Facility	2005 for all but Consolidated Laboratory Facility 2006 for Consolidated Laboratory Facility	Facility upgrades required to support programs. Information on Consolidated Laboratory Facility provided later in this table (see number 33).

Program/(Sponsor)	Activity	Facility/Infrastructure Needs	Need Date[a]	Infrastructure Impact
Generation IV Reactors (DOE-NE)	5. Next Generation Nuclear Plant	- Very High Temperature Reactor and new supporting facilities and infrastructure	2015	New infrastructure to be included in project budget. Support infrastructure (e.g., utilities, roads) will follow project development, and planning will be more fully developed in the future revisions of this document.
	6. Non-Nuclear Hydrogen Pilot Plant	- New facility to house non-nuclear pilot scale hydrogen production demonstrations including supporting staff and infrastructure. (This facility will be a part of the Hydrogen Technology Development Facility built for nuclear demonstrations.) Existing facilities at INL Research Center and INL Engineering Demonstration Facility needed for small scale testing.	2008	New infrastructure included in nuclear facility. Support infrastructure (e.g., utilities, roads) will follow project development, and planning will be more fully developed in the future revisions of this document.
	7. Nuclear Hydrogen Engineering Demonstration Facility	- New Hydrogen Technology Development Facility to support a nuclear, engineering scale plant, supporting staff, and infrastructure	2015	New infrastructure to be included in project budget. Support infrastructure (e.g., utilities, roads) will follow project development, and planning will be more fully developed in the future revisions of this document.
	8. New Research Reactor	- Advanced Test Reactor Fast Flux Booster for initial fuel and materials testing - Advanced Test Reactor Fast Flux Lobe for increased volume fuel and materials testing - New Research Reactor for improved fuel and materials testing and systems testing and supporting infrastructure	2006 2008 2012	New infrastructure to be included in project budget. Support infrastructure (e.g., utilities, roads) will follow project development, and planning will be more fully developed in the future revisions of this document.
	9. Advanced Nuclear Simulation Facility	- New facility and supporting infrastructure to house a nuclear reactor simulator	2007	New infrastructure to be included in project budget. Support infrastructure (e.g., utilities, roads) will follow project development, and planning will be more fully developed in the next revision of this document.
Advanced Fuel Cycle Research and Development	10. Advanced Fuel Cycle Development	- Existing Advanced Test Reactor irradiation capabilities	2004	Infrastructure in place.
	11. Advanced Fuel Cycle Spent Fuel Treatment Activities	- Remote Analytical Laboratory, Fuel Conditioning Facility, Hot Fuel Examination Facility, Analytical Chemistry Laboratory, and supporting infrastructure for Advanced Fuel Cycle engineering-scale demonstration	2007	Remote Analytical Laboratory upgrade required. Argonne National Laboratory–West infrastructure in place.

Program/(Sponsor)	Activity	Facility/Infrastructure Needs	Need Date[a]	Infrastructure Impact
Advanced Fuel Cycle Fuel Processing Research and Development	12. Advanced Fuel Cycle Fuel Development and Treatment	- Existing Argonne National Laboratory-West hot laboratories and hot cells (Argonne National Laboratory-West Analytical Chemistry Laboratory, Electron Microscopy Laboratory, Fuel Conditioning Facility, Hot Fuel Examination Facility)	2004–2013	Infrastructure in place.
- **Center for National Security Technology**				
National Security – Multi-program (Multi-program)	13. INL Secure Facility	- New multi-program secure/classified facility with office space, laboratories conference rooms, and supporting infrastructure	2008	Integration of this infrastructure with other potential programmatic needs.
Critical Infrastructure Assurance Initiative (DOE-OEA, DoD, DHS)	14. Test Bed Programs for Supervisory Control and Data Acquisition (SCADA), Wireless Communication, Cyber Security, Physical Security	- Existing site facilities at Power Burst Facility, (PBF-609, 612, 622, 632, 641), and at Central Facilities Area; in town at the INL Supercomputing Center and the Willow Creek Building, will support the four Test Beds being developed.	2004	Any new infrastructure to be included in project budget. Support infrastructure (e.g., utilities, roads) will follow project development, and planning will be more fully developed in the next revision of this document.
Nonproliferation/ Counter-proliferation Program (DOE, DHS, DoD)	15. Nonproliferation/ Counterproliferation	- New Level 3 Biological Sciences Laboratory with office space and highly confined laboratory space and supporting infrastructure	2006	New infrastructure to be included in project budget. Support infrastructure (e.g., utilities, roads) will follow project development, and planning will be more fully developed in the next revision of this document.
	16. Materials Detection Response Technology	- Existing site facilities at Power Burst Facility, (PBF-613, 619, 623), and secure laboratory space in a multiprogram facility.	TBD	New infrastructure to be included in project budget. Support infrastructure (e.g., utilities, roads) will follow project development, and planning will be more fully developed in the next revision of this document.
	17. Nuclear Materials Detection	- Existing site facilities at Power Burst Facility, (PBF-609, 612, 622)	2004	Improvements to existing facilities will be made with programmatic funds. New or enhanced existing facility required to house accelerator.

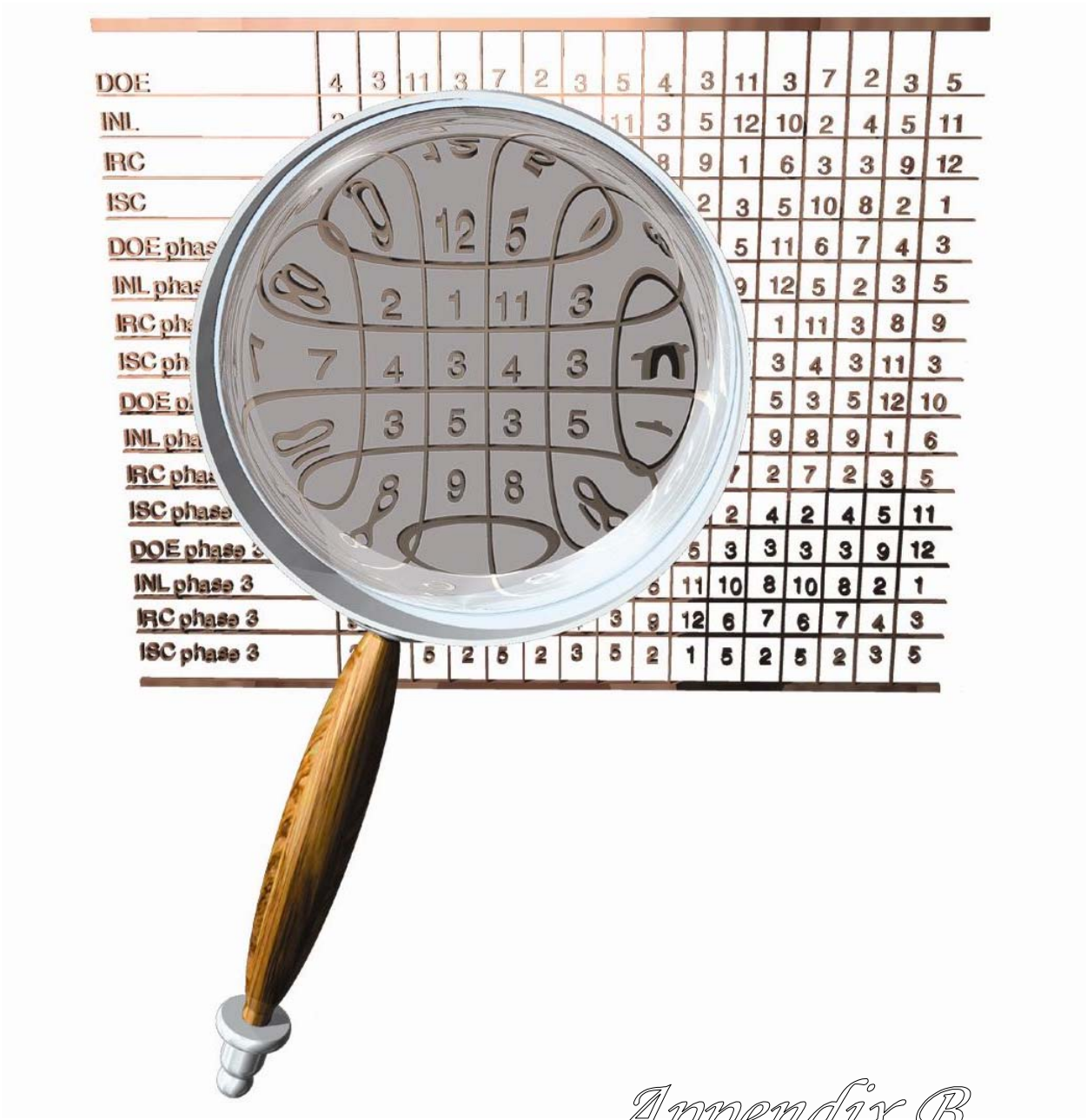
Program/(Sponsor)	Activity	Facility/Infrastructure Needs	Need Date[a]	Infrastructure Impact
Intelligence Community Support	18. Intelligence Support	- In addition to existing Systems Analysis Facility (SAF) space, an addition to SAF is needed. Additional classified office, conference, and laboratory space in existing facilities such as Central Facilities Area-608, National Security Laboratory.	2006	New infrastructure to be included in project budget. Planning will be more fully developed in the next revision of this document.
Combat Support Systems/ Technologies (DoD)	19. Combat Support	- Additional secure office space, laboratories, and prototype demonstration facilities in existing facilities, which could include Integrated Defense Systems, North Holmes Laboratory, North Boulevard Annex, North Yellowstone Complex, Specific Manufacturing Capability Complex. In the future, this work will be consolidated at the new National Security – Multi-program facility.	2008	New infrastructure to be included in project budget. Support infrastructure (e.g., utilities, roads) will follow project development, and planning will be more fully developed in the next revision of this document
Provide Advanced Technology Services and Support				
Support the Naval Nuclear Propulsion Program and provide irradiation testing (DOE-NE)	20. Advanced Test Reactor	- Advanced Test Reactor and support systems will be upgraded to ensure continued capabilities to support the Naval Nuclear Propulsion Program.	2004	Recapitalization upgrades to the Advanced Test Reactor are needed.
Space Nuclear Power Development (DoD, DOE-NE)	21. Advanced Radioisotope Power System	- Zero Power Physics Reactor complex for RPS assembly and storage	2004 - 2005	Zero Power Physics Reactor upgrade required. Will explore other infrastructure support.
	22. Pu-238 Production	- Advanced Test Reactor loop irradiation capabilities	2006	Additional safeguards and security required.
Nuclear Space Initiative (NASA)	23. Testing for Space Nuclear Power Development	- Modify existing facilities at Test Area North or Argonne National Laboratory-West (EBR-II containment) and supporting infrastructure	2006	New infrastructure to be included in project budget. Support infrastructure (e.g., utilities, roads) will follow project development, and planning will be more fully developed in the next revision of this document.
Multi-Program Support	24. Advanced Test Reactor	- New facility to consolidate administrative and engineering functions at the Test Reactor Area	CD-0 2004 CD-4 TBD	Integrate this infrastructure with other potential programmatic needs.
- **Conduct Basic Science Research in Support of Key DOE Missions**				
Subsurface Science Initiative (Multi-program)	25. Subsurface Geosciences Laboratory	- New facility with office and laboratory space to conduct mesoscale (pilot scale) geoscience experiments	2010	Integrate with other program needs in Idaho Falls Technology Center.

Program/(Sponsor)	Activity	Facility/Infrastructure Needs	Need Date[a]	Infrastructure Impact
Basic Sciences (Multi-Program)	26. Basic Energy and Nuclear Program Support	- Additional wet chemistry and materials laboratory space at INEEL Research Center (IRC) or at the new Consolidated Laboratory	2006	Integrate with other program needs in Idaho Falls Technology Center.
Yucca Mountain Support (DOE-OCRWM)	27. Waste Package Handling, Packaging, and Closure	- Large facility with crane to develop full-size systems mockups and perform integrated systems demonstrations for waste package handling	2005	Infrastructure in place.
Intelligent Systems Initiative (Multi-program)	28. Robotics Laboratory Space	- Additional space for robotics development	2006	Integrate with other program needs in Center for Science and Technology.
Fossil Energy, Energy Efficiency and Renewable Energy (FE, EE)	29. Hydrogen	- Additional laboratory and prototype demonstration facilities capable of handling hydrogen	2008	Integrate with other program needs in Center for Science and Technology.
	30. FreedomCar, 21st Century truck and heavy vehicle demonstration	- Addition to the Energy Storage Laboratory (IRC-605)	2005	Infrastructure upgrade planned.
	31. Clean Coal[b]	- Additional large-scale test demonstration facilities adjacent to the coal fired steam plant - Analytical laboratory, cryogenic temperatures (< -100 °F) and high pressures (>1,000 psi)	2005	New infrastructure to be included in project budget. Support infrastructure (e.g., utilities, roads) will follow project development, and planning will be more fully developed in the next revision of this document.
	32. Advanced Materials and Intelligent Systems in Support of Transportation	- Dedicated section of existing roadway at INL site	2005	Infrastructure in place
Multi-Program General	33. Multiple Basic Science, Nuclear and other Energy, and other Program activities	- New multi-program Consolidated Laboratory Facility to support many of the basic science and energy program needs for office, laboratory, prototype demonstration and supporting space	2006	Integrate with other program needs in Idaho Falls Technology Center.
Multi-Program General	34. Multiple Basic Science, Nuclear Energy, and National Security Programs	- New Radiological and Environmental Science Laboratory. Includes specialized laboratory space and office space	CD-0 2004 CD-4 2009	Infrastructure upgrade planned.

Program/(Sponsor)	Activity	Facility/Infrastructure Needs	Need Date[a]	Infrastructure Impact
- **Key Technologies for the Complex of the Future**				
Key Future Technologies (Multi-program)	35. High Performance Computing	- New Advanced Computational Research facility with space for advanced computers, visualization equipment, electronic storage media plus office space and required infrastructure	2008	Infrastructure planning in place for early phase equipment.
	36. Electronic Connectivity	- New connectivity infrastructure through SIINET	2008	Infrastructure planning in place for early phase equipment.
	37. Laboratory Equipment	- Upgrade laboratory equipment to provide up-to-date capabilities	2005	Planning process will accommodate.

a. Need date is based on the programmatic needs. Constraints resulting from funding delays or from DOE O 413.3 may slip facility completion beyond these dates.

b. Project is dependent upon third party use of coal-fired power plant.



Appendix B

Appendix B

Table B-1. Argonne National Laboratory-West Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013.

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total K$
									Type	Year	$K	
Operating Buildings												
ANL-1T-00481	Suite 180 Office Space	240	Office	55	-	-	Good	Leased Facility	-	-	-	-
ANL-701	Security Building	5,833	Service	22	-	-	Good	-	-	-	-	-
ANL-702	Contaminated Laundry Building	448	Service	21	-	-	Good	-	-	-	-	-
ANL-703	Sodium Storage Building	5,000	Storage	18	-	-	Good	-	-	-	-	-
ANL-704	Fuel Mfg Facility	7,828	Process	17	-	$66	Good	Fuel Fabrication Facility Upgrades	-	2010	$8,000	-
								Evaluate FMF Oxygen Monitoring System	-	2012	$66	$8,066
ANL-706	Construction Shop/Storage/Office	6,000	Storage	17	-	-	Good	-	-	-	-	-
ANL-710	Engineering Office Bldg.	12,000	Office	12	-	$70	Good	Building Air Intake Modification	H	2011	$70	$70
ANL-713	Modular Office Bldg T-13	10,752	Office	25	-	-	Good	-	-	-	-	-
ANL-714	Modular Office Bldg T-12	6,048	Office	26	-	-	Good	-	-	-	-	-
ANL-715	Modular Office Bldg. T-15	2,688	Office	23	-	-	Good	-	-	-	-	-
ANL-716	Modular Office Bldg. T-16a	1,660	Office	13	-	-	Good	-	-	-	-	-
ANL-717	Modular Off Bldg T-2 & T-2A	11,420	Office	18	-	-	Good	-	-	-	-	-
ANL-718	Modular Off Bldg T-3	7,120	Office	18	-	-	Good	-	-	-	-	-
ANL-719	S.I. Post	240	Service	15	-	-	Good	-	-	-	-	-
ANL-720	TREAT Reactor Bldg.	23,940	Reactor	44	-	$737	Poor	Transient Reactor Test Facility Restart, Start FY 2010, Complete by 2013	-	2010	$20,800	
								Upgrade TREAT Automatic Reactor Control System Utility Node	E	2011	$450	
								Replace TREAT Reactor Trip System (RTS) High Voltage Power Supplies	E	2012	$75	
								Replace Oil Furnace with Electric Heat	H	2013	$45	
								Replace PDPE-2 Panel Main Panel Switch	E	2013	$10	

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-1. Argonne National Laboratory-West Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total K$
									Type	Year	$K	
								Replace HALON System with Wet Sprinkler System	M	2013	$20	
								Install Test Connections on RTS/ARCS Hardware	-	2013	$22	$21,422
ANL-721	TREAT Control Bldg.	5,857	Service	45	-	-	Good	Refurbish TREAT Control Room	A	2011	$100	$100
ANL-751	Reentry Building	626	Service	42	-	-	Good	-	-	-	-	-
ANL-752	Laboratory & Office Bldg.	83,485	Office	41	-	$519	Good	Analytical Laboratory Suspect Waste Tanks Modification	M	2010	$440	$440
								D Wing Basement Ventilation Mod	H	2013	$360	
ANL-753	Plant Services Bldg.	24,048	Service	42	-	-	Good	-	-	-	-	-
ANL-759	Sodium Storage Building	2,683	Storage	42	-	-	Good	-	-	-	-	-
ANL-765	Fuel Conditioning Facility	48,435	Process	40	-	$4,795	Fair	FCF Stack Monitor System Upgrade	E	2009	$600	
								Refurbish hot cell rad shielding windows at FCF	M	2010	$2,982	
								RLWS Cerium Ion Exchanger Filter	M	2011	$5	
								FCF Criticality Monitoring System Evaluation	-	2011	$26	
								Load Coord Study, Div I/II EDG Output Breakers	-	2011	$17	
								Decon Spray Chamber Sump Pump	M	2011	$10	
								Relocate RLWS Criticality Mon to outside RLWS	E	2012	$28	
								Upgrade FCF Moisture Monitor Analyzers	E	2012	$22	
								FCF Floor Load Structure Analysis for Lift Trucks	-	2012	$16	
								Replace FCF North Basement Air Conditioner	H	2013	$20	
								Replace Elevator	A	2013	$43	
								Remove Equip-Sys from IBC Wash Sta & RWLS	M	2013	$50	

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-1. Argonne National Laboratory-West Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total K$
									Type	Year	$K	
								Reduce Sound Levels Near Exhaust Fans	A	2013	$18	
								Disconnect Switches for FCF ACU1 and 2	E	2013	$3	
								Additional FCF Electrical Bus Duct	E	2013	$159	
								Combine OCS500C and 500G	-	2013	$40	
								Alarm Indication for SLC Power Supplies	E	2013	$25	
								Rapid Insertion Port for Schofields Hole	M	2013	$49	
								Rmv Halon Syst from Cabinets in FCF Control Rm	M	2013	$22	$4,135
ANL-765A	FCF Office Annex	6,460	Office	40	-	$50	Fair	Upgrade Building Ventilation System	H	2013	$36	$36
ANL-769	Dangerous Mat Stor Bldg	1,100	Storage	40	-	-	Good	-	-	-	-	
ANL-770B	Sodium Comp Stor Bldg	258	Storage	41	-	-	Good	-	-	-	-	-
ANL-770C	Nuclear Calibration Lab	240	Laboratory	40	-	-	Good	-	-	-	-	-
ANL-772	EBR-II Engineering Lab	3,453	Laboratory	37	-	-	Good	West End Expansion	A	2012	$300	
								Heated Storage	A	2013	$180	
								Air Conditioning	H	2013	$125	$605
ANL-774	ZPPR Support Wing	29,252	Office	36	-	$87	Good	-	-	-	-	-
ANL-775	ZPPR Vault-Wkrm Eq Rm	4,964	Laboratory	35	-	-	Good	Internet Service to the ZPPR Workroom	E	2013	$3	$3
ANL-776	ZPPR Reactor Cell	4,250	Reactor	35	-	$61	Good	Zero Power Physics Reactor Restart, Start FY 2012 (TPC $10,000)	-	2012	$7,000	$7,000
ANL-777	ZPPR Equipment Bldg	480	Service	35	-	-	Good	-	-	-	-	-
ANL-780	Laundry Sorting Building	480	Service	37	-	-	Good	-	-	-	-	-
ANL-781	Materials Handling Bldg	26,396	Service	36	-	-	Good	-	-	-	-	-
ANL-782	Machine Shop Bldg	5,500	Service	36	-	-	Good	-	-	-	-	-
ANL-783	Rigging Test Facility	2,400	Storage	35	-	-	Good	-	-	-	-	-
ANL-784	ZPPR Matl Control Bldg	4,906	Laboratory	35	-	-	Good	-	-	-	-	-

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-1. Argonne National Laboratory-West Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total K$
									Type	Year	$K	
ANL-785	Hot Fuel Exam Facility	61,802	Process	29	-	$1,376	Fair	Evaluate Replacement Capacitor to HFEF In-cell Cranes and EMMs	E	2009	$7	
								Upgrade Diesel Generators	E	2011	$250	
								Replace Main Cell Chillers CH101A/B	H	2011	$300	
								Replace NRAD Demineralizer Conductivity Cells	M	2011	$24	
								Replace NRAD NI and Rx Control & Safety Syst		2012	$200	
								Design Replacement Grip Drive Motor for HFEF/FCF EM's	-	2012	$40	
								Redesign Rabbit System Pivot-joint in DSC	-	2012	$51	
								Replace Argon Compressors	M	2013	$200	
								Modify NRS Exhaust Duct Discharge	H	2013	$117	
								Provide Key Switch for 60 KW Diesel Generator	E	2013	$11	
								Replace Gauges on 60 KW Diesel Generator	E	2013	$15	
								Met Loading Box Transfer Lock Purge Syst Mod	M	2013	$20	
								Replace Monorail, North MRG Hoist, HFEF 318	M	2013	$20	
								ALP-7 Cask Spreader Bar	M	2013	$21	$1,276
ANL-787	Fuel Assy & Storage Bldg	6,023	Laboratory	33	-	$17	Good	Vacuum Pump Exhaust Lines	M	2013	$24	$24
ANL-788	EBR-II Maintenance Shop	3,960	Service	48	-	-	Good	-	-	-	-	-
ANL-789	EBR-II Engineering Lab	2,390	Laboratory	44	-	-	Good	-	-	-	-	
ANL-790	Equipment Storage	2,560	Storage	50	-	-	Good	-	-	-	-	-
ANL-791	Instrument & Maint Facility	16,896	Office	31	-	-	Good	-	-	-	-	-
ANL-792	ZPPR Mock-Up Bldg	3,000	Process	30	-	-	Good	-	-	-	-	-
ANL-793	Sodium Comp Maint Shop	4,382	Service	43	-	$19	Good	Upgrade SCMS High Bay Lighting	E	2012	$19	

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-1. Argonne National Laboratory-West Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total K$
									Type	Year	$K	
								Replace SCMS Roll-Up Door	A	2011	$35	$54
ANL-794	Contaminated Equip Stor	5,012	Service	28	-	-	Good	-	-	-	-	-
ANL-796	Metal Stock Control Bldg	4,728	Storage	25	-	-	Good	Install 794 Drum Compactor	-	2011	$5	$5
ANL-798	Rad Liq Waste Tr Fac	7,189	Process	20	-	$35	Good	RLWTF Building Air Conditioning	H	2013	$53	$53
ANL-799	Sodium Processing Facility	3,500	Laboratory	17	-	-	Good	-	-	-	-	-
ANL-TR-20	Trailer Office	720	Office	11	-	-	Good	-	-	-	-	-
ANL-TR-51	SPF Operations Trailer	864	Office		-	-	Good	-	-	-	-	-
Shutdown Buildings												
ANL-766	Sodium Boiler Bldg.	14,959	Laboratory	41	-	-	Good	FIMS Status, Shutdown Pending D&D	-	-	-	-
ANL-767	Reactor Plant	10,307	Reactor	40	-	-	Good	FIMS Status, Shutdown Pending D&D	-	-	-	-
ANL-767A	Experimental Equip Bldg	195	Laboratory	28	-	-	Good	FIMS Status, Shutdown Pending D&D	-	-	-	-
ANL-768	Power Plant	44,905	Laboratory	42	-	$18	Good	FIMS Status, Shutdown Pending D&D	-	-	-	-
ANL-795	Cover Gas Clean-Up System	800	Laboratory	25	-	-	Good	FIMS Status, Shutdown Pending D&D	-	-	-	-
New and Replacement Buildings												
	Remote Treatment Facility (RTF)		Process	-	-	-	-	Start in FY 2005, Complete in FY 2011	New	2005	$86,000	$86,000
	Multiprogram Office Building	40,000	Office	-	-	-	-	Start in FY 2012, Complete in FY 2013	New	2012	$8,000	$8,000
Distribution Systems and Other Projects not related to specific buildings												
	Industrial Waste Pond Remediation	--		-	-	-	-	-	D	2004	$1,526	$1,526
	Replace the 2.4 kV Switchgear BLDG #768 & 754	--		-	-	-	-	-	E	2006	$1,076	$1,076

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-1. Argonne National Laboratory-West Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total K$
									Type	Year	$K	
	Upgrade 13.8 kV Switchgear	--		-	-	-	-	-	E	2006	$1,573	$1,573
	Install Diesel for Deep Well Pump No.1 (2400V)	--		-	-	-	-	-	M	2008	$225	$225
	Site Condensate and Steam Component Replacement Program	--		-	-	-	-	Complete in 2006	M	2009	$1,215	$1,215
	Replace Service Water Pumps & Controls	--		-	-	-	-	-	M	2010	$100	$100
	Site Roof Repair Program	--		-	-	-	-	Complete in 2013	M	2011	$1,901	$1,901
	Repair/replace the concrete sidewalks at ANL-W	--		-	-	-	-	Complete in 2013	-	2011	$500	$500
	Upgrade Cooling Water Filtration	--		-	-	-	-	-	M	2011	$130	$130
	Energy Conservation Program	--		-	-	-	-	Complete in 2012	E,A, H	2012	$50	$50
	Site-wide Road Repair Program	--		-	-	-	-	-	-	2012	$100	$100
	Upgrade Sanitary Waste Pumps & Controls	--		-	-	-	-	-	M	2012	$20	$20
	Upgrade Industrial Waste Pumps & Controls	--		-	-	-	-	-	M	2012	$20	$20
	New Liner For Lift Station Tank	--		-	-	-	-	-	M	2012	$20	$20
	Site-wide Storm Drainage program	--		-	-	-	-	-	-	2013	$50	$50
	Site Cooling Water System Upgrade	--		-	-	-	-	-	M	2013	$12	$12

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-2. Test Reactor Area Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013.

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
Operating Buildings												
TRA-601	Deepwell Pumphouse #1	280	Service	51	2015	$4	Poor	-	-	-	-	-
TRA-602	Deepwell Pumphouse #2	489	Service	51	2010	$2	Very Poor	Will Inactivate by 2010	-	-	-	-
TRA-603	Material Test Reactor Bldg.	45,184	Laboratory	51	2010	$169	Poor	Will Inactivate by 2010	-	-	-	-
TRA-604	MTR Building Wing A	41,744	Laboratory	51	2012	$2,537	Poor	HVAC Project, Deferred, Will Inactivate by 2012	H	2012	$334	$334
TRA-605	Process Water Building	22,040	Process	51	2015	$9	Poor	Control Modifications	M	2009	$2,558	$2,558
TRA-607	Carpenters Shop	2,433	Service	51	2012	$8	Poor	Will Inactivate by 2012	-	-	-	-
TRA-608	Demineralizer Building	4,160	Service	51	2015	$86	Poor	Replace Demin Tanks and Pumps	M	2011	$4,297	$4,297
TRA-609	Compressor Bldg. (Steam Plant)	9,248	Service	51	2015	$520	Poor	-	-	-	-	-
TRA-610	MTR Fan House	3,216	Storage	51	2012	$60	Poor	Will Inactivate by 2012, and Disposition by 2013	D	2013	$497	$497
TRA-614	Office Building/Bunk House	6,200	Office	51	2006	$131	Poor	Will Inactivate by 2008	-	-	-	-
TRA-616	Cafeteria	4,197	Service	51	2006	$132	Poor	Will Inactivate by 2006, and replace	-	-	-	-
TRA-619	Raw Water Pumphouse	2,572	Service	51		$25	Fair	-	-	-	-	-
TRA-620	Office Building	1,888	Office	51	2008	$39	Poor	Will Inactivate by 2008, and Disposition by 2013	D	2011	$90	$90
TRA-621	Nuclear Material Insp. Storage	7,116	Storage	21		$19	Good	HVAC Upgrade Project	H	2011	$3,147	$3,147
TRA-622	Cold Waste Handling Facility	1,338	Process	51	2012	$37	Poor	Will Inactivate by 2012	-	-	-	-
TRA-623	Substation Control Building	1,823	Service	51		$11	Poor	-	-	-	-	-
TRA-625	Maintenance Support Bldg	7,683	Service	22		$35	Good	-	-	-	-	-
TRA-626	Maintenance Storage Building	1,472	Storage	51	2006	$12	Very Poor	Will Inactivate by 2006, and Disposition by 2013	D	2010	$76	$76
TRA-627	Fuel Oil Pumphouse	701	Service	51		$13	Poor	-	-	-	-	-

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-2. Test Reactor Area Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
TRA-628	TRA Office Building #1	13,013	Office	17	2008	$16	Good	Will Inactivate by 2008	-	-	-	-
TRA-629	Gas Cylinder Storage Bldg	710	Service	47			Poor	Will Inactivate by 2010, and Disposition by 2013	D	2011	$44	$44
TRA-632	Hot Cell Building	17,037	Process	51		$18	Fair	Hot Cell Pad Project	S	2008	$258	$258
TRA-633	Diesel Firewater Pumphse	1,063	Service	23		$9	Poor	-	-	-	-	-
TRA-634	ATR Storage Facility	8,400	Storage	21		-	Good	-	-	-	-	-
TRA-635	Material Receiving & Lab Area	22,046	Service	51	2010	$218	Fair	Will Inactivate by 2010, and Disposition by 2013	D	2012	$802	$802
TRA-636	Retention Basn Inlet Smpl	86	Process	22		-	Poor	Will Inactivate by 2005	-	-	-	-
TRA-637	Bunkhouse Trailer	600	Service	25	2008	$3	Good	Will Inactivate by 2008, and Disposition by 2013	D	2009	$0	$0
TRA-638	Training Trailer	2,040	Service	24	2015	$75	Very Poor	-	-	-	-	-
TRA-640	Hazardous Chem Storage Bldg	1,800	Storage	19	2012	$2	Good	Will Inactivate by 2012, and Disposition by 2013	D	2013	$85	$85
TRA-648	ETR Electrical Building	9,785	Service	46	2005	$138	Very Poor	Will Inactivate by 2005, and Disposition by 2013	D	2009	$641	$641
TRA-649	MTR Office Bldg Wing C	6,852	Office	37	2008	$443	Poor	Will Inactivate by 2008, and Disposition by 2013	D	2010	$255	$255
TRA-650	Deepwell Pumphouse #3	405	Service	40		$2	Poor	-	-	-	-	-
TRA-651	Maintenance/Storage Bldg.	672	Storage	43	2010	$5	Very Poor	Will Inactivate by 2010, and Disposition by 2013	D	2011	$44	$44
TRA-652	MTR Office Bldg Wing B	13,407	Office	37	2008	$147	Poor	Will Inactivate by 2008, and Disposition by 2013	D	2010	$497	$497
TRA-653	Maintenance Building	29,661	Service	46	2013	$839	Poor	HVAC Proj, Deferred, Inactivate 2013, replace	H	2011	$852	$852
TRA-654	General Lab/High Bay (ETRC)	2,400	Laboratory	44	2012	$31	Fair	Will Inactivate by 2012, and Disposition by 2013	D	2013	$228	$228
TRA-656	Maintenance Storage Bldg	850	Storage	44		-	Very Poor	Will Inactivate by 2006, and Disposition by 2013	D	2010	$53	$53

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-2. Test Reactor Area Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
TRA-657	MTR Plug Storage Building	5,000	Storage	51	2012	$7	Fair	Will Inactivate by 2012, and Disposition by 2013	D	2013	$290	$290
TRA-658	TRA Access Control Facility	4,768	Service	17		$12	Good	-	-	-	-	-
TRA-661	Radiochemistry Laboratories	7,760	Laboratory	41	2011	$19	Fair	Will Inactivate by 2011, and Disposition by 2013	D	2012	$1,592	$1,592
TRA-662	Receiving & Storage Bldg	14,830	Storage	42		$8	Fair	-	-	-	-	-
TRA-665	Storage Building	776	Storage	41		$31	Very Poor	Will Inactivate by 2010, and Disposition by 2013	D	2011	$74	$74
TRA-666	Hydraulic Test Fac. (STAR)	2,400	Laboratory	40		$4	Good	-	-	-	-	-
TRA-666A	Tritium Lab	1,920	Laboratory	40		$2	Fair	-	-	-	-	-
TRA-667	Dispensary & Office Building	4,168	Office	39	2008	$6	Fair	Will Inactivate by 2008	-	-	-	-
TRA-668	MTR North Wing Extension	3,596	Laboratory	47	2010	$42	Fair	Will Inactivate by 2010, and Disposition by 2013	D	2011	$315	$315
TRA-670	ATR Reactor Building	140,694	Reactor	37		$1,383	Fair	40-Ton Crane Upgrade	M	2004	$1,824	-
								Control System Upgrade	E	2005	$1,518	-
								Switchgear and MCC Upgrade	E	2006	$4,627	-
								Replace 13.8kv Transformers	E	2007	$1,415	
								M-10 Safety Related Power Supply Upgrade	E	2008	$2,654	-
								RMS Upgrade	E	2009	$1,231	-
								Process DCS	E	2009	$3,982	-
								Console Display System (CDS) Upgrade	E	2009	$4,443	-
								PPS and Nuclear Instrumentation Upgrades, Start in FY 2010, TPC $16,829K	E	2010	$12,829	-
								Reactor Floor Particle Control Upgrade	M	2010	$2,563	-
								Diesel Generator Replacement	E	2010	$4,883	-

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Table B-2. Test Reactor Area Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
								Roof Replacement	R	2012	$648	-
								Emerg Clg Pump, Start FY 2013 (TPC $6936K)	M	2013	$210	-
								Demin Wtr Inj Sys, Start FY 2013 (TPC $6636K))	M	2013	$210	-
								Canal Expansion, Start FY 2013 (TPC $8347K)	S,M, P	2013	$220	$43,257
TRA-671	ATR Cooling Tower Pumphouse	2,500	Service	38		$8	Fair	Chemical Off Loading Station	S	2007	$288	$288
TRA-672	Deepwell Pumphouse #4	321	Service	40	2027	$2	Poor	-	-	-	-	-
TRA-673	Storage Bldg	1,200	Storage	32		$19	Very Poor	Will Inactivate by 2008	-	-	-	-
TRA-674	Diesel Generator Bldg	704	Service	17	2015	$2	Good	-	-	-	-	-
TRA-676	Waste Heat Recovery Bldg	2,107	Service	14		$5	Good	-	-	-	-	-
TRA-678	TRA Office Building #2	4,968	Office	12	2012	$7	Good	Will Inactivate by 2012	-	-	-	-
TRA-679	Nuclear Training Facility	9,600	Service	12		$8	Good	-	-	-	-	-
TRA-680	Emergency Command Center	4,960	Service	12		$12	Good	-	-	-	-	-
TRA-681	Temporary Accumulation Area #1	120	Storage	8	2012	-	Good	Will Inactivate by 2012, and Disposition by 2013	D	2013	$5	$5
TRA-682	Temporary Accumulation Area #2	120	Storage	8	2012	-	Good	Will Inactivate by 2012, and Disposition by 2013	D	2013	$5	$5
TRA-683	Temporary Accumulation Area #3	120	Storage	8	2012	-	Good	Will Inactivate by 2012, and Disposition by 2013	D	2013	$5	$5
TRA-684	Temporary Accumulation Area #4	120	Storage	8	2012	-	Good	Will Inactivate by 2012, and Disposition by 2013	D	2013	$5	$5
TRA-685	Temporary Accumulation Area #5	120	Storage	8	2012	-	Good	Will Inactivate by 2012, and Disposition by 2013	D	2013	$5	$5
TRA-686	Temporary Accumulation Area #6	120	Storage	8	2012	-	Good	Will Inactivate by 2012, and Disposition by 2013	D	2013	$5	$5
TRA-687	Gas Bottle Storage Facility	1,000	Storage	8	2012	$1	Good	Will Inactivate by 2012	-	-	-	-

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Table B-2. Test Reactor Area Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
TRA-688	Firewater Pumphouse	2,500	Service	3		-	Good	-	-	-	-	-
TRA-689	Radiological Waste Building	4,230	Process	6	2027	-	Good	-	-	-	-	-
TRA-690	Storage Building	80	Storage	10	2002	-	Good	Will Inactivate by 2010	-	-	-	-
TRA-691	East Manhole Shelter	25	Service	7		-	Good	-	-	-	-	-
TRA-692	West Manhole Shelter	25	Service	7		-	Good	-	-	-	-	-
TRA-694	Retention Pond Sample House	120	Service	2		-	Good	-	-	-	-	-
Operational Standby Buildings												
TRA-641	Gamma Building	2,365	Laboratory	48	2008	$31	Poor	Operational Standby, Decontamination in Progress, Will Inactivate by 2008, and Disposition by 2013	D	2010	$260	$260
TRA-660	Adv Reactivity Measuremt Facil	2,400	Laboratory	44	2011	$15	Good	Operational Standby, Will Inactivate by 2011, and Disposition by 2013	D	2012	$184	$184
TRA-677	Acid/Caustic Storage Facility	793	Storage	11	2008	-	Poor	Operational Standby, Will Inactivate by 2008	-	-	-	-
Shutdown Buildings												
TRA-669	Cold Storage Building	2,300	Excess	35	2002	-	Very Poor	Shutdown Pending D&D, Will Inactivate by 2003	-	-	-	-
TRA-615	Meteorological Inst Bldg	36	Excess	33	2002	-	Very Poor	Shutdown Pending Transfer, Inactivated	-	-	-	-
TRA-618	Warehouse	14,975	Excess	51	2000	-	Very Poor	Shutdown Pending Transfer, Inactivated	-	-	-	-
TRA-624	Sewage Treatment Building	111	Excess	51	1996	-	Very Poor	Shutdown Pending Transfer, Inactivated	-	-	-	-
TRA-631	Acid Pumphouse	336	Excess	51	1996	-	Very Poor	Shutdown Pending Transfer, Inactivated	-	-	-	-
TRA-647	ETR Office Building	11,793	Excess	46	2002	$81	Very Poor	Shutdown Pending Transfer, Will Inactivate by 2004, and Disposition by 2013	D	2009	$849	$849
TRA-663	Superior Diesel Building	1,120	Excess	46	2002	-	Very Poor	Shutdown Pending Transfer, Inactivated, will Disposition	-	-	-	-
TRA-675	Waste Oil Dumpster Shed	150	Excess	16	1997	-	Very Poor	Shutdown Pending Transfer, Inactivated	-	-	-	-

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Table B-2. Test Reactor Area Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
New and Replacement Buildings												
	Cafeteria	TBD	Service	-	TBD	-	-	-	Repl	2008	$4,591	$4,591
	Administration Building	TBD	Service	-	TBD	-	-	Start in FY 2010, TPC $14,482K	Repl	2010	$3,965	$3,965
	Plant and Inst Air Compressor Bldg	TBD	Service	-	TBD	-	-	-	Repl	2011	$5,724	$5,724
	Warehouse	TBD	Storage	-	TBD	-	-	-	Repl	2012	$2,362	$2,362
	Maintenance Shop	TBD	Service	-	TBD	-	-	Start in FY 2013, TPC $6,214K	Repl	2013	$190	$190
Distribution Systems and Other Projects not related to specific buildings												
	Electrical Upgrade	-	-	-	-	-	-	Start FY 2004, Complete by FY 2005	E	2004	$9,646	$9,646
	Fire and Life Safety Systems	-	-	-	-	-	-	Start FY 2004, Complete by FY 2011	M,E	2004	$4,407	$4,407
	Utility Upgrades	-	-	-	-	-	-	Start FY 2006, Complete by FY 2010	M	2006	$21,460	$21,460
	Perimeter Lighting System	-	-	-	-	-	-	-	E	2008	$1,916	$1,916
	Retention Basin Isolation	-	-	-	-	-	-	-	-	2008	$1,171	$1,171
	Inspect and Repair Elevated Water Tank	-	-	-	-	-	-	-	S	2008	$378	$378
	Potable Water Well System	-	-	-	-	-	-	-	-	2008	$1,279	$1,279
	Plant Lighting	-	-	-	-	-	-	-	E	2010	$554	$554
	Support System Upgrade	-	-	-	-	-	-	Start FY 2011, Complete by FY 2013	M	2011	$18,222	$18,222
	Site Paging System Upgrade	-	-	-	-	-	-	-	E	2011	$1,244	$1,244
	Remote Monitoring System	-	-	-	-	-	-	-	E	2012	$2,562	$2,562
	Interior Roads	-	-	-	-	-	-	-	M	2012	$1,531	$1,531
	Lawn Sprinklers System	-	-	-	-	-	-	-	M	2012	$890	$890
	Stormwater Drainage	-	-	-	-	-	-	-	-	2013	$1,945	$1,945

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Table B-3. Central Facilities Area Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013.

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
Operating Buildings												
CF-1602	Hydrant & Standpipe Facility	96	Service	13	2011	$5	Very Poor	Will Inactivate in 2011	-	-	-	-
CF-1603	Fire Water Pump House	1,785	Service	9	2047	$17	Good	-	-	-	-	-
CF-1605	CFA Waste Water Lab	1,334	Laboratory	8	2045	$6	Good	-	-	-	-	-
CF-1606	CFA Training Facility	4,960	Service	9	2044	$6	Good	-	-	-	-	-
CF-1607	Antifreeze & Oil Dispensing	140	Storage	8	2045	-	Good	-	-	-	-	-
CF-1608	Modular Office	7,056	Office	9	2012	-	Good	Will Inactivate in 2012, and Disposition by 2013	D	2013	$25	$25
CF-1609	DOE Modular Office	5,800	Office	9	2012	$2	Good	Will Inactivate in 2012, and Disposition by 2013	D	2013	$25	$25
CF-1611	CFA Fire Station	29,800	Service	7	2047	$118	Good	-	-	-	-	-
CF-1612	CFA Medical Facility	22,817	Service	7	2047	$8	Good	-	-	-	-	-
CF-1614	Fire Training Facility	7,425	Service	6	2047	$6	Good	-	-	-	-	-
CF-1616	Truck Scale House	121	Service	6	2047	-	Good	-	-	-	-	-
CF-1618	Health Physics Instrument Lab	15,741	Laboratory	1	2047	-	Good	-	-	-	-	-
CF-601	Warehouse	51,596	Storage	53	2022	$107	Fair	Convert From Steam Heating	H	2010	$1,024	-
CF-602	Materials Test Lab & Field Eng	4,295	Laboratory	34	2006	$14	Fair	Will Inactivate in 2006	-	-	-	-
CF-608	Materials Science Support Lab	8,459	Laboratory	19	2047	$36	Good	-	-	-	-	-
CF-609	Security Headquarters	38,797	Service	15	2047	$56	Good	-	-	-	-	-
CF-611	Change House	16	Service	12	2011	-	Fair	Will Inactivate in 2011, and Disposition by 2013	D	2012	$0	$0
CF-612	Office/Three Labs	9,855	Office	20	2012	$14	Fair	Will Inactivate in 2012	-	-	-	-
CF-614	Office Building	8,090	Office	17	2004	$2	Good	Will Inactivate in 2004	-	-	-	-
CF-615	Office Building	9,844	Office	13	2047	$153	Good	HVAC System Upgrades	H	2013	$128	-

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Table B-3. Central Facilities Area Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
CF-616	NOAA Storage	407	Storage	20	2011	$1	Fair	Will Inactivate in 2011	-	-	-	-
CF-619	Utility Building	410	Storage	14	2008	-	Good	Will Inactivate in 2008	-	-	-	-
CF-621	Multicraft Shop #1	10,068	Service	20	2009	$12	Good	Will Inactivate in 2009	-	-	-	-
CF-622	Multicraft Shop #2	10,549	Service	18	2009	$23	Good	Will Inactivate in 2009	-	-	-	-
CF-623	Multicraft Shop #3	11,384	Service	17	2009	$22	Good	Will Inactivate in 2009	-	-	-	-
CF-624	Multicraft Shop #4	8,963	Service	17	2009	$7	Good	Will Inactivate in 2009	-	-	-	-
CF-625	CFA Laboratory Complex	7,533	Laboratory	14	2008	$245	Fair	Will Inactivate in 2008	-	-	-	-
CF-629	Office Building	9,867	Office	24	2008	$22	Good	Will Inactivate in 2008	-	-	-	-
CF-633	Health Physics Instru. Lab	18,596	Laboratory	61	2003	$2,415	Very Poor	Will Inactivate in 2003	-	-	-	-
CF-637	Hazard Chem. Storage	2,230	Storage	60	2011	$3	Good	Will Inactivate in 2011	-	-	-	-
CF-638	Dosimetry Calibration Lab	1,030	Laboratory	60	2010	$12	Fair	Will Inactivate in 2010	-	-	-	-
CF-642	Pump House (CFA Well No. 2)	151	Service	54	2010	$15	Good	-	-	-	-	-
CF-643	Office Trailer	1,561	Office	26	2003	$2	Good	Will Inactivate in 2003, and Disposition by 2013	D	2004	$0	$0
CF-650	Heating Plant	1,513	Service	60	2003	$2	Very Poor	Will Inactivate in 2003	-	-	-	-
CF-651	Pump House (CFA Well No. 1)	150	Service	54	2010	$1	Good	-	-	-	-	-
CF-652	Office Trailer	1,561	Office	26	2003	$7	Fair	Will Inactivate in 2003, and Disposition by 2013	D	2004	$0	$0
CF-661	Material Staging Building	4,852	Storage	40	2009	$16	Fair	Will Inactivate in 2009	-	-	-	-
CF-662	Cafeteria	12,582	Service	52	2012	$866	Very Poor	General Upgrades, Deferred, Inactivate in 2012	H,M,R,S	2010	$2,448	$2,448
CF-663	Core Storage	6,067	Storage	13	2047	$9	Good	HVAC System Upgrades	H	2013	$77	$77
CF-664	Storage Building	16,399	Storage	52	2005	$145	Poor	Will Inactivate in 2005	-	-	-	-
CF-666	Maintenance Support Building	12,146	Service	52	2004	$254	Fair	Will Inactivate in 2004	-	-	-	-
CF-668	Communication Building	10,275	Service	52	2047	$47	Fair	-	-	-	-	-

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Table B-3. Central Facilities Area Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
CF-671	Boiler House	1,094	Service	52	2009	$41	Poor	Will Inactivate in 2009	-	-	-	-
CF-674	Warehouse	49,326	Storage	51	2006	$2,451	Very Poor	Will Inactivate in 2006	-	-	-	-
CF-676	DOE Equipment Storage	1,468	Storage	40	2011	$2	Fair	Will Inactivate in 2011	-	-	-	-
CF-679	Generator Bldg	68	Service	14	2004	$2	Poor	Will Inactivate in 2004	-	-	-	-
CF-681	Substation Control House	3,277	Service	52	2047	$19	Good	-	-	-	-	-
CF-685	Bus Depot	2,154	Service	51	2007	$32	Fair	Will Inactivate in 2007	-	-	-	-
CF-686	High Bay	3,878	Storage	24	2010	$11	Fair	Will Inactivate in 2010	-	-	-	-
CF-688	Technical Center	19,381	Office	40	2010	$143	Fair	Will Inactivate in 2010	-	-	-	-
CF-689	Technical Center	26,825	Office	40	2010	$16	Fair	Will Inactivate in 2010	-	-	-	-
CF-690	Radiologica/Environ Lab	32,238	Laboratory	40	2010	$581	Very Poor	Will Inactivate in 2010	-	-	-	-
CF-695	Fire Safety Equip. Storage	1,618	Storage	37	2007	$11	Fair	Will Inactivate in 2007	-	-	-	-
CF-696	CFA Transportation Complex	81,672	Service	8	2045	$340	Good		H,M,R,	2010	$1,900	
								Propane System Upgrades	M	2010	$400	$2,300
CF-697	Equipment Storage	3,200	Storage	43	2009	$32	Poor	Will Inactivate in 2009	-	-	-	-
CF-698	Standards & Calibration Lab	10,330	Laboratory	34	2047	$42	Fair	HVAC System Upgrades	H	2004	$492	$492
CF-699	Radio & Alarm Shop	6,383	Service	34	2007	$6	Fair	Will Inactivate in 2007	-	-	-	-
Shutdown Buildings												
CF-603	Dispensary	15,005	Excess	53	1997	-	Very Poor	Inactivated (Shutdown Pending D&D)	-	-	-	-
CF-604	Emergency Generator Building	210	Excess	20	1995	-	Good	Inactivated (Shutdown Pending D&D)	-	-	-	-
CF-606	Office Building	7,105	Excess	61	1995	-	Very Poor	Inactivated (Shutdown Pending D&D)	-	-	-	-
CF-607	Office Building	3,115	Excess	61	1996	-	Poor	Inactivated (Shutdown Pending D&D)	-	-	-	-
CF-613	Bunkhouse	2,942	Excess	61	1995	-	Very Poor	Inactivated (Shutdown Pending D&D)	-	-	-	-
CF-632	Boiler Operations Lunchroom	301	Excess	58	1996	-	Poor	Inactivated (Shutdown Pending D&D)	-	-	-	-
CF-635	Storage Bunker	266	Excess	60	1998	-	Poor	Inactivated (Shutdown Pending D&D)	-	-	-	-

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-3. Central Facilities Area Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
CF-646	Storage Building	223	Excess	43	2002	-	Poor	Inactivated (Shutdown Pending D&D)	-	-	-	-
CF-660	Laborers & Equip Operator Bldg	5,454	Excess	40	2002	-	Fair	Inactivated (Shutdown Pending D&D)	-	-	-	-
CF-667	Storage Building	6,257	Excess	52	2002	-	Very Poor	Inactivated (Shutdown Pending D&D)	-	-	-	-
CF-675	Generator Building	145	Excess	40	1997	-	Very Poor	Inactivated (Shutdown Pending D&D)	-	-	-	-
CF-680	Storage Building	79	Excess	52	1995	-	Very Poor	Inactivated (Shutdown Pending D&D)	-	-	-	-
CF-684	Flammable Storage	256	Excess	51	2002	-	Fair	Inactivated (Shutdown Pending D&D)	-	-	-	-
CF-692	Scale House	99	Excess	53	1997	-	Poor	Inactivated (Shutdown Pending D&D)	-	-	-	-
CF-1610	Modular Office	4,700	Excess	9	2002	-	Good	Inactivated (Shutdown Pending Disposal)	-	-	-	-
No New and Replacement Buildings												
Distribution Systems and Other Projects not related to specific buildings												
	Potable/Firewater Tank and Sys Upgrade	-	-	-	-	-	-	-	M	2011	$3,711	$3,711
	Upgrade Steam and Cond Lines	-	-	-	-	-	-	-	H	2011	$612	$612
	Water Dist Syst Well Pump Upgrades	-	-	-	-	-	-	-	M	2012	$70	$70
	HVAC Instr and Control Centralization	-	-	-	-	-	-	-	H	2012	$348	$348
	Sewage Disp Plant System Upgrade	-	-	-	-	-	-	-	M	2013	$2,552	$2,552
	Water Distribution System Upgrades	-	-	-	-	-	-	-	M	2013	$1,995	$1,995

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-4. Idaho Falls Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013.

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
Operating Buildings												
IF-601	Research Office Bldg. #1	20,000	Office	16	2027	$9	Good	-	-	-	-	-
IF-602	IRC Office Building	45,057	Office	20	2033	$33	Good	Project: Fire Al Notification.	E	2009	$350	
								Project: HVAC Cont Upgr.	H	2010	$200	
								Project: HVAC System Upgrade	H	2012	$450	$1,000
IF-603	IRC Laboratory Building	99,189	Laboratory	19	2034	$275	Fair	Project: Cooling Tower Replacement	H	2009	$50	$50
IF-604A	Technical Support Annex	50,500	Service	25	2015	-	Good	Leased Facility, Project: TSA/B Fire Alarm Upgrade	E	2011	$250	$250
IF-604B	Technical Support Building	50,000	Office	27	2015	-	Good	Leased Facility	-	-	-	-
IF-605	Energy Storage Technology Lab	5,000	Laboratory	19	2041	$8	Fair	Project: Lab Expansion and Upgrade	Add	2009	$2,731	$2,731
IF-606	ID South	65,532	Office	18	2045		Good	Leased Facility	-	-	-	-
IF-608	INEEL Supercomputing Center	37,154	Service	35	2015	$9	Good	Project: Network Switch and Cable Upgrades.	E	2005	$1,306	
								Project: Building Power Upgrade	E	2012	$350	$1,656
IF-609	ID North	80,606	Office	22	2015	-	Fair	Leased Facility, Will Terminate	-	-	-	-
IF-610	Landlord Storage Bldg.	894	Storage	17	2028	-	Good	-	-	-	-	-
IF-611	National Security Laboratory	4,500	Laboratory	14	2039	$5	Good	-	-	-	-	-
IF-613	North Boulevard Annex	14,667	Laboratory	40	2007	-	Fair	Leased Facility, Will Terminate	-	-	-	-
IF-614	May Street North	3,250	Laboratory	43	2007	-	Fair	Leased Facility, Will Terminate	-	-	-	-
IF-615	May Street South	6,200	Laboratory	43	2007	-	Fair	Leased Facility, Will Terminate	-	-	-	-
IF-616	Willow Creek Bldg	284,100	Office	24	2040	-	Good	Leased Facility. Project: Network Sw & Cbl Upgrade	E	2011	$2,085	$2,085
IF-617	Willow Creek Mechanical Bldg.	6,064	Service	24	2040	-	Good	Leased Facility	-	-	-	-
IF-618	University Place	14,200	Service	27	2016	-	Good	Leased Facility	-	-	-	-

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-4. Idaho Falls Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
IF-627	Systems Analysis Facility	11,508	Office	15	2038	$20	Fair	-	-	-	-	-
IF-631	Bus Dispatch	3,500	Service	17	2045	-	Good	Leased Facility	-	-	-	-
IF-635	IRC Backup Fire Water Pumphouse	150	Service	13	2040	$3	Good	-	-	-	-	-
IF-638	IRC Physics Lab	7,700	Laboratory	12	2041	$64	Fair	-	-	-	-	-
IF-639	North Holmes Laboratory	22,064	Laboratory	43	2007	-	Fair	Leased Facility, Will Terminate	-	-	-	-
IF-651	North Yellowstone Laboratory	8,000	Laboratory	19	2007	-	Fair	Leased Facility, Will Terminate	-	-	-	-
IF-654	Engineering Research Office Bl	244,000	Office	10	2045	-	Good	Leased Facility. Project: Network Sw & Cbl Upgrade	GPP	2005	$1,931	$1,931
IF-655	IRC Chemical Storage Facility	3,875	Storage	8	2045	$8	Good	-	-	-	-	-
IF-657	INEEL Engineering Demo Facility	8,170	Laboratory	8	2045	$43	Good	-	-	-	-	-
IF-658	Natl. Security Lab. Greenhouse	644	Laboratory	7	2015	-	Good	-	-	-	-	-
IF-663	Records Storage Facility	21,060	Storage	2	2050	-	Good	-	-	-	-	-
IF-664	Heyrend Way Lab	7,000	Laboratory	4	2007	-	Good	Leased Facility, Will Terminate	-	-	-	-
IF-670	Bon. County Technology Cntr	2,000	Laboratory	4	2007	-	Good	Leased Facility, Will Terminate	-	-	-	-
New and Replacement Buildings												
	IRC Storage Facility	5,000	Storage	-	2035	-	-	-	New	2012	$1,631	$1,631
	INL Lab Upgrades & Replace Proj	TBD	Laboratory		TBD	-	-	Start FY 2011, Complete FY 2013, May Include Work at Multiple Locations Including at the Site	-	2011	$17,700	$17,700
	Radiological & Env Science Lab	25,000	Laboratory	-	-	-	-	Start in FY 2010, Complete in FY 2013	New	2010	$15,670	$15,670

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-4. Idaho Falls Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
Distribution Systems and Other Projects not related to specific buildings												
	IF-601/605/611/627/638 Roof Repl	--		-	-	-	-	-	R	2012	$750	$750

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-5. Sitewide Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013.

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
Operating Buildings												
ARA-617	Dynamic Processing Facility	1,557	Service	42	2010	$47	Very Poor	Will Inactivate	-	-	-	-
B16-603	Exper Field St Barn	853	Storage	39	2015	$1	Poor	-	-	-	-	-
B16-604	Exper Field St Pumphouse	208	Service	39	2015	$3	Poor	-	-	-	-	-
B16-605	NOAA Storage Bldg	703	Storage	35	2019	$6	Poor	-	-	-	-	-
B16-606	Exper Field St Stor Bldg	334	Storage	40	2014	-	Poor	-	-	-	-	-
B16-610	Meteorological Balloon Shelter	145	Storage	43	2012	-	Fair	Will Inactivate	-	-	-	-
B21-606	W. Portland Guardhouse	110	Service	19	2040	$5	Good	-	-	-	-	-
B21-607	Weapons Range Complex Pumphse	75	Service	14	2029	$1	Good	-	-	-	-	-
B21-608	Weapons Range House	6,881	Service	14	2029	$9	Good	-	-	-	-	-
B21-609	Weapons Range Firing Line	1,980	Service	14	2029	-	Good	-	-	-	-	-
B21-610	Firing Line Cover 5	810	Service	14	2029	$2	Good	-	-	-	-	-
B21-611	Weapons Range Firing Stand Enc	600	Service	14	2029	$2	Good	-	-	-	-	-
B21-612	CFA Landfill Trailer	960	Office	9	2014	-	Good	-	-	-	-	-
B21-613	Landfill Trailer	281	Service	17	2015	$3	Good	-	-	-	-	-
B21-614	Landfill Change Room (Women)	200	Service	20	2015	$4	Good	-	-	-	-	-
B21-620	Substation Control Building	350	Service	8	2016	-	Good	-	-	-	-	-
B21-621	Air Monitoring Building	100	Service	12	2035	-	Fair	-	-	-	-	-
B21-622	Landfill Equipment Shop	4,874	Service	2	2015	-	Fair	-	-	-	-	-
B25-601	SDA Engineered Barriers Test Facility	2,112	Laboratory	7	2030	-	Good	-	-	-	-	-
B27-601	Generator Bldg, Main	133	Service	19	2035	-	Fair	-	-	-	-	-

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-5. Sitewide Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
B27-602	E. Portland Guardhouse	117	Service	19	2035	$3	Fair	-	-	-	-	-
B27-603	Security Badging Facility	6,167	Service	17	2035	$35	Fair	-	-	-	-	-
B27-604	Bus Passenger Shelter	609	Service	18	2012	-	Fair	Will Inactivate	-	-	-	-
B27-605	Deep Well Pumphouse	76	Service	16	2035	-	Fair	-	-	-	-	-
B27-606	Multipurpose Laboratory Facility	1,200	Laboratory	2	2054	-	Good	-	-	-	-	-
B28-601	East Butte Radio Comm. Bldg	936	Service	7	2055	$2	Good	-	-	-	-	-
B60-601	Office, Pocatello Bus Lot	1,350	Service	38	2057	-	Fair	Leased Facility	-	-	-	-
B60-602	SECOM Bldg, Iona Butte	1,000	Service	28	2054	$1	Fair	-	-	-	-	-
B60-604	Boise Outreach Office	2,025	Office	13	-	-	-	Leased Facility	-	-	-	-
B8-601	Generator Bldg, Lincoln	133	Service	19	2040	-	Fair	-	-	-	-	-
B8-602	Lincoln Guardhouse	108	Service	19	2040	$4	Fair	-	-	-	-	-
EBR-I-601	Reactor Building And Anx.	23,700	Service	50	2035	$57	Fair	-	-	-	-	-
EBR-I-602	Security Control House	254	Service	50	2035	-	Fair	-	-	-	-	-
HPTF-604	Communications facility	1,100	Service	4	2040	$1	Good	-	-	-	-	-
Shutdown Buildings												
B16-607	Training & Storage Bldg	1,220	Excess	21	2002	-	Fair	Inactivated (Shutdown Pending D&D)	-	-	-	-
B23-602	Taylor Generator Bldg.	133	Excess	19	1993	-	Fair	Inactivated (Shutdown Pending D&D)	-	-	-	-
No New and Replacement Buildings												
Distribution Systems and Other Projects not related to specific buildings												
	INEEL high Voltage Eq Repl	-	-	-	-	-	-	Starts in FY 2005, Complete in FY 2012	E	2005	$27,228	
	Building and Switchgear EBR 2	-	-	-	-	-	-	-	A,E	2006	$2,025	$2,025
	Site Power Distr. Protective relay	-	-	-	-	-	-	-	E	2007	$1,795	$1,795

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-5. Sitewide Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
	Sitewide INL Information Network							Starts FY 2005, Complete FY 2008 (TPC $33,466K)		2005	$31,278	$31,278
	INEEL Power System Reliability Enhancement with Transformer Circuit S	-	-	-	-	-	-	-	E	2007	$1,273	$1,273
	HPTF Underground Power Cable Repl	-	-	-	-	-	-	-	E	2008	$1,151	$1,151
	INEEL Wireless Data Infrastruct	-	-	-	-	-	-	-	E	2008	$529	$529
	NRF Transformer Upgrade	-	-	-	-	-	-	-	E	2009	$2,278	$2,278
	Railroad Switch Repl	-	-	-	-	-	-	-	-	2010	$697	$697
	INEEL High Mast Lighting	-	-	-	-	-	-	-	E	2011	$719	$719
	Controls for Potable Water in Rad Areas	-	-	-	-	-	-	-	M	2011	$1,224	$1,224
	INEEL Road System Upgrade	-	-	-	-	-	-	-	-	2012	$1,417	$1,417

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-6. Test Area North Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013.

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
Operating Buildings												
TAN-1613	Chemical Storage Building	400	Storage	1	2015	-	Good	-	-	-	-	-
TAN-601	Guard House	2918	Service	49	2015	$8	Good	-	-	-	-	-
TAN-605	Substation Control House	1,520	Service	49	2020	$28	Fair	-	-	-	-	-
TAN-610	Firewater Pump House	1382	Service	49	2015	$42	Poor	-	-	-	-	-
TAN-612	Deepwell Pump House #1	208	Service	49	2015	$5	Fair	-	-	-	-	-
TAN-613	Deepwell Pump House #2	208	Service	49	2015	$5	Fair	-	-	-	-	-
TAN-614	Water Pump House	1,011	Service	47	2018	-	Fair	-	-	-	-	-
TAN-629	SMC Assembly Building	82,865	Process	44	2015	-	Good	-	-	-	-	-
TAN-632	Pump House Well #1	321	Service	49	2015	$1	Fair	-	-	-	-	-
TAN-639	Pump House Well #2	94	Service	49	2015	$1	Fair	-	-	-	-	-
TAN-658	Storage Bldg	6,154	Storage	41	2004	$1	Fair	Will Inactivate in 2004	-	-	-	-
TAN-664	Automotive Service Attendant	144	Service	49	2015	$2	Fair	-	-	-	-	-
TAN-665	Firewater Pump house	846	Service	23	2018	$16	Fair	-	-	-	-	-
TAN-671	Office Trailer South	1,568	Office	24	2015	$36	Fair	-	-	-	-	-
TAN-672	Office Trailer North	1,568	Office	24	2015	$11	Fair	-	-	-	-	-
TAN-675	Phase 1 Utility Building (Off)	20,683	Office	19	2015	-	Fair	-	-	-	-	-
TAN-676	Security Guard Bldg	2,257	Service	15	2015	$21	Good	-	-	-	-	-
TAN-677	Truck Docking Bldg.	13,790	Process	19	2015	-	Good	-	-	-	-	-
TAN-678	Cafeteria #2	7,630	Service	15	2015	$325	Poor	-	-	-	-	-
TAN-679	Manufacturing & Assembly Bldg.	56,574	Process	17	2015	-	Good	-	-	-	-	-
TAN-679A	Manufacturing & Assembly Bldg. Addi.	25,000	Process	2	2015	-	Good	-	-	-	-	-
TAN-680	Bus Fuel Pump Station	54	Service	18	2015	$3	Good	-	-	-	-	-
TAN-681	Waste Treatment Bldg	12,619	Process	17	2015	$1	Good	-	-	-	-	-

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-6. Test Area North Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013 (continued).

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
TAN-682	Storage Building	20,064	Storage	17	2015	$4	Good	-	-	-	-	-
TAN-687	Fire Station	9,351	Service	13	2020	$23	Good	-	-	-	-	-
TAN-688	Warehouse	20,000	Storage	15	2015	-	Good	-	-	-	-	-
TAN-690	Oil Storage Facility	1,200	Storage	13	2015	-	Good	-	-	-	-	-
TAN-692	Waste Storage Building SMC	900	Storage	18	2015	-	Good	-	-	-	-	-
TAN-693	Paint Shop Building SMC	130	Service	12	2015	-	Good	-	-	-	-	-
No New and Replacement Buildings												
No Distribution Systems and Other Projects not related to specific buildings												

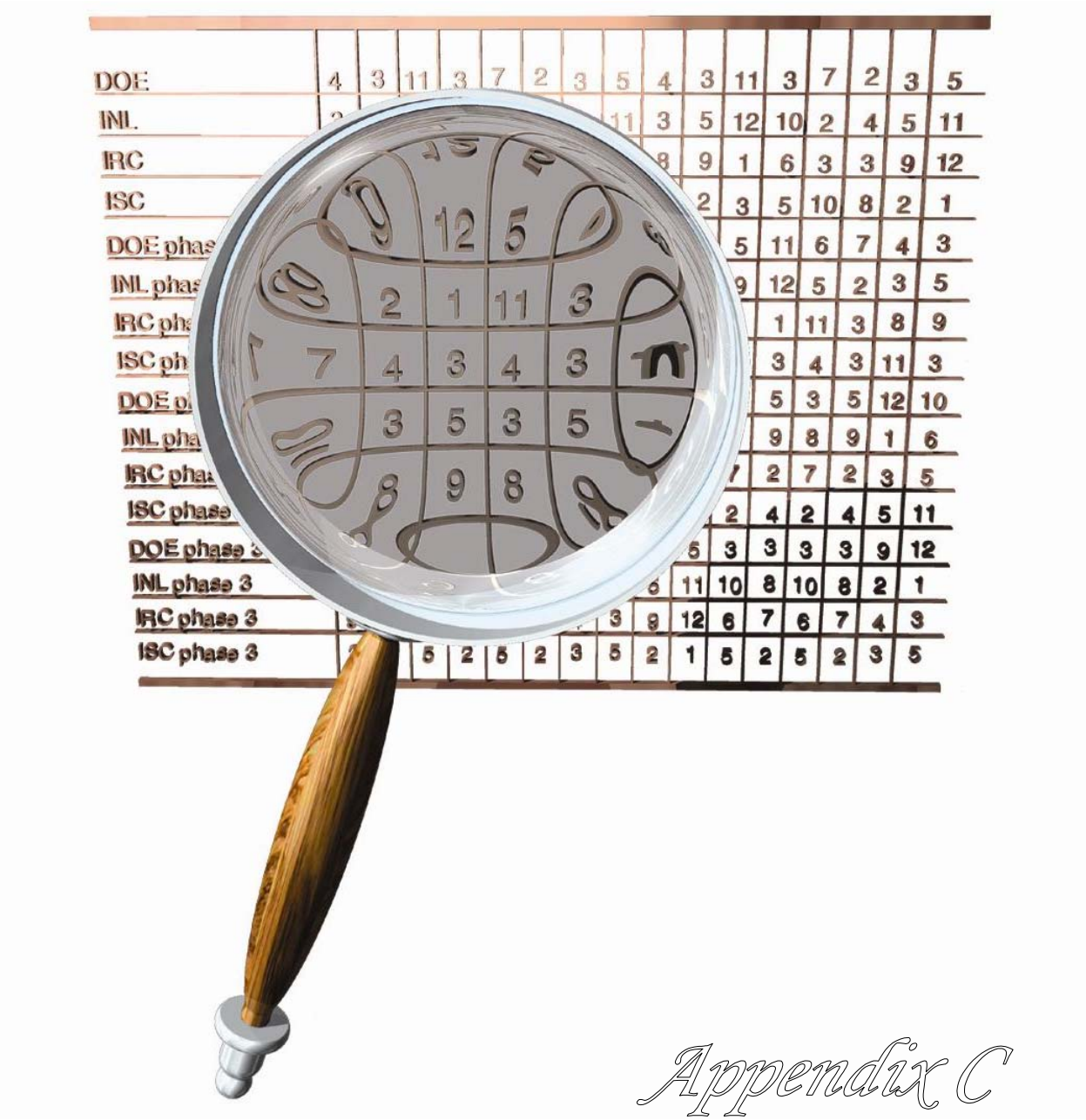
Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Table B-7. Waste Reduction Operation Complex/Power Burst Facility Infrastructure Life-cycle Recapitalization Needs from Fiscal Year 2004–2013.

Building ID	Name	Floor Area (ft^2)	Use Code	Age	End Date	Deferred Maintenance (K$)	Condition	Remarks	Projects			Total (K$)
									Type	Year	$K	
Operating Buildings												
PBF-602	No. 1 Well House	356	Service	47	-	$1	Fair	-	-	-	-	-
PBF-608	Substation Control House	2,894	Service	46	-	$5	Fair	-	-	-	-	-
PBF-609	WERF Incinerator Building	14706	Process	44	-	$5	Good	-	-	-	-	-
PBF-612	Waste Engineering/Dev. Fac.	7937	Storage	43	-	$2	Fair	-	-	-	-	-
PBF-613	Mixed Waste Storage Facility	10364	Storage	41	-	$4	Fair	-	-	-	-	-
PBF-614	Pump House #2	251	Service	41	-	$1	Poor	-	-	-	-	-
PBF-619	Control Building	5788	Office	36	-	$1	Fair	-	-	-	-	-
PBF-622	WERF Compaction & Sizing Fac	5075	Storage	14	-	-	Good	-	-	-	-	-
PBF-623	WERF Waste Storage Building	9803	Storage	12	-	-	Good	-	-	-	-	-
PBF-632	WROC Support Building	8050	Office	22	-	$506	Good	-	-	-	-	-
PBF-638	Water Pumphouse	2508	Service	9	-	$1	Good	-	-	-	-	-
PBF-641	WROC Oper. Support Building	6775	Office	10	-	-	Good	-	-	-	-	-
No New and Replacement Buildings												
No Distribution Systems and Other Projects not related to specific buildings												

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition

Legend: Repl = replace building, Add = addition, R = roof, H = heating, ventilation, and air-conditioning, M = mechanical, E = electrical, A = architectural, S = structural, D = disposition



Appendix C

Appendix C

Table C-1. Nuclear Energy Facilities Currently Inactive.

Building ID	Name	Floor Area (ft^2)	Year Built	Status	FIMS Facility Condition Code	Mission End Date	Inactivation Date	Disposition Complete Date	Disposition	Estimated Disposition Cost	Expected NEPA Category and ES&H
B16-607	Training and Storage Building	1,220	1982	Shutdown pending D&D	Not Applicable	2002	2002	2030	Demolish	$55,145	CX
B23-602	Taylor Generator Building	133	1984	Shutdown pending D&D	Not Applicable	1993	1993	2030	Demolish	$7,985	CX
CFA-1610	Modular Office	4,700	1994	Shutdown pending disposal	Not Applicable	2002	2002		Sell or Transfer	$25,000	CX
CFA-603	Dispensary	15,005	1950	Shutdown pending D&D	Not Applicable	1997	1997	2032	Demolish	$678,196	CX
CFA-604	Emergency Generator Building	210	1983	Shutdown pending D&D	Not Applicable	1995	1995	2033	Demolish	$12,608	CX
CFA-606	Office Building	7,105	1942	Shutdown pending D&D	Not Applicable	1995	1995	2033	Demolish	$255,780	CX
CFA-607	Office Building	3,115	1942	Shutdown pending D&D	Not Applicable	1996	1996	2033	Demolish	$142,044	CX
CFA-613	Bunkhouse	2,942	1942	Shutdown pending D&D	Not Applicable	1995	1995	2033	Demolish	$134,155	CX
CFA-632	Boiler Operations Lunchroom	301	1945	Shutdown pending D&D	Not Applicable	1996	1996	2033	Demolish	$18,072	CX
CFA-635	Storage Bunker	266	1943	Shutdown pending D&D	Not Applicable	1998	1998	2033	Demolish	$22,853	CX
CFA-646	Storage Building	223	1960	Shutdown pending D&D	Not Applicable	2002	2002	2033	Demolish	$13,970	CX
CFA-660	Laborers and Equipment Operator Building	5,454	1963	Shutdown pending D&D	Not Applicable	2002	2002	2030	Demolish	$215,978	CX
CFA-667	Storage Building	6,257	1951	Shutdown pending D&D	Not Applicable	2002	2002	2033	Demolish	$223,281	CX
CFA-675	Generator Building	145	1963	Shutdown pending D&D	Not Applicable	1997	1997	2033	Demolish	$6,300	CX
CFA-680	Storage Building	79	1951	Shutdown pending D&D	Not Applicable	1995	1995	2033	Demolish	$4,743	CX
CFA-684	Flammable Storage	256	1952	Shutdown pending D&D	Not Applicable	2002	2002	2033	Demolish	$16,038	CX

Table C-1. Nuclear Energy Facilities Currently Inactive (continued).

Building ID	Name	Floor Area (ft^2)	Year Built	Status	FIMS Facility Condition Code	Mission End Date	Inactivation Date	Disposition Complete Date	Disposition	Estimated Disposition Cost	Expected NEPA Category and ES&H
CFA-692	Scale House	99	1950	Shutdown pending D&D	Not Applicable	1997	1997	2033	Demolish	$4,302	CX
TRA-615	Meteorological Instrument Building	36	1970	Shutdown pending transfer	Not Applicable	2002	2002	2032	Demolish	$2,255	CX
TRA-618	Warehouse	14,975	1952	Shutdown pending transfer	Not Applicable	2000	2002	2032	Demolish	$534,383	CX
TRA-624	Sewage Treatment Building	111	1952	Shutdown pending transfer	Not Applicable	1996	1996	2032	Demolish	$6,664	CX
TRA-631	Acid Pumphouse	336	1952	Shutdown pending transfer	Not Applicable	1996	2002	2030	Demolish	$27,682	CX
TRA-663	Superior Diesel Building	1,120	1957	Shutdown pending transfer	Not Applicable	2002	2002	2009	Demolish	$51,966	CX
TRA-675	Waste Oil Dumpster Shed	150	1987	Shutdown pending transfer	Not Applicable	1997	1997		Demolish	$11,136	CX

Table C-2. Nuclear Energy Facilities to be Inactivated by 2013 (sorted by inactivation date).

Building ID	Name	Floor Area (ft^2)	Year Built	Status	FIMS Facility Condition Code	Mission End Date	Inactivation Date	Disposition Complete Date	Disposition	Estimated Disposition Cost	Expected NEPA Category and ES&H
CFA-633	Health Physics Instrumentation Laboratory	18,596	1942	Operating	Poor	2003	2003	2014	Demolish	$1,075,563	CX
CFA-643	Office Trailer	1,561	1977	Operating	Excellent	2003	2003	2004	Sell or Transfer	$0	CX
CFA-650	Heating Plant	1,513	1943	Operating	Excellent	2003	2003	2033	Demolish	$86,241	CX
CFA-652	Office Trailer	1,561	1977	Operating	Adequate	2003	2003	2004	Sell or Transfer	$0	CX
TRA-669	Cold Storage Building	2,300	1968	Shutdown pending transfer	Not Applicable	2002	2003	2026	Demolish	$262,350	CX
CFA-614	Office Building	8,090	1986	Operating	Excellent	2004	2004	2033	Demolish	$288,692	CX
CFA-666	Maintenance Support Building	12,146	1951	Operating	Fair	2004	2004	2033	Demolish	$444,908	CX
CFA-679	Generator Building	68	1989	Operating	Poor	2004	2004	2033	Demolish	$4,083	CX
TAN-658	Storage Building	6,154	1962	Operating	Excellent	2004	2004	2030	Demolish	$227,680	CX
TRA-647	ETR Office Building	11,793	1957	Shutdown pending transfer	Not Applicable	2002	2004	2009	Demolish	$849,000	CX
CFA-664	Storage Building	16,399	1951	Operating	Fair	2005	2005	2033	Demolish	$600,695	CX
TRA-636	Retention Basin Inlet	86	1981	Operating	Excellent		2005		Demolish	$10,941	CX
TRA-648	ETR Electrical Building	9,785	1957	Operating	Adequate	2005	2005	2009	Demolish	$640,691	CX
CFA-602	Materials Test Laboratory and Field Engineering	4,295	1969	Operating	Excellent	2006	2006	2030	Demolish	$197,811	CX
CFA-674	Warehouse	49,326	1952	Operating	Fail	2006	2006	2033	Demolish	$1,806,811	CX
TRA-616	Cafeteria	4,197	1952	Operating	Fair	2006	2006	2032	Demolish	$194,732	CX
TRA-626	Maintenance Storage Building	1,472	1952	Operating	Excellent	2006	2006	2010	Demolish	$75,568	CX
TRA-656	Maintenance Storage Building	850	1959	Operating	Excellent		2006	2010	Demolish	$53,250	CX
CFA-685	Bus Depot	2,154	1952	Operating	Fair	2007	2007	2033	Demolish	$110,500	CX

Table C-2. Nuclear Energy Facilities to be Inactivated by 2013 (sorted by inactivation date) (continued).

Building ID	Name	Floor Area (ft^2)	Year Built	Status	FIMS Facility Condition Code	Mission End Date	Inactivation Date	Disposition Complete Date	Disposition	Estimated Disposition Cost	Expected NEPA Category and ES&H
CFA-695	Fire Safety Equipment Storage	1,618	1966	Operating	Good	2007	2007	2033	Demolish	$75,072	CX
CFA-699	Radio and Alarm Shop	6,383	1969	Operating	Excellent	2007	2007	2033	Demolish	$233,809	CX
CFA-619	Utility Building	410	1989	Operating	Excellent	2008	2008	2033	Demolish	$25,685	CX
CFA-625	CFA Laboratory Complex	7,533	1989	Operating	Fair	2008	2008	2017	Demolish	$367,561	CX
CFA-629	Office Building	9,867	1979	Operating	Good	2008	2008	2033	Demolish	$422,525	CX
TRA-614	Office Building/Bunk House	6,200	1952	Operating	Fair	2006	2008	2032	Demolish	$227,106	CX
TRA-620	Office Building	1,888	1952	Operating	Fair	2008	2008	2011	Demolish	$90,075	CX
TRA-628	TRA Office Building 1	13,013	1986	Operating	Excellent	2008	2008		Demolish	$462,612	CX
TRA-637	Bunkhouse Trailer	600	1978	Operating	Good	2008	2008	2009	Sell or Transfer	$0	CX
TRA-641	Gamma Building	2,365	1955	Shutdown pending transfer	Good	2008	2008	2010	Demolish	$260,498	CX
TRA-649	MTR Office Building Wing C	6,852	1966	Operating	Fail	2008	2008	2010	Demolish	$255,070	CX
TRA-652	MTR Office Building Wing B	13,407	1966	Operating	Fair	2008	2008	2010	Demolish	$496,614	CX
TRA-667	Dispensary and Office Building	4,168	1964	Operating	Excellent	2008	2008	2032	Demolish	$209,067	CX
TRA-673	Storage Building	1,200	1971	Operating	Poor		2008	2030	Demolish	$56,236	CX
TRA-677	Acid/Caustic Storage Facility	793	1992	Operational standby	Excellent	2008	2008		Demolish	$55,602	CX
CFA-621	Multicraft Shop 1	10,068	1983	Operating	Excellent	2009	2009	2033	Demolish	$359,277	CX
CFA-622	Multicraft Shop 2	10,549	1985	Operating	Excellent	2009	2009	2033	Demolish	$389,258	CX
CFA-623	Multicraft Shop 3	11,384	1986	Operating	Excellent	2009	2009	2033	Demolish	$406,238	CX
CFA-624	Multicraft Shop 4	8,963	1986	Operating	Excellent	2009	2009	2033	Demolish	$383,814	CX

Table C-2. Nuclear Energy Facilities to be Inactivated by 2013 (sorted by inactivation date) (continued).

Building ID	Name	Floor Area (ft^2)	Year Built	Status	FIMS Facility Condition Code	Mission End Date	Inactivation Date	Disposition Complete Date	Disposition	Estimated Disposition Cost	Expected NEPA Category and ES&H
CFA-661	Material Staging Building	4,852	1963	Operating	Adequate	2009	2009	2033	Demolish	$219,315	CX
CFA-671	Boiler House	1,094	1951	Operating	Fail	2009	2009	2033	Demolish	$50,759	CX
CFA-697	Equipment Storage	3,200	1960	Operating	Fair	2009	2009	2033	Demolish	$144,643	CX
PBF-608	Substation Control House	2,894	1957	Operating	Good	2009	2009	2032	Demolish	$134,276	CX
ARA-617	Dynamic Processing Facility	1,557	1961	Operating	Poor	2010	2010	2027	Demolish	$72,690	CX
CFA-638	Dosimetry Calibration Laboratory	1,030	1943	Operating	Good	2010	2010	2033	Demolish	$58,710	CX
CFA-686	High Bay	3,878	1979	Operating	Good	2010	2010	2030	Demolish	$221,046	CX
CFA-688	Technical Center	19,381	1963	Operating	Adequate	2010	2010	2030	Demolish	$832,888	CX
CFA-689	Technical Center	26,825	1963	Operating	Excellent	2010	2010	2030	Demolish	$1,141,376	CX
CFA-690	Radiological/Environmental Laboratory	32,238	1963	Operating	Adequate	2010	2010	2014	Demolish	$1,682,700	CX
TRA-602	Deepwell Pumphouse 2	489	1952	Operating	Adequate	2010	2010	2032	Demolish	$31,446	CX
TRA-603	Material Test Reactor Building	45,184	1952	Operating	Excellent	2010	2010	2016	Demolish	$26,905,460	CX
TRA-629	Gas Cylinder Storage Building	710	1956	Operating	Excellent		2010	2011	Demolish	$44,479	CX
TRA-635	Material Receiving and Laboratory Area	22,046	1952	Operating	Adequate	2010	2010	2012	Demolish	$801,593	CX
TRA-651	Maintenance/Storage Building	672	1960	Operating	Fair	2010	2010	2011	Demolish	$44,083	CX
TRA-665	Storage Building	776	1962	Operating	Fail		2010	2011	Demolish	$73,565	CX
TRA-668	MTR North Wing Extension	3,596	1956	Operating	Good	2010	2010	2011	Demolish	$314,534	CX
TRA-690	Storage Building	80	1993	Operating	Excellent	2010	2010		Demolish	$3,476	CX
CFA-1602	Hydrant and Standpipe Facility	96	1990	Operating	Fail	2011	2011	2030	Demolish	$4,171	CX

Table C-2. Nuclear Energy Facilities to be Inactivated by 2013 (sorted by inactivation date) (continued).

Building ID	Name	Floor Area (ft^2)	Year Built	Status	FIMS Facility Condition Code	Mission End Date	Inactivation Date	Disposition Complete Date	Disposition	Estimated Disposition Cost	Expected NEPA Category and ES&H
CFA-611	Change House	16	1991	Operating	Excellent	2011	2011	2012	Sell or Transfer	$0	CX
CFA-616	NOAA Storage	407	1983	Operating	Good	2011	2011	2033	Demolish	$25,497	CX
CFA-637	Hazardous Chemical Storage	2,230	1943	Operating	Excellent	2011	2011	2033	Demolish	$127,110	CX
CFA-676	DOE Equipment Storage	1,468	1963	Operating	Excellent	2011	2011	2030	Demolish	$69,483	CX
TRA-660	Advanced Reactivity Measurement Facility	2,400	1959	Operational standby	Good	2011	2011	2012	Demolish	$183,989	CX
TRA-661	Radiochemistry Laboratories	7,760	1962	Operating	Excellent	2011	2011	2012	Demolish	$1,591,870	CX
B16-610	Meteorological Balloon Shelter	145	1960	Operating	Excellent	2012	2012	2030	Demolish	$9,084	CX
B27-604	Bus Passenger Shelter	609	1985	Operating	Excellent	2012	2012	2030	Demolish	$24,296	CX
CFA-1608	Modular Office	7,056	1994	Operating	Excellent	2012	2012	2013	Sell or Transfer	$25,000	CX
CFA-1609	DOE Modular Office	5,800	1994	Operating	Excellent	2012	2012	2013	Sell or Transfer	$25,000	CX
CFA-612	Office/Three Laboratories	9,855	1983	Operating	Excellent	2012	2012	2030	Demolish	$364,606	CX
CFA-662	Cafeteria	12,582	1951	Operating	Poor	2012	2012	2027	Demolish	$457,866	CX
TRA-604	MTR Building Wing A	41,744	1952	Operating	Fair	2012	2012	2016	Demolish	$8,018,982	CX
TRA-607	Carpenters Shop	2,433	1952	Operating	Good	2012	2012	2030	Demolish	$118,737	CX
TRA-610	MTR Fan House	3,216	1952	Operating	Poor	2012	2012	2013	Demolish	$496,872	CX
TRA-622	Cold Waste Handling Facility	1,338	1952	Operating	Fair	2012	2012	2030	Demolish	$72,260	CX
TRA-640	Hazardous Chemical Storage Building	1,800	1984	Operating	Excellent	2012	2012	2013	Demolish	$85,197	CX
TRA-654	General Laboratory/High Bay (ETRC)	2,400	1959	Operating	Excellent	2012	2012	2013	Demolish	$228,000	CX

Table C-2. Nuclear Energy Facilities to be Inactivated by 2013 (sorted by inactivation date) (continued).

Building ID	Name	Floor Area (ft^2)	Year Built	Status	FIMS Facility Condition Code	Mission End Date	Inactivation Date	Disposition Complete Date	Disposition	Estimated Disposition Cost	Expected NEPA Category and ES&H
TRA-657	MTR Plug Storage Building	5,000	1952	Operating	Excellent	2012	2012	2013	Demolish	$290,000	CX
TRA-678	TRA Office Building 2	4,968	1991	Operating	Excellent	2012	2012	2032	Demolish	$224,559	CX
TRA-681	Temporary Accumulation Area 1	120	1995	Operating	Excellent	2012	2012	2013	Sell or Transfer	$5,000	CX
TRA-682	Temporary Accumulation Area 2	120	1995	Operating	Excellent	2012	2012	2013	Sell or Transfer	$5,000	CX
TRA-683	Temporary Accumulation Area 3	120	1995	Operating	Excellent	2012	2012	2013	Sell or Transfer	$5,000	CX
TRA-684	Temporary Accumulation Area 4	120	1995	Operating	Excellent	2012	2012	2013	Sell or Transfer	$5,000	CX
TRA-685	Temporary Accumulation Area 5	120	1995	Operating	Excellent	2012	2012	2013	Sell or Transfer	$5,000	CX
TRA-686	Temporary Accumulation Area 6	120	1995	Operating	Excellent	2012	2012	2013	Sell or Transfer	$5,000	CX
TRA-687	Gas Bottle Storage Facility	1,000	1995	Operating	Excellent	2012	2012	2032	Demolish	$62,647	CX
TRA-653	Maintenance Building	29,661	1957	Operating	Fair	2013	2013		Demolish	$1,104,151	CX

Table C-3. Nuclear Energy Facility Disposition Plan Through 2013 (sorted by disposition complete date).

Building ID	Name	Floor Area (ft^2)	Year Built	Status	FIMS Facility Condition Code	Mission End Date	Inactivation Date	Disposition Complete Date	Disposition	Estimated Disposition Cost	Expected NEPA Category and ES&H
CFA-643	Office Trailer	1,561	1977	Operating	Excellent	2003	2003	2004	Sell or Transfer	$0	CX
CFA-652	Office Trailer	1,561	1977	Operating	Adequate	2003	2003	2004	Sell or Transfer	$0	CX
TRA-637	Bunkhouse Trailer	600	1978	Operating	Good	2008	2008	2009	Sell or Transfer	$0	CX
TRA-647	ETR Office Building	11,793	1957	Shutdown pending transfer	Not Applicable	2002	2004	2009	Demolish	$849,000	CX
TRA-648	ETR Electrical Building	9,785	1957	Operating	Adequate	2005	2005	2009	Demolish	$640,691	CX
TRA-663	Superior Diesel Building	1,120	1957	Shutdown pending transfer	Not Applicable	2002	2002	2009	Demolish	$51,966	CX
TRA-626	Maintenance Storage Building	1,472	1952	Operating	Excellent	2006	2006	2010	Demolish	$75,568	CX
TRA-641	Gamma Building	2,365	1955	Shutdown pending transfer	Good	2008	2008	2010	Demolish	$260,498	CX
TRA-649	MTR Office Building Wing C	6,852	1966	Operating	Fail	2008	2008	2010	Demolish	$255,070	CX
TRA-652	MTR Office Building Wing B	13,407	1966	Operating	Fair	2008	2008	2010	Demolish	$496,614	CX
TRA-656	Maintenance Storage Building	850	1959	Operating	Excellent		2006	2010	Demolish	$53,250	CX
TRA-620	Office Building	1,888	1952	Operating	Fair	2008	2008	2011	Demolish	$90,075	CX
TRA-629	Gas Cylinder Storage Building	710	1956	Operating	Excellent		2010	2011	Demolish	$44,479	CX
TRA-651	Maintenance/Storage Building	672	1960	Operating	Fair	2010	2010	2011	Demolish	$44,083	CX
TRA-665	Storage Building	776	1962	Operating	Fail		2010	2011	Demolish	$73,565	CX
TRA-668	MTR North Wing Extension	3,596	1956	Operating	Good	2010	2010	2011	Demolish	$314,534	CX

Table C-3. Nuclear Energy Facility Disposition Plan Through 2013 (sorted by disposition complete date) (continued).

Building ID	Name	Floor Area (ft^2)	Year Built	Status	FIMS Facility Condition Code	Mission End Date	Inactivation Date	Disposition Complete Date	Disposition	Estimated Disposition Cost	Expected NEPA Category and ES&H
CFA-611	Change House	16	1991	Operating	Excellent	2011	2011	2012	Sell or Transfer	$0	CX
TRA-635	Material Receiving and Laboratory Area	22,046	1952	Operating	Adequate	2010	2010	2012	Demolish	$801,593	CX
TRA-660	Adv Reactivity Measurement Facility	2,400	1959	Operational standby	Good	2011	2011	2012	Demolish	$183,989	CX
TRA-661	Radiochemistry Laboratories	7,760	1962	Operating	Excellent	2011	2011	2012	Demolish	$1,591,870	CX
CFA-1608	Modular Office	7,056	1994	Operating	Excellent	2012	2012	2013	Sell or Transfer	$25,000	CX
CFA-1609	DOE Modular Office	5,800	1994	Operating	Excellent	2012	2012	2013	Sell or Transfer	$25,000	CX
TRA-610	MTR Fan House	3,216	1952	Operating	Poor	2012	2012	2013	Demolish	$496,872	CX
TRA-640	Hazardous Chemical Storage Building	1,800	1984	Operating	Excellent	2012	2012	2013	Demolish	$85,197	CX
TRA-654	General Laboratory /High Bay (ETRC)	2,400	1959	Operating	Excellent	2012	2012	2013	Demolish	$228,000	CX
TRA-657	MTR Plug Storage Building	5,000	1952	Operating	Excellent	2012	2012	2013	Demolish	$290,000	CX
TRA-681	Temporary Accumulation Area 1	120	1995	Operating	Excellent	2012	2012	2013	Sell or Transfer	$5,000	CX
TRA-682	Temporary Accumulation Area 2	120	1995	Operating	Excellent	2012	2012	2013	Sell or Transfer	$5,000	CX
TRA-683	Temporary Accumulation Area 3	120	1995	Operating	Excellent	2012	2012	2013	Sell or Transfer	$5,000	CX
TRA-684	Temporary Accumulation Area 4	120	1995	Operating	Excellent	2012	2012	2013	Sell or Transfer	$5,000	CX
TRA-685	Temporary Accumulation Area 5	120	1995	Operating	Excellent	2012	2012	2013	Sell or Transfer	$5,000	CX
TRA-686	Temporary Accumulation Area 6	120	1995	Operating	Excellent	2012	2012	2013	Sell or Transfer	$5,000	CX

Table C-4. Environmental Management Excess Facilities Dispositioned Through 2013 (sorted by disposition complete date).

Building ID	Name	Floor Area (ft^2)	Year Built	Status	FIMS Facility Condition Code	Mission End Date	Inactivation Date	Disposition Complete Date	Disposition	Estimated Disposition Cost	Expected NEPA Category and ES&H
TAN-602	Administration Building	47,803	1954	Shutdown pending D&D	Not Applicable	1995	1995	2004	Demolish	$2,385,930	CX
TAN-609	Equip Maintenance Shop	2,894	1954	D&D in progress	Not Applicable	1995	1995	2004	Demolish	$1,342,340	CX
TAN-616	Liquid Waste Treatment	2,958	1954	D&D in progress	Not Applicable	1980	1980	2004	Demolish	$1,876,930	CX
CPP-608	Storage Building	2,600	1953	Shutdown pending D&D	Not Applicable	1998	2002	2005	Demolish	$226,610	CX
CPP-617	Storage Building	4,936	1982	Shutdown pending transfer	Not Applicable	2000	2000	2005	Demolish	$429,620	CX
CPP-629	Office Building	6,869	1988	Shutdown pending disposal	Excellent	2001	2002	2005	Demolish	$294,990	CX
CPP-T-1	Construction Management Building	900	1965	Shutdown pending D&D	Not Applicable	1996	2002	2005	Demolish	$47,650	CX
CPP-T-5	Temporary Office Building	900	1965	Shutdown pending D&D	Not Applicable	1996	2002	2005	Demolish	$29,100	CX
CPP-TB-4	Craft Lunch Room	4,800	1977	Shutdown pending D&D	Not Applicable	2002	2002	2005	Demolish	$181,720	CX
CPP-TB-6	Quality Office Building	1,116	1981	Shutdown pending D&D	Not Applicable	1997	1997	2005	Demolish	$41,980	CX
TAN-604	Miscellaneous Laboratory Facility	12,364	1954	Operating	Fail	2004	2004	2005	Demolish	$676,440	CX
TAN-606	Maintenance Building	5,752	1954	Shutdown pending D&D	Not Applicable	2002	2002	2005	Demolish	$426,560	CX
TAN-636	Carpentry and Paint Shop	2,331	1967	Operating	Good	2003	2003	2005	Demolish	$142,750	CX
TAN-653	Multi Craft Shop	9,285	1985	Operating	Fail	2004	2004	2005	Demolish	$510,530	CX
TAN-654	Metal Storage Building	263	1986	Shutdown pending D&D	Not Applicable	2002	2002	2005	Demolish	$29,490	CX
TAN-662	Gas Cylinder and Oil Storage	313	1978	Operating	Excellent	2004	2004	2005	Demolish	$35,270	CX

Table C-4. Environmental Management Excess Facilities Dispositioned Through 2013 (sorted by disposition complete date) (continued).

Building ID	Name	Floor Area (ft^2)	Year Built	Status	FIMS Facility Condition Code	Mission End Date	Inactivation Date	Disposition Complete Date	Disposition	Estimated Disposition Cost	Expected NEPA Category and ES&H
TAN-667	Small Machine Shop	1,860	1983	Operating	Adequate	2003	2003	2005	Demolish	$129,630	CX
TAN-670	Chlorine Treatment Building	48	1954	Shutdown pending D&D	Not Applicable	1995	1995	2005	Demolish	$5,060	CX
CPP-1607	Automatic Foam Fire Protection Building	160	1983	Operating	Good	2004	2005	2006	Demolish	$15,270	CX
CPP-1617	Waste Staging Facility	6,000	1986	Operating	Excellent	2004	2005	2006	Demolish	$2,744,540	CX
CPP-1630	Fire Protection Bldg	247	1987	Operating	Fair	2004	2005	2006	Demolish	$18,990	CX
CPP-664	QA Office Building	6,000	1981	Operating	Good	2004	2005	2006	Demolish	$182,010	CX
CPP-665	FPR Project Offices	19,200	1980	Shutdown pending D&D	Not Applicable	2001	2002	2006	Demolish	$997,420	CX
CPP-693	INTEC Warehouse	2,300	1980	Operating	Good	2004	2005	2006	Demolish	$131,190	CX
CPP-695	Quality X-Ray Facility	1,000	1982	Operating	Excellent	2004	2005	2006	Demolish	$95,860	CX
CPP-TB-1	Carpenter Shop	900	1980	Operating	Excellent	2004	2005	2006	Demolish	$47,960	CX
TAN-603	Service Building /Steam Plant	11,683	1954	Operating	Good	2004	2004	2006	Demolish	$1,434,570	CX
TAN-611	Fuel Pump House	419	1954	Operating	Poor	2004	2004	2006	Demolish	$42,670	CX
TAN-647	Contaminated Storage Building	5,274	1960	Operating	Excellent	2004	2004	2006	Demolish	$649,510	CX
TAN-695	Hazardous Materials Storage	432	1993	Operating	Excellent	2004	2004	2006	Sell or Transfer	$29,380	CX
CPP-1647	Demineralizer Waste Neutralize	672	1991	Operating	Excellent	2005	2006	2007	Demolish	$57,210	CX
CPP-672	RadCon Storage	1,000	1981	Operating	Fair	2005	2006	2007	Demolish	$82,430	CX
PBF-616	Storage Building	820	1962	Shutdown pending D&D	Not Applicable	2002	2002	2007	Demolish	$60,450	CX
PBF-617	Storage Building	368	1963	Shutdown pending D&D	Not Applicable	2002	2002	2007	Demolish	$27,270	CX
PBF-626	Storage Building	586	1973	Shutdown pending D&D	Not Applicable	2002	2002	2007	Demolish	$43,900	CX

Table C-4. Environmental Management Excess Facilities Dispositioned Through 2013 (sorted by disposition complete date) (continued).

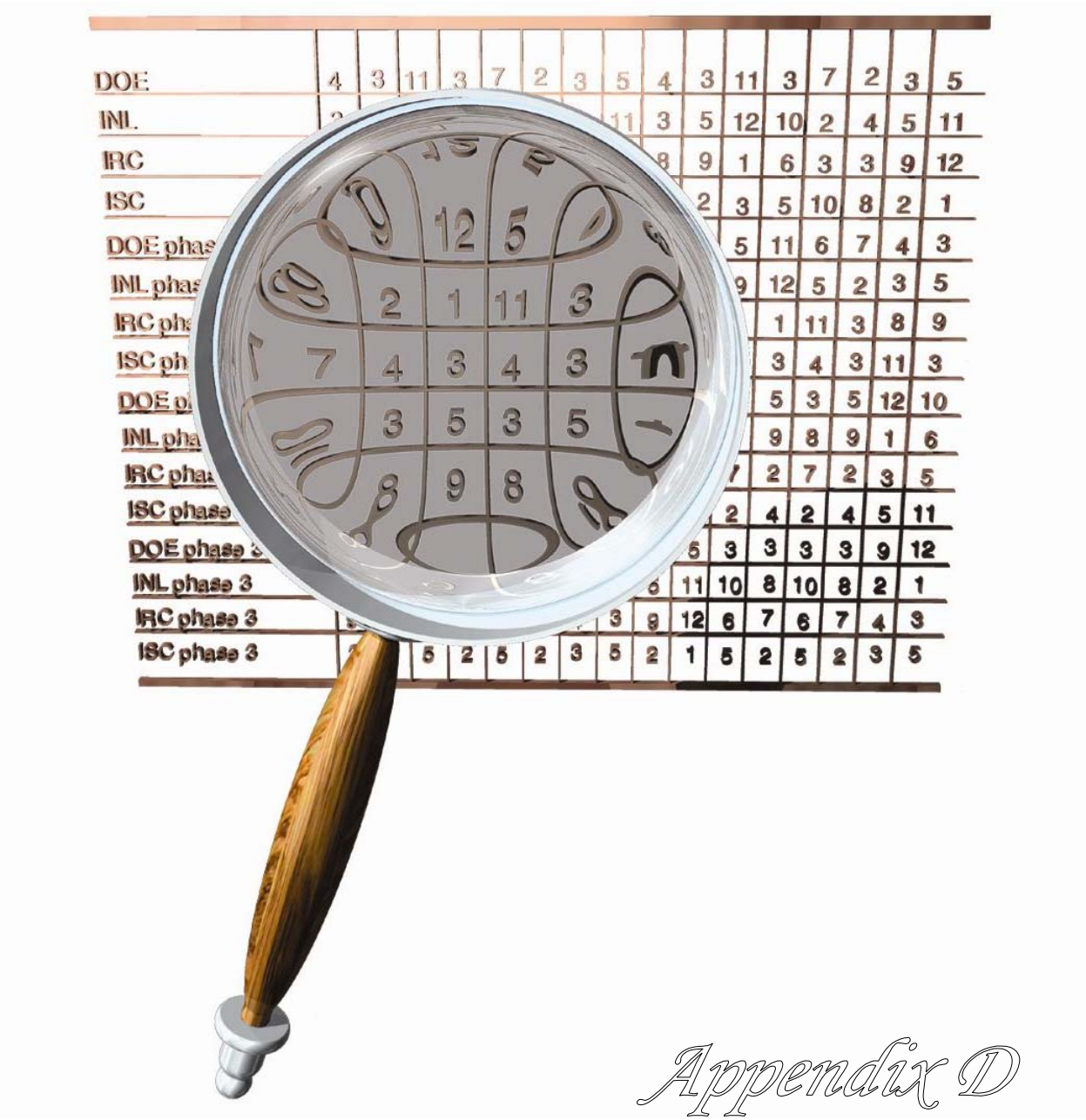
Building ID	Name	Floor Area (ft^2)	Year Built	Status	FIMS Facility Condition Code	Mission End Date	Inactivation Date	Disposition Complete Date	Disposition	Estimated Disposition Cost	Expected NEPA Category and ES&H
PBF-635	WERF Auxiliary Building	3,424	1982	Shutdown pending transfer	Not Applicable	2002	2003	2007	Demolish	$200,520	CX
TAN-640	Assembly and Test Building	3,345	1958	Shutdown pending D&D	Not Applicable	2001	2001	2007	Demolish	$1,054,390	CX
TAN-641	Control and Equipment Building	14,675	1958	Shutdown pending D&D	Not Applicable	2001	2001	2007	Demolish	$3,163,580	CX
TAN-642	Guard House	128	1957	Shutdown pending D&D	Not Applicable	2002	2002	2007	Demolish	$12,000	CX
TAN-643	Chlorination Building	64	1957	Shutdown pending D&D	Not Applicable	1990	1990	2007	Demolish	$4,870	CX
TAN-644	Deepwell Pump House	311	1957	Shutdown pending D&D	Not Applicable	2001	2001	2007	Demolish	$29,530	CX
TAN-645	Control and Administration Building	8,146	1960	Shutdown pending D&D	Not Applicable	2002	2002	2007	Demolish	$1,085,890	CX
TAN-652	Fire Protection Pump House	676	1965	Shutdown pending D&D	Not Applicable	2001	2001	2007	Demolish	$68,990	CX
TAN-686	Office Trailer	3,000	1985	Operating	Good	2004	2004	2007	Sell or Transfer	$241,820	CX
PBF-601	Control Building and Addition	8,048	1956	Shutdown pending D&D	Not Applicable	2002	2002	2008	Demolish	$343,630	CX
PBF-604	Terminal Building	610	1955	Shutdown pending transfer	Not Applicable	1992	1992	2008	Demolish	$56,940	CX
PBF-606	Instrument Cell	230	1955	Shutdown pending transfer	Not Applicable	1992	2006	2008	Demolish	$19,380	CX
PBF-621	Emergency Generator Building	320	1970	Operating pending D&D	Not Applicable	1992	2006	2008	Demolish	$27,710	CX
PBF-624	Auxiliary Building	192	1973	Operating	Not Applicable	1992	2006	2008	Demolish	$20,790	CX
PBF-627	Gas Cylinder Storage	130	1966	Operating	Not Applicable	1992	2006	2008	Demolish	$13,860	CX
PBF-629	Stack Gas Monitor Building	90	1981	Operating	Not Applicable	1992	2006	2008	Demolish	$8,340	CX

Table C-4. Environmental Management Excess Facilities Dispositioned Through 2013 (sorted by disposition complete date) (continued).

Building ID	Name	Floor Area (ft^2)	Year Built	Status	FIMS Facility Condition Code	Mission End Date	Inactivation Date	Disposition Complete Date	Disposition	Estimated Disposition Cost	Expected NEPA Category and ES&H
PBF-634	Fire Water Pump House	750	1983	Operating	Not Applicable	1992	2006	2008	Demolish	$65,170	CX
TAN-618	Data Collection Building	134	1985	Operating	Good	2004	2004	2008	Demolish	$14,280	CX
TAN-628	Warehouse	19,549	1956	Operational standby	Not Applicable	2002	2002	2008	Demolish	$1,051,590	CX
TAN-646	Assembly and Test Building	16,870	1965	Shutdown pending D&D	Not Applicable	2002	2002	2008	Demolish	$4,434,520	CX
TAN-648	Storage Building	6,682	1960	Operating	Excellent	2003	2003	2008	Demolish	$929,230	CX
PBF-625	Maintenance and Storage Building	3,200	1966	Operating	Not Applicable	1992	2006	2009	Demolish	$246,670	CX
TAN-694	Tank Storage Building	597	1985	Operating	Excellent	2004	2004	2009	Demolish	$122,180	CX
CPP-694	NWCF Organic Solvent Disposal	850	1982	Operating	Good	2004	2010	2010	Demolish	$1,819,040	CX
CPP-648	Sludge Tank Control House	620	1973	Operating	Poor	2010	2010	2011	Demolish	$9,565,570	CX
TAN-633	Hot Cell Annex	3,296	1954	Operational standby	Excellent	1995	2005	2011	Demolish	$9,411,750	CX
TAN-649	Water Filtration Building	210	1956	Operating	Excellent	2005	2005	2011	Demolish	$172,870	CX
CPP-1603	Landlord Storage Facility	240	1984	Operating	Fair	2010	2011	2012	Demolish	$14,410	CX
CPP-1616	Glass Shop Storage	300	1986	Operating	Adequate	2010	2011	2012	Demolish	$26,680	CX
CPP-651	Unirradiated Fuel Storage Facility	4,415	1984	Operating	Excellent	2010	2011	2012	Demolish	$1,300,230	CX
CPP-689	Coal Plant Guard House	100	1983	Shutdown pending disposal	Not Applicable	2000	2002	2012	Demolish	$8,710	CX
CPP-690	Coal Plant Storage Building	1,300	1983	Shutdown pending disposal	Not Applicable	2000	2002	2012	Demolish	$81,920	CX
CPP-696	Coal Plant Offices	800	1984	Shutdown pending disposal	Not Applicable	2000	2002	2012	Demolish	$69,860	CX

Table C-4. Environmental Management Excess Facilities Dispositioned Through 2013 (sorted by disposition complete date) (continued).

Building ID	Name	Floor Area (ft^2)	Year Built	Status	FIMS Facility Condition Code	Mission End Date	Inactivation Date	Disposition Complete Date	Disposition	Estimated Disposition Cost	Expected NEPA Category and ES&H
CPP-TB-3	TB-3 FPR Eastside Guardhouse	500	1986	Operational standby	Excellent	2010	2011	2012	Demolish	$30,170	CX
TAN-666	Radioactive Liquid Waste Transfer and Storage	1,599	1980	Operating	Excellent	2004	2004	2012	Demolish	$4,550,090	CX
CPP-1612	Pond 326 Pumphouse	25	1985	Operational standby	Poor	2011	2012	2013	Demolish	$30,010	CX
CPP-682	S&H Emergency Equipment Shop	1,500	1982	Operating	Excellent	2011	2012	2013	Demolish	$97,380	CX
CPP-688	Coal Plant Unload Building	10,625	1983	Shutdown pending disposal	Not Applicable	2000	2002	2013	Demolish	$762,810	CX
TAN-608	Water Filtration Building	334	1954	Operating	Poor	2005	2005	2013	Demolish	$189,030	CX



Appendix D

Appendix D

Planning Integration and Prioritization Process

The Planning Integration and Prioritization process is used to identify infrastructure needs at the Idaho National Laboratory (INL). Needs may be identified by means of inspection, analysis of mission needs resulting from strategic guidance, or through stakeholder input. The Planning Integration and Prioritization Flow diagram (see Figure D-1) shows the infrastructure planning process:

1. **Asset**—Asset (building, system, or structure) information resides in the Area Planning Database, which is accessible on the intranet. This developing database contains information pertinent to INL structures including: building number, name, status, area, size, use description, use category, interim action, year built, end use date, condition, and other associated information. In addition, each building page contains links to on-line inspection reports, such as the Condition Assessment Survey Report and the Roofer Report.
2. **Asset Condition**—Evaluation of the infrastructure helps to identify deficiencies that may affect the welfare of INL workers, the public, the environment, missions, and DOE property. These deficiencies are documented through various inspection reports including the Condition Assessment Survey.
3. **Strategic Guidance**—Strategic guidance sets in motion the various types of infrastructure needs at the INL. These high level documents contain information regarding current and future INL mission, infer or identify infrastructure needs, and set in place the path forward.
4. **Needs Identified and Documented**—Infrastructure needs result from known, validated, and documented deficiencies. Needs may be identified by any number of avenues including (but not limited to) asset condition inspections, documented health, safety, environmental issues, preventive maintenance reports, tenant reports, documented system studies (such as roads, rails, roofs, heating, ventilating, and air conditioning, electrical) documented mission short comings or needs, and stakeholder input.
5. **Initial Prioritization**—Upon receipt the Infrastructure Program reviews and validates each request for thoroughness and completeness. Requests that are not complete or lack specific detail to justify the need are returned to the requester. The remaining requests are initially prioritized based on Capital Asset Management Process/Threat Based rankings and submitted for management validation of needs and priorities. The initial prioritization of infrastructure needs are acknowledged in the *Site Integrated Infrastructure Ten-Year Acquisition and Recapitalization Projects Plan* and submitted to the NE-ID Infrastructure Management Division for their information.
6. **Mission Need**—Based on management's direction Infrastructure Mission Need documents are prepared and submitted to the NE-ID Office of Infrastructure Management for review and approval. Mission Need documents are prepared by the program sponsor/user in concert with the cognizant Infrastructure Program Area Planner and an assigned construction project manager.
7. **Senior Leadership Review and Approval**—Upon management review and approval the Mission Need document(s) are transmitted to the NE-ID Office of Infrastructure Management for review and approval. Approval of this document by NE-ID

authorizes the contractor to proceed with the alternative evaluation. A NE-ID Office of Infrastructure Management project manager will be assigned at this time.

8. **Alternatives/Feasibility Studies—**Once the mission need is approved by NE-ID the contractor conducts alternative/feasibility studies to identify and recommend viable alternatives to meet the mission need. At this time the contractor's project manager assumes the lead and in concert with the area planner and program sponsor/user identifies study/conceptual design team members.

9. **NE-ID Concurrence—**The Infrastructure and Maintenance Program's review board approves the final alternative selection and sets mission need priorities. This information is submitted to the NE-ID Infrastructure Management Division to obtain NE-ID Office and Senior Leadership concurrence. (Note: The final prioritization of infrastructure capital project needs is documented in the *Site Integrated Infrastructure Ten-Year Acquisition and Recapitalization Projects Plan* and submitted to the NE-ID Office of Infrastructure Management for distribution to the NE-ID Program Office and Site Area Managers. Equipment needs are documented in the General Purpose Capital Equipment Five-Year Acquisition Plan.)

10. **Maintain/Build/Procure/Dispose/Privatize/ Lease—**Depending on the alternative(s) selected different paths are taken. Each chosen alternative will follow relevant DOE Orders, INL procedures and guides.

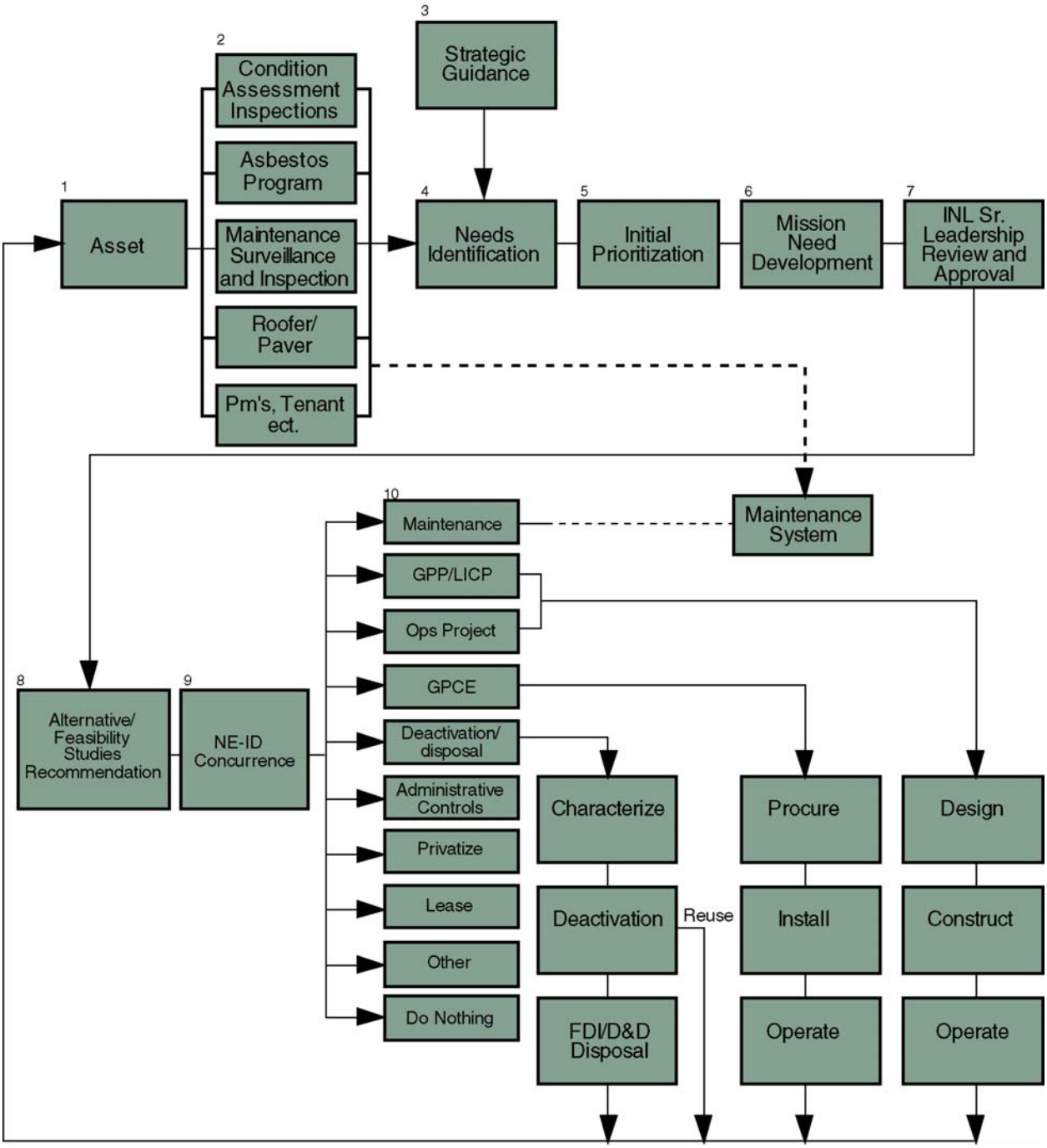
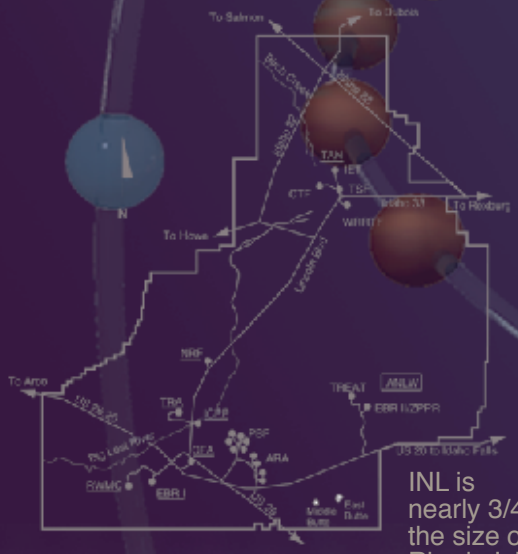


Figure D-1. The planning integration and prioritization process is used to identify infrastructure needs.



INL is nearly 3/4 the size of Rhode Island